Report from the project:

Indigenous and Local Knowledge in a Scoping Study for a Nordic IPBES Assessment

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NAPTEK
traditionell kunskap
och biologisk mångfald

Tunón, H., Kvarnström, M, & Malmer, P., 2015. *Report from the project: Indigenous and Local Knowledge in a Scoping Study for a Nordic IPBES Assessment*. CBM:s skriftserie nr 96. Swedish Biodiversity Centre, Uppsala.

Ecology, then, also involves protecting the cultural treasures of humanity in the broadest sense. More specifically, it calls for greater attention to local cultures when studying environmental problems, favouring a dialogue between scientific-technical language and the language of the people. Culture is more than what we have inherited from the past; it is also, and above all, a living, dynamic and participatory present reality, which cannot be excluded as we rethink the relationship between human beings and the environment.

His Holiness Pope Francis, Encyclical letter Laudato Sí On care for our common home, May 24 2015

Cover: Upper left: Saami people in Finland are rounding up reindeer (photo: Tero Mustonen), goats at a summer farm in Budalen, Norway (photo: Håkan Tunón), cows and calves in a traditional apple meadow i Bråbygden, Sweden (photo: Håkan Tunón), winter seining in Karelia, Finland (photo: Tero Mustonen).
Layout: Håkan Tunón
Print: Taberg Media Group.
ISBN: 978-91-88083-06-7
ISSN: 1403-6568

Preword

There is a multitude of local cultures and customary uses of biological resources, and a variety of local subsistence systems all over the world, including the Nordic region. The need to include the knowledge and worldviews they are based upon in assessments of biological diversity and ecosystem services, is today recognized in many fora. This is especially true when the aim is to evaluate mankind's dependence of and impact on biological resources as a base for present and future policy and decisions. The local communities and their cultures and knowledge are in the IPBES context referred to as "indigenous and local knowledge" (ILK). IPBES has since it's beginning agreed to recognize and respect indigenous and local knowledge in all its functions.

The effort to evaluate the mutual impact between today's status and trends of biological diversity and local communities all over the region in a Nordic IPBES assessment is dependent on a sincere participation process. To achieve a full and effective participation of indigenous peoples and local communities in the context of a regional IPBES assessment is a challenge. IPBES still is in the process of developing its methods and procedures, and this scoping study is contributing to this experience.

The overall aim to transfer the local perspective and knowledge into a more abstract regional summary with the complexity of today's society is likely to lead to simplifications. Thus it is important to incorporate the local perspective in the background process of preparing an assessment, and have a continuous ILK-referee mechanism in order to ensure that the drawn conclusions aren't erroneously made from the local perspective.

This report is focusing on how effective local participation could be achieved to a certain degree to reach a deeper understanding regarding how the local communities are being affected by global change, such as changes in climate, biological diversity and political decisions. The report is based on four different studies: a Nordic ILK-workshop held in the vicinity of Uppsala in June 2015, a ILK-questionnaire regarding perceived observations as well as perspectives on participation processes, a series of local workshops in Finland arranged by Snowchange Cooperative, and an interview and literature study on the interface of ILK and citizen science (another important measure to reach a trustworthy assessment).

We wish to thank all that have contributed to this study. The multitude of perspectives that have been brought forward by participants in the process provided a richness that has been so inspiring for all of us, in a collective learning process. This has been completely necessary for a study like this. The study was financed by the Swedish Environmental Protection Agency and is connected to the Nordic project "Scoping Study for Nordic Assessment to feed into IPBES" coordinated by Maria Schultz funded by the Nordic Council of Ministers.

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Content

1. Introduction

This is the report from a scoping study of how to create synergies across knowledge systems, such as indigenous, local and scientific knowledge based on equity and reciprocity, for inclusion in a possible future full Nordic IPBES assessment.

1.1. Background to IPBES and the assignment

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was established in 2012 with the aim of strengthening the dialogue between science and policy for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human wellbeing and sustainable development (see www.ipbes.net). In order to reach these goals, the platform needs to strengthen the dialogue between the scientific community, governments, other holders of knowledge and actors, which are closely involved in sustainable use and conservation of biodiversity and ecosystem services.

The IPBES plenary has decided to perform regional and sub-regional assessments of biodiversity and ecosystem services in order to feed into a global assessment by 2018. The Nordic countries, with support from the Nordic Council of Ministers, have come to the conclusion that one of the sub-regional assessments should be a Nordic assessment. A Nordic assessment on the status of biodiversity and ecosystem services would contribute to enhancing the foundation for ecosystem management and sustainable development in the Nordic countries, and it would also strengthen Nordic cooperation within this field. There are several benefits to link a Nordic assessment to the global process as well as the science-policy platform IPBES. Consequently it was decided to do a scoping study regarding a possible Nordic IPBES assessment and a connected specific scoping study concerning the contribution of ILK in a future Nordic assessment.

In 2006 the Swedish government assigned the Swedish Biodiversity Centre (CBM) to launch a "national programme for local and traditional knowledge related to conservation and sustainable use of biological diversity" (Naptek) in order to facilitate Sweden's implementation of article 8(j) – on traditional knowledge of indigenous peoples and local communities embodying traditional lifestyles (IPLCs) – of the UN Convention on Biological Diversity (CBD), later also issues regarding article 10(c) – customary sustainable use. The work of Naptek has dealt with traditional knowledge in both the Saami community – in collaboration with the Swedish Saami Parliament – and other traditional local communities or traditional knowledge practitioners. Some activities have also involved cooperation with the Norwegian Nature Inspectorate (the project MONA, *Mennesket og naturarven*, "Man and the Natural Heritage") and contacts with the Metsähallitus in Finland, which could be developed further within this context.

Based on these experiences, the Swedish Biodiversity Centre and Naptek were given the task of conducting the study "Indigenous and Local Knowledge in Scoping Study for the Nordic IPBES Assessment", which has been financed by the Swedish Environmental Protection Agency (SEPA), which also coordinated the scoping study of a Nordic IPBES assessment.

The IPBES conceptual framework includes six interlinked elements which form a social-ecological system that works on various scales in time and space: i) *nature*; ii) *nature's benefits to people*; iii) *anthropogenic assets*; iv) *institutions and governance systems and other indirect drivers of change*; v) *direct drivers of change*; and vi) *good quality of life*. The framework[1] is graphically depicted in figure 1, below. This framework emphasizes the necessity of biodiversity and ecosystem services for human wellbeing and good quality of life. In other knowledge systems, this is often expressed as "Living well in harmony with nature" or "living well in balance and harmony with Mother Earth". These perspectives acknowledge the diversity of the existing relationships between human and nature in different cultures.

1 Dias, S. et al, The IPBES Conceptual Framework — connecting nature and people, *Current Opinion in Environmental Sustainability* 2015, 14:1–16; *Report of the second session of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, IPBES/2/17, 9 January 2014

As human beings we can create and nurture biodiversity, as well as affect it negatively, but we are all dependent on it. Biocultural diversity, as also expressed in the IPBES conceptual framework, is defined as the total variety exhibited by the world's natural and cultural systems, and starts from the insight that culture and nature are interdependent. Biocultural diversity is based on three observations:

1) that diversity of life includes human cultures and languages;
2) there are close links between biodiversity and cultural diversity; and
3) these links have developed over time through mutual interaction and adaptation and possibly co-evolution.

One aspect of this interrelatedness is the strong overlap between areas rich in biodiversity and the diversity of languages and cultures over the world.[2] Biocultural diversity is frequently referred to among the holders of indigenous and local knowledge that have been involved in the Nordic scoping study. The Nordic countries hold a wealth of local cultures characterized by the customary use of local biological resources, and a richness of languages, dialects and knowledge. It is important to make the strength of these visible in terms of governance of ecosystems and biocultural diversity when including ILK in a Nordic IPBES assessment.

1.2 IPBES procedures and approaches for working with ILK in IPBES assessments

According to its operating principles IPBES aims to "*Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems*"[3]. Consequently, a specific Task Force on indigenous and local knowledge was established at IPBES 2 in December 2013, specifically focusing on *Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems,* in the IPBES Work Programme 2014–2018.

Under deliverable 1(c) the task force is presently developing:

1) a roster and network of experts to support the Platform's work;
2) global dialogue workshops of indigenous and local knowledge experts;
3) a review of regional case studies to inform the Platform's procedures for engaging with indigenous and local knowledge;
4) procedures and approaches for working with indigenous and local knowledge systems.
5) establishing a participatory mechanism for indigenous and local knowledge systems under the Platform.

During the present study, the work to develop procedures and approaches for working with indigenous and local knowledge systems in IPBES assessments was still in progress. However, possible methods have been advised in documents related to ILK presented through the IPBES process, such as the Expert group report from 2013[4] and the progress report to IPBES 3 in early 2015 (IPBES3/INF/2).[5] Furthermore, a global dialogue on indigenous and local knowledge about pollinators and pollination was held in December 2014[6] and the outcomes this was included in the thematic IPBES fast track assessment on pollinators and pollination associated with food production.

The IPBES ILK Taskforce is also organizing regional ILK dialogue workshops in order to contribute to the regional assessments of biodiversity and ecosystem services, based on decisions at IPBES 3.[7] An ILK workshop for Europe and Central Asia is planned for January 2016.

In addition, the IPBES expert group on Deliverable 3(d) "Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature's benefits to people including ecosystem services" is also providing relevant and useful guidance for the future inclusion of ILK in IPBES in a Nordic assessment. This expert group evaluates different valuation methodologies according to different visions, approaches and knowledge systems. The balance between different values, and how to visualize non-monetary values in decision-making is very important for understand and respect the priorities in different contexts, cultures and knowledge systems.

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2 Maffi, L., & Woodley, E. (2010). *Biocultural diversity conservation: A global sourcebook*. London: Earthscan.

3 (UNEP/IPBES.MI2/9Appendix 1, para 2d).

4 Report from the expert workshop and initial elements for an approach towards principles and procedures (UNESCO document)

5 http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf .

6 http://www.unesco.org/new/en/natural-sciences/priority-areas/links/biodiversity/projects/indigenous-knowledge-within-the-framework-of-ipbes/pollination/

7 http://www.unesco.org/new/en/natural-sciences/priority-areas/links/biodiversity/projects/indigenous-knowledge-within-the-framework-of-ipbes/call-for-submissions-regional-assessments-of-biodiversity-and-ecosystem-services/

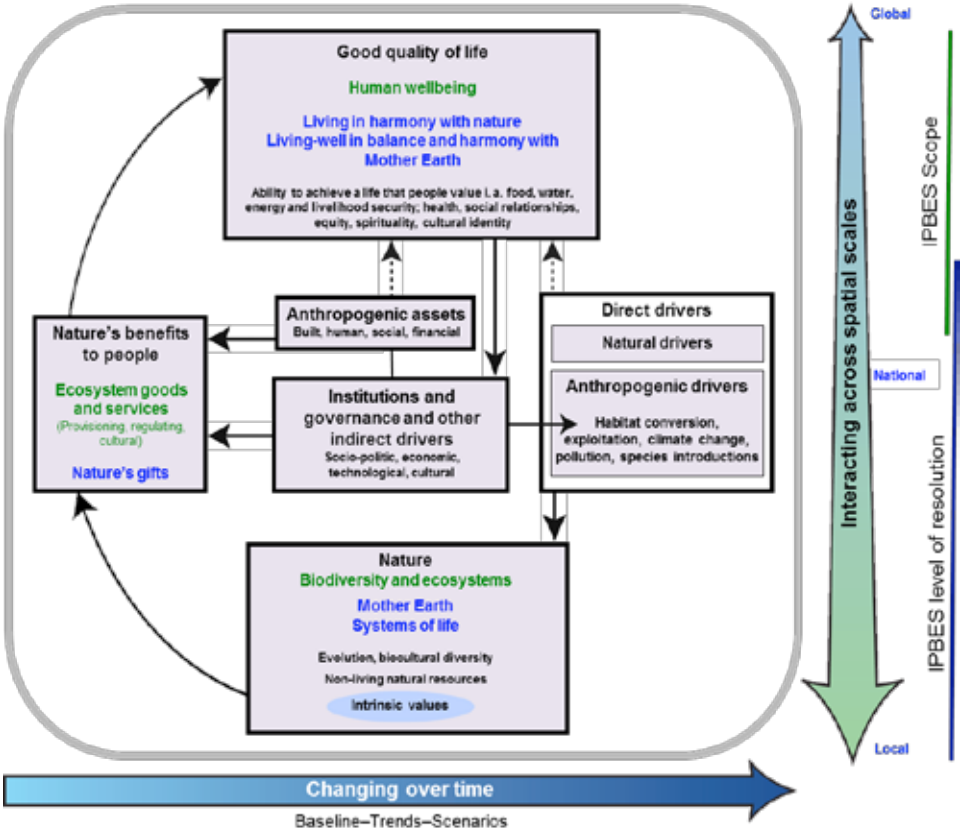

Figure 1. Analytical conceptual framework for IPBES*. This figure demonstrates the main elements and relationships for the conservation and sustainable use of biodiversity and ecosystem services, human well-being and sustainable development. Similar conceptualizations in other knowledge systems include "living in harmony with nature" and "Mother Earth", among others. In the main panel, delimited in grey, "nature", "nature's benefits to people" and "good quality of life" (indicated as black headlines) are inclusive of all these world views; text in green denotes the concepts of science; and text in blue denotes those of other knowledge systems. Solid arrows in the main panel denote influence between elements; the dotted arrows denote links that are acknowledged as important, but are not the main focus of the Platform. The thick coloured arrows below and to the right of the central panel indicate different scales of time and space, respectively. Even if the figure cannot be changed the Nordic assessment should handle more processes and dependencies than expressed with the arrows in the Conceptual Framework of IPBES.*

1.3. Multiple Evidence Base approach (MEB) for connecting knowledge systems

The present study has been inspired by the recent development of a Multiple Evidence Base approach (MEB)[8] for connecting knowledge systems. This approach considers indigenous, local and scientific knowledge systems as generating complementary forms of knowledge, which combined can generate new insights for sustainable governance of biodiversity, ecosystem services and biocultural systems**.** The multiple evidence base approach has emerged as a part of the still on-going "Dialogue on connecting indigenous, local and scientific knowledge systems", initiated through dialogues in Jokkmokk, Sápmi, Sweden 2011, followed by the international dialogue in Guna Yala, Panama right before the meeting in Panama that established the IPBES in 2012[9]. These dialogues have been organized in collaboration between SwedBio at Stockholm Resilience Centre, Naptek at the Swedish Biodiversity Centre and the International Indigenous Forum on Biodiversity (IIFB)

The multiple evidence base approach emphasizes the importance of equitable and transparent processes for connecting diverse knowledge systems, and of maintaining the integrity of each knowledge system throughout the process. If applied in an assessment such as the Nordic IPBES, the evaluation of knowledge occurs within rather than across the contributing knowledge systems. The enriched picture created by knowledge mobilized this way, with contributions of holders of knowledge from diverse knowledge systems, in the Nordic countries, can function both as a base for po-

8 A Multiple Evidence Base approach emphasizes the complementarity of knowledge systems, without assigning any one knowledge system as the dominant one. See Tengö et al. 2014, *Ambio* 43, 579-591, http://link.springer.com/article/10.1007%2Fs13280-014-0501-3

9 http://www.stockholmresilience.org/21/policy--practice/swedbio/dialogues/guna-yala-dialogue.html

licy decisions and as a starting point for joint problem formulation and further knowledge generation. In an inclusive and iterative process, a multiple evidence base approach can enhance the legitimacy, credibility and usefulness of the assessment outcomes for a wide range of actors.

1.4 Nordic experiences of connecting across knowledge systems

There is a rich and constantly evolving source of methods, practices and experiences from collaboration across knowledge systems in the Nordic context such as developed by the Saami peoples, e.g. in the Árbediethu-project[10] in Norway and in the management organisation of the world heritage site Laponia, in the storytelling project by Snowchange Cooperative, and in a project where Naptek and the Swedish Saami Parliament have been combining academic knowledge with local knowledge in the context of the interdependence of reindeer husbandry and local biodiversity. The PISUNA process where local knowledge is used to guide resource management in Greenland is another example. Impacts of existing policies on biodiversity and the wellbeing of local communities in Greenland and elsewhere in the Nordic and Arctic are described in the publication *Local knowledge and resource management* (2015)[11]. Another example is the international symposium in Copenhagen in 2013 on the use of indigenous and local knowledge to document and manage natural resources in the Arctic, organized by the Greenland Government and many partners.[12]

Thus, in the Nordic countries several initiatives have been working in line with the intentions of IPBES to create synergies across knowledge systems, based on equity and mutual learning. The expectation is that the process within the future IPBES assessments will contribute with lessons that are valuable also in the broader context, beyond IPBES. While none of the approaches and efforts piloted and used so far is ideal in all aspects, they all are important and innovative, not only from a Nordic but also from an international perspective and merit further attention and potential for scaling-up. It is therefore important to more formally develop and ensure the use of methods for creating synergies across knowledge systems in all the functions of the framework of IPBES, not just to feed into the IPBES assessments themselves.

In addition, the work of IPBES also has strong synergies and interrelationships with ongoing efforts to connect indigenous, local and scientific knowledge within recent policy developments in other global biodiversity fora, including: (1) the Aichi Biodiversity Targets for the CBD that world leaders have agreed upon; (2) the recommendations in the Arctic Biodiversity Assessment by CAFF in 2013; and (3) the recommendations in the Arctic Human Development Report II that was prepared for the Sustainable Development Working Group of Arctic Council in 2015.

1.5 Historical reflections on man as an ecological factor in the Nordic countries

Man is and has for a long time probably been the most important ecological factor when it comes to shaping the landscapes and the biodiversity of the Nordic countries. The Ice age left Denmark and Southern Sweden about 15 000 years ago, but even before that reindeer hunting family groups lived in the area. Also in the most northern parts of Sweden hunter-gatherers were present already 12 000 years ago. About 10 000 years ago the ice had left most of Scandinavia and hunting societies developed in the millennia to come as the climate gradually changed. About 4000 B.C. agriculture was first introduced into Scandinavia and husbandry of domesticated and semi-domesticated animals appeared. Settlements with grazing grounds and later cultivations created a new biocultural landscape. Agriculture increased its importance first in the southern parts and gradually expanded to the north, adapting to the local cultivation zones. During the past millennia the climate has changed several times and consequently influenced the living conditions in the Nordic region. However, today and during the past millennium, the temperature has more or less been stable, with few fluctuations. In the southern and central parts as well as along the coastal zones the population numbers increased and the presence of human activities began to influence the biodiversity. These areas have also been the most favourable for agricultural production while up in the northerly mountainous or alpine areas animal husbandry, gathering, hunting and trapping continued to be the main livelihoods. Grazing of outlying land has been important for shaping the landscape and the biodiversity all over

10 http://www.arbediehtu.no

11 available at the link: http://norden.diva-portal.org/smash/record.jsf;jsessionid=JepZqTC_da_370NkuSZkX3A_ZqSp-CB_iceCOoXc3.diva2-search3-vm?pid=diva2%3A791816&dswid=-5685

12 Nordic Council of Ministers 2015; http://www.norden-ilibrary.org/social-issues-migration-health/local-knowledge-and-resource-management_tn2015-506

Carta Marina by Olaus Magnus from 1539 – showing the presence and activities of humans all over the Nordic countries. Different kinds of use of biological resources is illustrated everywhere, e.g. fishing on Iceland, whaling on Faroe Islands, the hunting of seals on the ice of the Bothnian Bay, milking of reindeer and seining on the lakes in Lapland (Sápmi). (Greenland is not depicted on this map).

Scandinavia during the last centuries. In the densely populated areas, pastures and outlying land were grazed, but in the more scarcely populated areas semi-natural grasslands in forests, mires and mountains were used for fodder production. In Northern Fennoscandia the Saami reindeer husbandry has contributed to shaping the landscapes and biodiversity more or less from coast to coast.

During the 16th and 17th century an increasing national colonialism and taxation of the more peripheral parts of the countries were promoted by the states. Huge amounts of fur and pelts were obtained in taxes from Northern Scandinavia, but also a lot of game. In the 17th century prospecting for mining was initiated in the Scandinavian mountains, or the Scandes, the mountain ridge on the border between Sweden and Norway. From 18th and 19th centuries the Swedish state encouraged settlements of farmers in the mountainous areas, the areas that previously by agreement were considered as Saami territories. Finland was a part of Sweden from 1157 to 1809 as was Estonia and Latvia from the 17th century until 1721.

The Faroe Islands were probably colonized twice, first around the 4th or 5th century and later in the 6th and 8th centuries. Iceland was colonized in the 9th–10th century. The climate and the environment were suited for animal husbandry, hunting and fishing, as well as some minor grain cultivation. Greenland has been inhabited by people for approximately 5 000 years, mainly hunting and fishing communities. Small settlements of Scandinavians appeared around 1000 A.D. – a small community under Danish supremacy existed for a couple of hundred years. In the 16th and 17th century whaling companies colonized Greenland and from 1814 it became an official Danish colony. In 2008 Greenland received greater autonomy from Denmark. Grazing of particularly sheep and horses have contributed to shape, and is still having strong impact on the flora and fauna on Faroe Islands, Iceland and parts of Greenland.

These centuries of customary use of a broad range of available biological resources in different biotopes and climates have shaped the landscape and the biodiversity in most parts of the Nordic countries. When the agrarian revolution took place in Fennoscandia, starting

When selective cutting of farmers' forest were replaced with modern clear cut forestry the ecosystem changed and many of the species connected to the grazed mozaic forests declined have become rare or threatened. Photo: Håkan Tunón.

in the 18th and 19th century, it constituted the beginning of a major change in the traditional agricultural practices, and thus in the landscapes. In the mid 19th century industrial forestry was introduced. During the 20th century the political ambition of structure rationalization led to larger and larger units within all forms of land use, agriculture, forestry, fishery, etc. This created a situation where large-scale production has outcompeted most of the remaining small-scale customary use. This has also led to the abandonment of less productive areas, and the diversity in the mosaic rural landscape has declined.

There are still remaining pockets of small-scale production units or self-sustenance customary uses of biological resources maintaining a biocultural diversity in different parts all around the Nordic countries. Humans have been an important ecological factor in shaping the biodiversity and creating the biocultural landscapes in the Nordic countries for at least 10.000 years, but the societal changes during the last 50–100 years have created major changes in the use of biodiversity and contributed to the depletion of biodiversity, and further to major changes in ecosystems and ecosystem services.

2 Purpose

The purpose of the project has been to contribute to the Nordic Scoping Study by examining how to connect between Indigenous and local knowledge (ILK) and other knowledge systems in a Nordic context. In this context, the project aimed at developing, in a collaborative process together with indigenous peoples and local communities (IPLCs), a Nordic methodology on how ILK can be included in a potential full Nordic IPBES assessment. Important requirements for this project have been to ensure equity and reciprocity in sharing of knowledge across knowledge systems. The aim has been to work with full and effective participation of indigenous peoples and local communities, and ensuring legitimacy, credibility and usefulness for all involved. Participation in the dialogue workshop as well as in the questionnaire are based on invitations and self-identification of holders of indigenous and local knowledge.

A fundamental principle of the ILK Nordic scoping study, as well as for IPBES at large, is respect for indigenous and local knowledge. The scoping study has only incorporated knowledge with the free, prior and informed consent of the holders of that knowledge.

3 Methods

The methods applied in the scoping of ILK for a Nordic assessment are in line with the IPBES ambition to create synergies across knowledge systems, and build on experiences from the Nordic countries regarding developing and practicing methods for respectful sharing of knowledge across knowledge systems and cultures. The focus has mainly been to compile views and perspectives from ILK representatives concerning a full and effective participation in a future Nordic assessment.

3.1 Components of the Nordic ILK Scoping Study

Components in order to achieve the purposes of the Nordic ILK Scoping Study included:

- a Nordic dialogue workshop with IPLCs (in-depth, see Annex 1)
- a questionnaire to holders of Indigenous and local knowledge (in-depth, see Annex 2);
- a sub-project piloting local dialogues, by the organization Snowchange Co-operative in Finland (in-depth, see Annex 3)
- a study of citizen science and community based monitoring related to biodiversity and ecosystem services in the Nordic region (in-depth, see Annex 4)
- the development of a roster of experts in the Nordic countries related to ILK and IPBES assessments
- a literature review, and other forms of identification of data.

The project has continuously submitted results and contributed to and validated the progress of the Scoping study of the Nordic IPBES assessment in order to feed into the regional IPBES assessment, and it has followed the progress within the task force on ILK under the IPBES.

3.2 Nordic dialogue workshop

A *"Nordic Dialogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment"* was held at Odalgården, Uppsala, Sweden 1–2 June 2015, with 30 participants from indigenous peoples – the Saami and Inuit – and from various local communities, and representatives/organisations of local knowledge systems from the Nordic countries; Denmark, Finland, Iceland, Norway, and Sweden as well as the autonomous areas Faroe Islands, Greenland, and Åland. The workshop was an informal dialogue where different perspectives were highlighted and discussed with the purpose to elaborate how to achieve a fair and participatory process with mutual respect and equity between the IPBES assessment team and relevant ILK-representation.

The dialogues were alternately in large or small groups in order to facilitate for all involved to get the opportunity to share perspectives. Photo: Håkan Tunón.

More specifically, the dialogue workshop explored:

- how to include indigenous and local knowledge together with scientific knowledge, based on respect and equity, in a future Nordic IPBES assessment of the status and trends of biodiversity and ecosystem services.
- how a fair and participatory process, that is credible, transparent and useful for all, should be designed,
- how – and if – indigenous and local knowledge holders and their communities could benefit from participation in a future Nordic assessment

The dialogue was held under Chatham house rule[13]. The conclusions from the workshop were sent out for review to the participants after the workshop and later in a second review round together with the draft report. However, the conclusions are as perceived and compiled by the project team after the workshop, and should not be seen as a common statement agreed by all the participants of the workshop. Due to the frames of the project the language during the workshop and in the workshop report was English, however, comments and reflections on the report from ILK-representatives were accepted in English, Danish, Norwegian and Swedish (but unfortunately not in the other languages within the Nordic countries, due to lack of funds and time) for inclusion in the final report.

13 "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed". - See more at: http://www.chathamhouse.org/about/chatham-house-rule

3.3 ILK-Questionnaire

A questionnaire was developed to gather the views of different people representing ILK in the Nordic countries concerning an inclusion of indigenous and local knowledge within a possible future Nordic IPBES assessment. The questionnaire (see annex 2) was sent to 239 different individuals or organizations of relevance to ILK all over the Nordic countries and then forwarded in different networks, so the exact number of recipients is therefore not possible to calculate. It presented a brief background concerning the nature and aim of IPBES and invited reflections regarding a possible sub-regional Nordic IPBES assessment. It was also a call for potential contributors to the suggested assessment. The questionnaire was in English; however, it was possible to respond also in Danish, Norwegian or Swedish (but unfortunately not in the other languages in the Nordic area, due to lack of funds and time), and answers were delivered in all of these languages. The questionnaire consisted of seven questions, intended to catch the perspectives of ILK-representatives regarding how best to include ILK in a future Nordic IPBES assessment in a way that would be legitimate, credible and useful for all involved.

1. Can you give examples of how biodiversity contributes to the livelihoods, food security, and quality of life of indigenous peoples and local communities in the Nordic countries?
2. Can you give examples of how indigenous peoples and local communities in the Nordic countries conserve, manage and create biological diversity?
3. Can you give examples of changes in the natural environment, which are being observed by indigenous peoples and local communities and what is driving those changes?
4. Can you give examples of impacts that existing policies and interventions have on biodiversity and ecosystem services, and as a result on the wellbeing of Indigenous peoples and local communities?
5. Can you give examples of benefits connected to the inclusion of ILK in different contexts, for example in the IPBES Nordic assessment, but also elsewhere, such as in environmental impact assessments?
6. Can you give some key elements and good examples for the full and effective participation of indigenous peoples and Local Communities in processes regarding biodiversity and ecosystem functions and services? Think about some processes where you have been involved.
7. Suggest groups in the Nordic countries possessing Indigenous and local knowledge, which are relevant to be consulted in an IPBES Nordic assessment (according to you)? Include suggested contact points, if possible.

The questionnaire was sent by e-mail to people or organizations that we ourselves know work with ILK-related issues or to those that were recommended prior and during the ILK dialogue workshop. The people/organizations that were invited represented different nationalities, traditional occupations, and interests in some way. Apart from direct answers to the specific questions, many of the respondents also gave reflections on an overall level, about the questionnaire as such, as well as regarding the concept of a future Nordic IPBES assessment. This was either directly expressed as extra remarks or visible in the answers.

3.4 Sub-project piloting local dialogues

An agreement concerning a sub-project piloting local ILK dialogues was established with the Snowchange Cooperative. Five local dialogue meetings were held during the period May to July in order to reflect upon the local/national ILK situation in Finland and on a potential ILK inclusion in a future Nordic IPBES assessment. Both Finnish and Saami communities were invited to the individual workshops, separately, in order to get different perspectives. Furthermore, a review of the consultation process and development in a process regarding a permit of prospecting for a diamond mine in a nature reserve in Saami territories was included. (see annex 3)

3.5 Citizens Science, ILK, and Community Based Monitoring

A review of citizen science and community based monitoring related to biodiversity and ecosystem services in the Nordic region was carried out as part of the Nordic ILK Scoping study. The study was based on available literature of experiences in the Nordic countries as well as internationally, and a limited number of interviews (see annex 4).

3.6 Development of a roster of experts in the Nordic countries related to ILK and IPBES assessements

The assignment also included suggesting people and organizations to a Nordic roster of ILK experts from

different cultures, perspectives, customary practices, etc. to contribute to the Nordic IPBES assessment. The suggestions to the roster, that is open ended, has been compiled based on input from prior, during and after the dialogue workshop and the questionnaire, from the Nordic country nodes, as well as by self-identification and separately reported to the Scoping Study for a Nordic IPBES assessment. Results are also included in the annexes 1 and 2.

3.7 A literature review, and other forms of identification of data

The literature review comprises suggestions regarding literature from the Nordic countries dealing with indigenous and local knowledge and practices in customary use of biodiversity and ecosystem services, as well as literature with insights regarding methods and experiences for how to create synergies across knowledge systems, based on equity and reciprocity. Literature suggestions have also been separately submitted to the Scoping Study.

3.8 Report review process

The draft report, including annexes, was sent out for review to the participants in the workshop, to the respondents of the questionnaire and to around 200 representatives of indigenous peoples and local communities, as well as to a few Nordic researchers active within the field of ILK and one regional administrative board officer with a special interest in ILK-issues in practice. About a dozen gave more detailed reflections on the draft report.

4 Discussion

4.1 Historical background and biocultural diversity in the Nordic countries

The Nordic region today consists of Denmark, Finland, Iceland, Norway and Sweden as well as the autonomous areas Kalaallit Nunaat (Greenland), Føroyar (Faroe Islands) and Åland (historically also other parts, like the Baltic states, especially Estonia and Latvia, used to be part of the territories belonging to Nordic countries). What we call the Nordic states today is a geographically and politically defined area, which also has a shared history when it comes to the use and management of biological resources. The suggested area for the Nordic IPBES assessment contains a diversity of habitats with different geological, climatological and biodiversity characteristics, together contributing to of a diversity of cultures and customary practises. In the sub-region, the national languages of Danish, Finnish, Icelandic, Norwegian, and Swedish are spoken, areas well as indigenous and local languages. The Indigenous peoples in the Nordic region are the Saami people and the Inuit, and there are at least three to five major Saami languages, and three Inuit ones. In addition to these there are local languages like Faroese on the Faroe Islands and dialects like Gutnish and Dalecarlian (Elfdalian).[14]

The different conditions in the local areas of the sub-region have given rise to a diversity of local cultures with individual differences but also similarities. An artisanal fisher the archipelago in Finland's west coast will have large cultural similarities with one from the south-eastern archipelago of Sweden, although there might be a distance of a 1000 km between them. In addition to the Indigenous peoples in the region, the Saami people and the Inuit, there are many groups with local and traditional knowledge, who regularly practise customary use of local biological resources. Their continued interaction with their environment has over time shaped and reshaped landscapes, enriching biodiversity as well as cultures. Local communities, both indigenous and local, with a continuity of observations of the state of the environment and its biodiversity, often directly or

14 According to the UNESCO's Atlas of the World's Languages in danger, that also lists in total 10 different Saami languages (http://www.unesco.org/languages-atlas/index.php)

Small-scale fishing boats at the Baltic Sea. Local fish stock and local traditions resulting in local products. Photo: Håkan Tunón.

indirectly linked to locally important resources, are able to contribute knowledge on the status and trends of biodiversity, through their own traditional monitoring, as well as from community based monitoring initiatives initiated from outside. Many of these knowledge holders represent a tradition of long-term sustainable use of biological resources, thus contributing to local governance of biodiversity and landscapes as well as potential long-term food security for the entire society. It is important to understand local use of biological resources as an ecological factor, and the importance of a continuation of customary sustainable use, for biodiversity, for the local communities and for society at large.

4.2 Indigenous and local knowledge holders

Groups that were pointed out as relevant for possessing ILK of value for a Nordic IPBES assessment, in addition to the Indigenous peoples, included other local communities with small-scale customary uses of specific biological resources, often with artisanal techniques, e.g. farmers in marginal areas, pastoralists, fishermen, hunters, allotment growers, and associations for local breeds or local varieties, local history societies, associations with interests in cultural landscapes, the Transition movement, and people involved in traditional agricultural techniques like hay-cutting, grazing, and pollarding for conservation biology. Museums, outdoors museums and especially museum farms are also important actors and play an important role in public awareness and in linking present day traditional knowledge to the historic past. From a citizen science point of view, groups like bird watchers, amateur botanists and entomologists, environmental NGOs and similar are highly relevant. Similarly, different community based monitoring initiatives related to observations and change in biodiversity and ecosystem services can provide valuable knowledge to a Nordic IPBES assessment. Finally, there are also particular individuals that based on their own capacity could make essential contributions in different stages of the assessment. There are many different groups and individuals that need to be included in an IPBES assessment in order to ensure a comprehensive understanding of the status and trends related to biodiversity and ecosystem services, of the major drivers of change and options for sustainable management and governance.

4.3 Conditions for ILK participation

The overarching objective of IPBES is "to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development"[15]. This will be ensured by IPBES four functions, which are to perform assessments; to promote generation of knowledge; to develop policy support tools and methodologies; and to build capacity. Each of these four basic functions will have much to gain from interactions on equal terms across a diversity of knowledge systems. It is thus important to include all these functions when we talk about participation.

The intention is to produce "*scientifically credible and independent information*" and "*interpret this scientific information*" in order to help politicians and others to make "*informed decisions*". At the same time, one of IPBES operating principles is to "*Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems*"[16].

It is obviously a challenge to combine these different aims, and this ambiguity in itself is one of the reasons why holders of knowledge may question the relevance of their participation in an assessment process as well as its usefulness for themselves. There is also a fear that the IPBES process as such becomes the main aim, and not "the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development". Even when it is properly explained, IPBES can be perceived as belonging to an abstract international context, quite separated from the realities of local users of land. There is on the other hand also an obvious risk that the stated commitment of IPBES to recognize and respect ILK gives rise to expectations that are not met, due to the same ambiguity.

Before being able to participate in a process, several conditions need to be met; otherwise there will be only partial participation or none at all. In order to achieve full and effective participation from ILK-practitioners, elements to be considered include: season of the year, duration, place, language, economy, competing activities, meaning, motivation, and expectations.

Season of the year – depending on what biological resources the community/individual in question is managing, different kinds of seasonal activities may restrict participation in external activities that require travelling, like workshops. When planning the participation of representatives of ILK-systems, seasonal activities must thus be taken into consideration. For example, the late spring and early summer months are connected with

15 Decision IPBES-2/5: Work programme for the period 2014–2018.

16 (UNEP/IPBES.MI2/9Appendix 1, para 2d).

The seasons of the livestocks, catches or games, etc. determine when the time is right for involvement in external activities for the indigenous peoples and local communities. Photo: Håkan Tunón.

lambing, calving, etc. Later in the summer and early autumn harvesting of crops and fodder will be some of the main occupations, followed by hunting, fishing and slaughter. Certain kinds of fishing might have its peaks during winter and spring. However, in general the preferred period for participation in workshops would probably be in the late autumn or winter, unless the participation could take place in the vicinity of the community.

Duration – A short project process will be easier to make time for, but on the other hand a longer process with continuous interactions will make it easier for the local communities to bring the issues home and actually discuss and reach a common conclusion with community members and colleagues of higher value for the assessment. The longer the process the better is the opportunity for a rich input. Consequently, the participation in the present study would have been more inclusive if the study had been carried out over a longer period and less dependent on a certain time frame.

Place – Involvement of local people living close to the land means that in order to facilitate participation, meetings should be held reasonably close to their home areas.

Language – Indigenous and local knowledge is very often carried and transmitted in the language used by the local community. If a full and effective participation of representatives of ILK is to be achieved, it is preferable to enable participation in the local language whenever possible. The academic and political complexity of the IPBES processes might also gain in comprehensibility if explanation in local languages with a less theoretical and formal language is used.

Economy – Full and effective participation needs to be on equal terms. Most officials from agencies or academia participate in these kinds of processes in their professional capacity, while ILK-representatives typically need reimbursement for travel costs, for their own time and in many cases for costs to hire staff to look after animals and maintain necessary farm routines and other activities in their absence.

Competing activities – While economic compensation for participation might or might not be a prerequisite for participating, there may be other on-going external processes, consultation for wind farms, mineral prospection, changes in agricultural subsidiary systems, etc. that might distract and compete for available time and resources, which might decrease or nullify the possibility for a full and effective participation.

Meaning – Both IPBES and a Nordic assessment of biodiversity and ecosystem services are difficult to grasp for people outside "the IPBES circles". The language and context presented about IPBES and a future Nordic assessment were viewed as very academic, convoluted and exceedingly complex by our workshop participants and respondents on the questionnaire. The context, objectives and expected results have to be made clear and understandable.

Expectations and motivations – The interest in participation is based on the personal expectations of the ILK representatives, and these build on previous experiences of similar processes. There is a need to clearly explain the possible long-term outcomes of IPBES – including in what way it might support the needs of holders of ILK, as well as society at large. At the same time, it is important to be clear about present uncertainties about the uses and usefulness of the results. It is vital to aim for an ILK process that is meaningful in

How can the local communities get direct benefits from participating in an IPBES process? Lingonberries (*Vaccinium vitis-idaea*). Photo: Håkan Tunón.

the present situation for the participating ILK holders. One important positive outcome of the workshop in the present study, which was mentioned by several participants, was the opportunity to share and exchange experience with others, and to find opportunities for potential networking for the future.

Given the questions raised by participating communities around the meaning of IPBES, and what they could expect from participation, we think these matters need specific attention. It is still open how the IPBES assessments will be used, and to what extent decisions in society may be influenced by the results and conclusions from the IPBES assessments. Many holders of knowledge taking part in this scoping study had experiences of participation in processes that had not given the expected results. There is a certain amount of reluctance to engage in externally initiated processes, and also a difficulty to choose which external processes to prioritize. For those engaged in customary use in practice there are solid time constraints.

What would motivate ILK holders to prioritize participation in the IPBES process? As earlier mentioned, it is first of all important to ensure that the IPBES interaction is meaningful in its own right, and participation must be based on voluntary engagement. It is important to explain clearly what IPBES is about, without raising more expectations than one can reasonably hope to meet. Transparency and a sense of realism are important factors in order to motivate participation.

An invitation to contribute can also be seen as recognition of the importance of the ILK and sometimes be rewarding per se. During the scoping process, many holders of indigenous and local knowledge in the Nordic countries have confirmed their interest to share and exchange their knowledge with others. It is vital in IPBES to create procedures where participation actually leads to meaningful interaction during the entire process, from design of the studies to the analysis of the results, and including recommendations for sustainable management of ecosystems.

4.4 Contributions of indigenous and local knowledge

What are the kinds of knowledge that the indigenous peoples and local communities will be invited to contribute, based on free prior informed consent, to the IPBES Nordic assessment?

The classical definition of traditional ecological knowledge by Fikret Berkes[17] is a workable definition of ILK also in a Nordic context:

a cumulative body of knowledge, practice and beliefs, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.

In the dialogue workshop, some of the basic qualities raised were:

This knowledge is found "*among the local people, who are living in the land and using the biodiversity*" and *based on direct observations and experiences".* It is "*knowledge learnt from parents and grandparents, not taught in schools, and you always have it with you... It is practical knowledge that you in turn hand on to the next generation."* and it is "*knowledge of the heart, hand and mind".* It is often "*silent"* knowledge based on shared experiences. The indigenous (Saami and Inuit) and local knowledge holders from all Nordic countries agreed in the workshop dialogue, as was also shown in the answers to the questionnaire, that they have much in common regarding knowledge and values in relation to their respective landscapes and biodiversity. They also share similar challenges related to recognition of their knowledge and rights.

Like indigenous communities, local communities are likely to contribute with experiences from their own sustenance and their long term observations on how external decisions influence them and the local biodiversity (wild and domesticated) and ecosystems. Local communities are monitoring the local situation regularly, if not daily. ILK represents human interaction with local environments over long time periods. Out conclusion from the scoping study is that ILK can provide locally adapted knowledge which is rich, nuanced and highly relevant. Given that biodiversity management and governance are always ultimately based on local actions, the ILK aspects are necessary parts of a Nordic IPBES assessment.

Different community-based monitoring programmes are getting increasingly common, as well as different citizen science projects.

Concerns have been raised from ILK holders during the project that if statements from scientific studies and ILK representatives are aiming in opposite directions there will be a bias in favour of the academic side concerning who is perceived as most trustworthy. An example related to this study[18], comes from Greenland

17 Berkes, F. 1993. Traditional ecological knowledge in perspective. In *Traditional Ecological Knowledge: Concepts and Cases*, J. T. Inglis (ed.). Ottawa: International Program on Traditional Ecological Knowledge and International Development Research Centre. Pp 1–9.

18 *Polar Geography* 37: 69–91; 2014.

The members of the workshop is by some means a roster of experts concerning various parts of the diversity of ILK in the Nordic countries and there are many more people that can be included, but it all depends on how the participation during the assessment will take place and the future continuation of the work. Photo: Håkan Tunón.

and the PISUNA project, where a comparison between estimations made by members of local communities and researchers regarding changes in population and patterns of 24 different items (fish, birds, mammals and other observations). Of these, the two groups agreed on 12, disagreed on 2 and for the remaining 10 the researchers did not have enough data to draw any conclusions. The two disagreements are in this context the most interesting, where a deeper process would be relevant and probably lead to better understanding of the actual population. To reflect upon different perspectives, conclusions and explanations will most often provide better solutions; the multiple evidence base approach is one way to include different perspectives.

IPBES has established rules and procedures for writing, reviewing and approval of assessments adopted at IPBES 3.[19]. It is important for a Nordic IPBES to deal carefully with the contributions from ILK dialogues. The ILK Task Force are developing rules and procedures for the inclusions of ILK in IPBES and the first set is expected to be adopted at IPBES 4 in February 2016. But most important for a Nordic IPBES assessment is to ensure processes where tentative disagreements between knowledge systems can lead to further joint problem formulation and analysis.

4.5. Roster of experts

One part of the assignment was to identify ILK relevant persons and organisations to be included in a future Nordic IPBES assessment. During the project many different persons and organizations have been contacted (mainly by e-mail), but far from all have responded. Those who have responded have either given suggestions on additional people that could be interesting for the process or availed themselves as contacts. The relevant people can be divided into three groups; 1) ILK-practitioners, i.e. local people still involved in customary use of biodiversity, 2) resource persons, i.e. knowledgeable people assisting ILK-communities, and 3) academic researchers working with a particular community, ethnic group or customary use. There is not necessarily any definite boundary between group 2 and 3; they could be seen as complementary. There might be equal understanding regarding the life, interests and concerns among indigenous peoples or local communities from both these groups. The requirements for participation are different for the various groups as well as within the groups, and of major importance is a fair and participatory process with indigenous and local practioners and knowledge holders fully integrated in a future Nordic IPBES assessment.

4.6 Literature and other sources

There is an immense amount of literature describing different aspects of local communities and their natural resource use. The available literature consists of ethnological or historical descriptions, biological evaluations of the connection between customary use and biodiver-

19 See report from IPBES 3. IPBES/3/18

Fishing and hunting of marine animals are important for the local communities on Greenland. Photo: Michael Køie Poulsen.

sity, social scientific information about the situation in the local community, and so forth. Some of the material is directly relevant to a Nordic IPBES assessment while other may be more peripheral. It is suggested to first identify what thematic subject should be analysed in the IPBES, and then start the compilation of relevant literature. The project has complied a selected overview of literature that might be of interest (see 5. *Literature and other sources*).

4.7 Limitations of the ILK-study within the Scoping Study

This project study was performed over a relatively short period and during the summer season, which limited the possibilities for ILK-representatives, who practice their knowledge in their day-to-day management of biodiversity and ecosystems, to fully and effectively take part. Despite these constraints, the ILK workshop as well as the questionnaire gathered input from a diverse group of highly qualified holders of indigenous and local knowledge from all the Nordic countries including the autonomous areas Kalaallit Nunaat (Greenland), Føroyar (Faroe Islands) and Åland. We have also had the opportunity to send out the draft reports to a large number of relevant representatives for review and comments, but the consultation period could and should have been longer in order to really give everyone time to reflect and respond. It has repeatedly been mentioned in the responses that the issue of limiting the communication to English has been a barrier for participation. An academic text in English, such as this report, is not adequate for most people to communicate the context and the discussion around their customary use in a relevant way.

An important factor in the IPBES context is to give people an opportunity to develop their understanding of what IPBES is and what the benefits and restrains may be. In what way can indigenous and local communities and local biodiversity benefit from a Nordic IPBES assessment process? The answer to this question will in part be determined by the ability of the assessing body to listen to and include the perspectives of the Indigenous peoples and local communities in the process. This in turn will also determine the potential capacity of the same people as the ambassadors for the outreach of the IPBES results in local as well as national fora. The present study has very limited possibilities to predict how much a Nordic IPBES assessment will ultimately used for policy- and decision making.

Another issue is that this project regarding the recognition of ILK as an important source of knowledge into a future Nordic IPBES assessment has been parallel and corresponding with the Nordic Scoping Study, but still mainly as a separate project. The balance is difficult; the ILK part should be connected while at the same time one needs to handle these issues independently in order to provide space for the fears and scepticism. The logical next step should have been an integrated consultative process in the Scoping Study, but due to the time restrains we have only the possibilities to interpret the achieved results and feed the conclusions into the Scoping Study. The end result is a parallel, but consultative, project and not truly an integrated process.

5 Literature and other sources

There is truly an immensely vast literature regarding the natural resource use among local communities in different parts of the Nordic countries. Ethnologists, anthropologist, sociologists, historians and a large number of representatives from disciplines within natural science to mention a few, have dwelled in the history, culture and everyday life of local people for centuries. Another relevant area consists of research reports into how policies and other drivers influence the continuation of customary use of biological diversity. In spite of the richness of available literature there are also places, local communities and specific aspects that have barely been studied at all, and local conditions are continuously changing. To try to compile an exhaustive list is hardly possible or even desirable. It is more sensible to compile such a list over directly relevant literature for particular and current themes in a later stage. The relevant literature consists of books of various kinds, reports, scientific articles and essays in all forms; scientific, popular scientific and popular publications as well as pure fiction might contribute with relevant information.

It is important to note that these kinds of sources can for this purpose mainly be used as a reference point when including indigenous peoples and local communities, who can contribute with the contemporary knowledge of current situations.

Here follows an initial compilation of literature, that constitutes some examples to inspire for future thoughts (methodological papers on knowledge integration are not included):

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Mustonen, T. 2012. Rebirth of Indigenous Arctic Nations and polar resource management: critical perspectives from Siberia and Saami areas of Finland, *Biodiversity*, DOI:10.1080/14888386.2012.725652

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Mustonen, T., 2013. Power Discourses of Fish Death: Case of Linnunsuo Peat Production, *Ambio* DOI 10.1007/s13280-013-0425-3´

Norderhaug, A. 2011. Goat farming for landscape and wool. pp. 123–126 In: Reihmanis, J. (ed.) *Nordic – Baltic – Belarus solutions in farming for biodiversity*. Latvias Dabas fonds, Riga.

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Svalheim, E. & Norderhaug, A. 2011. A successful concept for farming for biodiversity. pp. 127-131 In: Reihmanis, J. (ed.) *Nordic – Baltic – Belarus solutions in farming for biodiversity*. Latvias Dabas fonds, Riga.

Tunón, H., Kvarnström, M., Axelsson Linkowski, W., Wissman, J., Bele, B. & Norderhaug, A. 2013. "Views of landscape: reflections on the governance of Scandinavian transhumance", *Baltic Worlds* VI(3/4):53–60.

As previously mentioned these titles are meant to exemplify the diversity of the available literature that in different ways can contribute to a Nordic IPBES assessment. This compilation has a strong focus on Sweden since it is the geographical area the authors know best, but every country, every region, has its comparable literature. However, the literature sources mainly provide a historical view and perhaps even just a historical snapshot – glimpses of what were true at a certain place at the moment for the documentation, which might be relevant in explaining the origin of the local biodiversity or the historical conditions regarding local uses of biological resources.

Biodiversity and ecosystem services may be local assets in many different ways. Photo: Håkan Tunón.

6 Proposals for a Nordic IPBES assessment that include ILK

The project concerning how to include indigenous and local knowledge in a Nordic IPBES assessment have, based on a consultation process with ILK-representatives all over the Nordic countries, come to the following conclusions:

6.1 Proposals for a Nordic IPBES assessment that includes ILK

- **Ensure that the full diversity of indigenous (Saami and Inuit) and local knowledge in the Nordic countries is welcomed** to contribute to a Nordic IPBES assessment, based on equity and reciprocity (mutual benefit) across knowledge systems. Self-identification among those who want to contribute, whether indigenous or local holders of knowledge, would be the most workable approach. It is important to actively consider the gender aspect of knowledge and customary use in order to fully analyse the socio-economical impact of changes. Men and women have different roles and responsibilities and are often involved in different parts of customary use of biodiversity,
- A minimum of 4–8 thematic and regional dialogue workshops with ILK experts should be held in the different Nordic countries in the language of the knowledge holders in order to make the ILK perspective available for the assessment process. The aim of the workshops would be to get ILK inputs into the full process of the Nordic IPBES assessment of biodiversity and ecosystem services, from the planning phase and throughout in the documentation, analysisand conclusions and recommendations of the assessment. **There is a need for local dialogue workshops in the beginning of the assessment work in order to obtain "unpublished" input to the assessment as well as workshops in the later stages to validate the conclusions from an ILK-perspective.**
- Evaluation of the socio-ecological effects on local communities of processes affecting biodiversity and ecosystem services **cannot be done without the participation of ILK representatives.**
- There is **a need for ILK knowledge holders to have equal opportunities, compared with researchers, to prepare for and to participate** in a future Nordic assessment. Participation of ILKs in the IPBES assessment should also be seen as an activity to raise the awareness of IPBES as such, and for its further use as a source for informed policy decisions.
- **The role of ILK in the Nordic IPBES assessments needs to be clearly stated**, as well as the expected outcome of the participatory processes. It is important to ensure that holders of knowledge are getting meaningful outcomes of the process, in relation to their livelihood realities.
- An effective ILK in the Nordic IPBES assessments should be shared with and **taken account of also in other societal processes**.
- Participation needs to be based on **free prior informed consent. Proper risk assessment for sharing knowledge should be done** on a case-by-case basis when working with ILK holders. Demands for respect, legitimacy, credibility, transparency, trust, equity and not least usefulness in relation to the knowledge holders' lives need to be met. Relevant ethical consideration should be applied.
- The process of **inclusion of ILK should start with invitations through nominations with open criteria**, ensuring that organizations as well as individuals can nominate themselves. There will be a need to have **a balance related to the diversity in indigenous peoples and local communities in the Nordic regions, as well as geographical, cultural and gender balances to strive towards**. There may also be a need to limit the number of participants in each workshop, in order to keep the efficiency in the meeting, and budget limitations. The main focus will then be to keep the balance between the relevant groups for each workshop, in order to maximize

the outcomes of the dialogues. **Conditions for participation should be explained beforehand**, such as provision of compensation for loss of income and for extra costs incurred. Expected beneficial outcomes of the process, such as benefits from exchange and learning with other holders of knowledge, should also be clear.

- **A broad roster of ILK experts, representing a variety of customary uses of different ecosystems, should be compiled**, with open criteria for the indigenous, geographical, cultural and gender balances. This could be used for specific issues or themes in the Nordic IPBES assessment process. This roster could be used also for other kinds of exchange, based on free, prior and informed consent.
- The Nordic IPBES assessment **should include exchange across knowledge systems by using non-conventional methods**, e.g. by inviting to walking workshops in habitats of interest for ILK experts, other experts and policy makers. A common meeting ground in the field would **create inter-cultural spaces for learning** and stimulate implementation of findings.
- The ILK process in a Nordic IPBES assessment should **actively contribute to protection and promotion of the indigenous and local knowledge as well as customary use**, including its implementation and transmission to new generations.
- The process needs to include an emphasis of **how to make different values visible, not only monetary values**, and how to give them weight in policy decision-making processes that builds on IPBES outcomes.
- **Community Based Monitoring initiatives have a high potential to contribute** not only **data**, but also **analysis and conclusions**. On-going such initiatives in the Nordic countries should actively be invited to engage in a Nordic IPBES assessment.
- Within the Nordic countries, there are also **databases built from citizens' observations in collaboration with scientists**, that could 1) contribute data on biodiversity and ecosystem services of high relevance for a Nordic IPBES assessment 2) contribute a space for engaging with a group in swith ociety expertise and commitment about biodiversity and ecosystem services, for its outreach activities. A Nordic IPBES should **take advantages of these, both for its data gathering, and for capacity building and communication and outreach activities**.
- **Social media are likely to be valuable tools** in the process of making ILK available for the IPBES assessments, but also in wider contexts and for other decision-making processes.
- On assignment from the Swedish government and in cooperation with the Norwegian Nature Inspectorate Naptek made a survey in 2012 over the **possibilities for an internet-based Swedish-Scandinavian traditional knowledge portal**[20], which could be reflected upon in this context. Such a portal might if developed contribute to making ILK available for future IPBES assessments as well as other decision-making process.
- **Promote a non-biased process of knowledge integration**, like the Multiple Evidence Base approach[21], in a future Nordic IPBES assessment and work towards mutual benefit and equity between different kinds of knowledge.

6.2. The way forward

A first outline of a work process towards a first Nordic IPBES assessment was described in the overall Scoping Study[22] for an assessment and was developed **in order to feed into a regional IPBES assessment for the region Europe and Central Asia. The timetable was adapted to reach this goal.** The aim of this section is to clarify the ILK part of a Nordic IPBES assessment. The quotes in this section are from the report of the Scoping Study.

2015 "A Scoping for a Nordic assessment takes place, financed by the Nordic Council of Ministers. An ILK study "Indigenous and Local Knowledge in Scoping Study for the Nordic IPBES Assessment" integrated with the full Scoping study is performed by Naptek, CBM, financed by SEPA[23]"

20 Dahlström, Anna & Tunón, Håkan 2012. *Webbaserad kunskapsportal för traditionell kunskap relaterad till biologisk mångfald – en förstudie*. CBM:s skriftserie 72, Uppsala: http://www.slu.se/Global/externwebben/centrumbildning-ar-projekt/centrum-for-biologisk-mangfald/Dokument/publikationer-cbm/cbm-skriftserie/CBMskrift72WebbaseradKunskapsportal.pdf

21 A Multiple Evidence Base approach emphasizes the complementarity of knowledge systems, without assigning any one knowledge system as the dominant one. See Tengö et al. 2014, *Ambio* 43, 579-591, http://link.springer.com/article/10.1007%2Fs13280-014-0501-3

22 The Scoping Study for a Nordic IPBES assessment

23 SEPA = Swedish Environmental Protection Agency

This present report is the result of the Indigenous and Local Knowledge in Scoping Study for the Nordic IPBES Assessment.

> "The Scoping Study, including the ILK component, is used as proposal for Nordic Council of Ministers and other entities. The Scoping Study and the proposals must include a plan for both in-kind technical support and the secretariat to establish the necessary institutional arrangements to put in place technical support for a Nordic Assessment. A steering committee has to be established."

An application was submitted for co-funding of a minor part of the planned ILK activities during 2016 from the Nordic Council of Ministers in order to be able to feed into a future Nordic IPBES assessment. In order to organize and facilitate the process, there will be a need for a coordinating function, for instance Naptek, CBM. **Without specific funding no substantial ILK contribution to the assessment will be possible.** Most ILK actors are as mentioned earlier private entrepreneurs and are consequently in need of reimbursement of costs in connection to participation. **To ensure a full and effective participation of ILK representatives, the process should as far as possible be held in the local languages.** This includes interpretation between different languages in several of the workshops, which has implications for the budget of the assessment.

2016 "ILK: It is essential to keep a continuous dialogue with ILK-holders on their own terms. The assignment to Naptek at CBM regarding an inclusive process for Indigenous and Local Knowledge in the Scoping Study for the Nordic IPBES Assessment included development of methods for doing this in practice, in dialogue with ILK-representatives and the ILK Taskforce under IPBES, and the Nordic project group for the scoping study, to be ready for the final version of the assignment for the Full Nordic Assessment. Preliminarily, the following procedure could be included during 2016: one initial Nordic practical workshop and 4-8 dialogue workshops covering diverse knowledge systems connecting holders of knowledge in a suitable manner related to geographic relevant areas and language, and one summing-up Nordic workshop. complemented with one or more ILK-questionnaires in the national languages, with the purpose to prepare ILK-background information for the chapters (i.e. in order to make non-published ILK-reflections available for the Nordic assessment)."

It is necessary, due to the biocultural diversity of the Nordic countries, to **arrange several local workshops in different parts of the Nordic area in order to get a sufficient coverage of different circumstances**. While the present ILK project within the Scoping Study has shown that many of the drivers acting against the continuation of customary use, and leading to a diminishing biodiversity, are similar irrespective of which biological resource the local community is dependent on, there are at the same time differences in biodiversity, ecosystems, local cultures as well as drivers that need to be highlighted. Consequently, there is a need to arrange dialogue workshops in different parts of the Nordic countries. The purpose is to contribute to the compilation of current, up-to-date indigenous and local knowledge to be included in the assessment. **We have in the Scoping Study suggested a minimum of 4–8 workshops, but the more that can be arranged the better**. Efforts should be made to pool resources and opportunities for joined efforts together with other initiatives. These dialogue workshops ought to be developed and organized in cooperation with indigenous and local communities and performed in the local languages. In some cases there will be need for interpreters when there is more than one local language. It will also be necessary in some of the workshops to translate to English or another language for dialogue between ILK groups and with the coordinating function.

> "Request (through invitations letters and Nordic countries nodes webpages) for nominations for co-chairs, Nordic hubs as lead for the different sub assessments, and their coordinating lead authors, authors (including ILK holders) and review editors (including ILK holders) for the Nordic assessments. (The list developed in the appendixes of potential strategic partners, roster of experts and Nordic Hubs developed in the Scoping is a help here.). Methods developed under the ILK Scoping Study for the Nordic IPBES for how to work with ILK in the Nordic Assessment will be applied throughout the process."

During the present project we have received many names of both ILK holders and other representatives acting on behalf of specific local communities or customary uses and practices. Consequently, this list can be presented to the Nordic IPBES assessment steering committee and expert committee for suitable action.

> "The steering committee and expert committee selects co-chairs, hubs for sub-assessments, and with the hubs coordinating lead authors, authors (including ILK holders) and review editors (including ILK holders) for the Nordic assessments."

There is a need to have several different dialogue workshops with various ILK representatives, at Nordic, national as well as local levels, to be able to compile ILK

information for the IPBES assessment and develop the necessary networks of informants, reviewers etc. In order to organize these workshops and draw conclusions from the processes, there is a need for a coordinating function to facilitate the workshops, and compile ILK contributions for the Nordic IPBES assessment. **Since there is an inter-Nordic perspective on the situations for the local biodiversity and the local communities, there is a need for contacts across national and linguistic borders**.

An observation from the scoping study is the close connection between knowledge and language and consequently workshops and compilation of knowledge should be held as far as possible in local languages. There will thus be a need for interpreters between different languages. This will significantly influence the overall budget of the project. There is proportionality between the number of workshops performed and the quality of the information achieved. We have calculated with a minimum number of four to eight dialogue workshops based on the diversity of cultures and customary uses of biological resources as well as the number of countries/autonomous areas in the Nordic region. However, if the time frame gives possibility to perform additional workshops that would be beneficial.

The Nordic countries have **two different indigenous peoples, the Saami and Inuit, and there is need for at least one specific workshop for each of them** in the Nordic IPBES process. A Saami coordination workshop for joint dialogues on Saami modalities for participating in the Nordic IPBES process, and summarizing the Saami experiences and perspectives, would need to gather the three national Saami Parliaments, the Saami Council, and other relevant Saami actors. Such a workshop may require interpretation services between at least North, Lule, South and Skolt Saami, Finnish, Norwegian, and Swedish in order to create an effective participation depending on the participants and their needs. Each language will require two interpreters that work in shift. In the international Saami parliamentarian meetings there is sometimes interpretation between eight different languages. At least one similar coordination workshop would be needed for Greenland and the Inuit, and there will probably be need for interpretation services between three to four languages.

Other **prioritized themes for dialogue workshops** based on customary use are food production on semi-natural grasslands, summer pastoralism, local breeds, local varieties, coastal communities, small-scale artisanal fishing, hunting, farming in marginal areas and wild resources in entrepreneurship.

The process has the **potential of creating a vibrant ILK expert network**, to be developed further for engaging in the processes that follows on the Nordic and other IPBES assessments, or as the network participants see fit.

Furthermore, **all possibilities for additional local dialogue workshops or other outreaching activities will be of benefit for the Nordic IPBES assessment as well as contributing to the entire IPBES process**. Such workshops are valuable opportunities to provide knowledge, experiences and interactions for all the IPBES four functions, and to create awareness of the IPBES process and its goals at large.

The whole **process with the dialogue workshops needs to be organized, facilitated and documented by a coordinating function**, e.g. Naptek at CBM, in order to create continuity in the process.

An estimated minimum cost for the ILK-IPBES process for 2016 would range 320–350.000 €. However, in order to achieve full and effective participation of local communities, there will be a need to translate relevant documents prior to workshops into relevant local languages and also post-workshop reports. It is difficult at present to estimate the final costs for such efforts, but it will probably be additional 50.000 or 100.000 €.

7 Reflections from the reviews of the draft report

During the process of compiling the report from this project, two rounds of reviews were invited – the first was a review of the draft report from the ILK workshop held in June (sent out to the workshop participants), and the second was a review of the project report. The comments and suggestions on the workshop report were taken account of to the best of our abilities. These have been incorporated into annex 1.

A first version of the project report including the annexes was sent out to approximately two hundred individuals and organisations to provide opportunities for review. This review process resulted in around ten in-depth answers commenting on which issues that were well presented and what subjects needed to be additionally developed. The people directly involved in customary use of biological resources were underrepresented in the answers and the most frequently raised comment from those was that the language of the report (both the English language and the academic context) acted as a barrier to fully understand the content. In particular the part of text that explained the IPBES basic aims and functions repelled some of those intending to comment on the document, despite efforts to make it as simple and clear as possible.

Related to other in depth reflections, we have tried to take account of the rich and varied content of these submissions in the final report, however we would like to present some of their most important points here separately as well.

The submitted comments are summarized, grouped and presented in English below:

- Highlight the fact that humankind is and has always been an important ecological factor in shaping the landscape and its biodiversity. This impact can have and have had both positive and negative effect on the biodiversity. When it comes to the socio-economical aspects in particular, the indigenous and local communities are vital for the understanding of societal changes.
- An IPBES assessment is not only a biological survey, it is to a large part an estimation of the local socio-economic situation in the long run. The ILK representatives are vital for a successful assessment of their livelihoods based on local biological resources and the impacts as well as importance of these for sustainable use of biodiversity and ecosystems.
- The process of IPBES is unclear when it comes to how real participation of ILK representatives should be achieved. The participation of ILK representatives actively practising customary use seem to be limited to the data collection part of the assessment, and due to other obligations and language barriers they might be excluded from the other parts. There is a significant risk that the ILK representatives that will be included in the assessment writing and reviewing will be the academic representatives with a more limited contact with the local biological resources. The local connection might be lost.
- Highlight the urgent need to actively consider the gender aspect of knowledge and customary use, since different genders utilize different parts of biodiversity, in order to fully analyse the socio-economical impacts of changes.
- It is important the IPBES develops a valid process for handling knowledge conflicts, i.e. when different knowledge systems are giving different pictures or interpretations. In its assessments IPBES should present differing results and give reasonable explanations to give the decision makers the options to make informed decisions. The issue raised concerns potential bias of the lead authors. Since the assessments by necessity will be simplifications of the phenomenon they are describing, will there be space enough to actually give dual explanations in cases of conflicting evidence?

Summary from the Nordic Dialogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment. – 1–2 June 2015, Odalgården, Uppsala

Summary and conclusions from the workshop

This is a summary of the outcome of a "*Nordic Dialogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment*". It was held at Odalgården, Uppsala, Sweden 1–2 June 2015, with 30 participants from indigenous peoples – Saami people and Inuit – and from representatives/organisations of other local knowledge systems from the Nordic countries; Denmark, Finland, Iceland, Norway, and Sweden as well as the autonomous areas Faroe islands, Greenland, and Åland.

The workshop was an informal dialogue[1] where different perspectives were highlighted and discussed with the purpose to elaborate how to achieve a fair and participatory process with ILK-representation fully integrated in a future Nordic IPBES assessment, based on mutual respect and equity. The conclusions from the workshop are as compiled by the project team and should not be seen as a common statement agreed by all the participants of the workshop. The draft report with conclusions has been sent out to the participants for review and comments have been incorporated. The report will be sent out in a second review process.

ILK is about the heart, hand and mind

The diverse group of knowledge holders from all Nordic countries noted that they have much in common regarding perspectives on knowledge and values in relation to their respective landscapes and biodiversity. They also share similar challenges related to recognition of their knowledge and rights. A rich discussion was held regarding core values and principles of indigenous and local knowledge. The classical definition of traditional ecological knowledge by Fikret Berkes[2] was suggested as a workable definition of ILK in a Nordic context:

a cumulative body of knowledge, practice and beliefs, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.

This definition has also been referred to in the IPBES context as a point of departure for the process of developing approaches and procedures for ILK in IPBES.

In the dialogue, some of the basic qualities raised were:

This knowledge is found "*among the local people, who are living in the land and using the biodiversity*" and *based on direct observations and experiences*" It is "*knowledge learnt from parents and grandparents, not taught in schools, and you always have it with you... It is practical knowledge that you in turn hand on to the next generation.*" and it is "*knowledge of the heart, hand and mind*". It is often "*silent*" knowledge based on shared experiences.

Proposal for a Nordic IPBES assessment that includes ILK:

- Ensure that the full diversity of indigenous and local knowledge in the Nordic countries is welcomed to contribute to a Nordic IPBES assessment, based on equity and reciprocity across knowledge systems.
- Indigenous knowledge here refers to Saami and Inuit knowledge. Local knowledge holders may include *among others* summer pastoralists, artisanal fishermen, hunters, small scale farmers and foresters, etc.
- There is no need in a Nordic IPBES assessment of to make a strict distinction between indigenous and local knowledge. Self-identification among those who want to contribute, whether indigenous or local holders of knowledge, would be the most workable approach.
- However, the Saami and the Inuit may wish to participate in a Nordic assessment independently and as peoples on their own terms. A constraint for the Saami coordination and participation across country borders is a lack of resources and time for coordination. This needs to be taken into account when planning and funding a Nordic IPBES assessment.

Participation on equal terms is critical – in the Nordic IPBES process, and generally

The participants appreciated the opportunity to exchange experiences from their daily lives and processes

1 Workshop agenda and participant list in appendix 1.

2 Berkes, F. 1993. Traditional ecological knowledge in perspective. In *Traditional Ecological Knowledge: Concepts and Cases*, J. T. Inglis (ed.). Ottawa: International Program on Traditional Ecological Knowledge and International Development Research Centre. pp 1-9.

A quarry in central Sweden. Exploiting activities, like mines, quarries, etc., has a local effect on biodiveristy, culture and customary use of biological resources, which might be possible to oversee. However, what abut the cumulative effects from mining, wind mills, hydroelectric dams, roads, etc.? How can we measure this, when environmental impact assessments are made individually for each project? Photo: Håkan Tunón.

in different parts of the Nordic countries. Opportunities to express values and evidence based on indigenous and local knowledge, and learning from others with similar experiences, were important motivations to take part in knowledge exchanges. Many participants had similar experiences of having difficulties in making their voices heard in local as well as national policy processes, and they expressed a shared need to get more respected in decision making processes. A common concern was exploiting activities, such as mineral prospecting, and their cumulative impacts with substantial adverse impacts on biodiversity and ecosystems, and on the opportunities for practicing traditional occupations and governance systems.

When indigenous peoples and local communities are invited to processes, participation is seldom on equal terms, since representatives from government organisations, academia and companies can normally participate as part of their work, while representatives from indigenous peoples or local communities need to leave their daily duties, and may also have extra costs for hired hands taking care of animals and work during their absence.

The language and context presented about IPBES and a future Nordic assessment was viewed as very academic, convoluted and exceedingly complex. The context, objectives and expected results have to be made clear and understandable. It is critical also to clearly explain the possible long-term outcome of IPBES – including in what way it might support holders of ILK, as well as society at large, but also to ensure that the dialogues positively influence the present situation for the participating ILK holders.

Many participants had noted an increased interest for ILK by researchers and the society at large. However, some felt that the interest was of an extractive nature which did not promote and facilitate the recovery and use of their knowledge in practice. Many still experienced a lack of understanding of the value /necessity of consulting with bearers of ILK. Participants also commented that ILK has been used and misused by scientists in the past and this causes for some a concern about initiatives coming from science. A common reflection was that exchange of knowledge is always a matter of equity and respect, and it requires time.

Participation is also about the mandate of the representative of an indigenous or local community. Participants in the workshop had experiences from processes where external actors, like governmental agencies, academia and entrepreneurs, chose particular individuals to take part in projects in order to achieve local participation, who did not have an official mandate from the community. Some groups or individuals tend to become "over-used", while others feel they are invisible in the discussions. This is a challenge in particular when there are few organizational structures representing holders of indigenous and local knowledge.

Pollarded trees – an ancient resurce for leaf fodder, a valuable substrate for biodiversity, and a precious characteristic in some cultural landscapes. Photo: Håkan Tunón.

Others noted that the values and risks involved in sharing knowledge are different in different contexts. As a hypothetical example, smallscale farming in Norway is very different from hunting in Greenland. On the one hand, hunters in Greenland may feel that sharing observations might put access and control over the resource at risk, while on the other hand people in Norway with knowledge on traditional meadow management don't risk losing anything when they explain how elm trees were coppiced in the old days. They are very glad to participate. "In fact, we hear comments like: «You don't know how important this is for me»". Both angles should be recognized and respected.

Proposals for a Nordic ILK IPBES:

- There is a need for ILK knowledge holders to have equal opportunities to prepare for and to participate in a future Nordic assessment. The role of ILK in the Nordic IPBES assessments needs to be clearly stated, as well as the expected outcome of the participatory processes.
- A practical return to the community from consultation processes is critical. It is important to ensure that holders of knowledge are getting meaningful outcomes of the process in relation to their livelihood realities, while contributing to externally initiated processes.
- Ensure that participation is always based on Free Prior Informed Consent, and that proper risk assessment for sharing knowledge is done on a case by case basis when working with ILK holders. Demands for legitimacy, credibility, transparency, trust and equity need to be met. Available ethical codes of conduct should be used.
- The process on inclusion on ILK should start with invitations through nominations with open criteria, ensuring that organizations as well as individuals can nominate themselves. Open criteria for the indigenous, geographical, cultural and gender balance is necessary to strive towards. Conditions for participation should be explained beforehand, such as compensations for loss of income and for extra costs incurred. Expected beneficial outcomes of the process, such as exchange and learning with other holders of knowledge, should also be clear.
- A broad roster of ILK experts, representing a variety of different customary uses of different ecosystem, should be compiled. This could be used for specific issues or themes in the Nordic IPBES assessment process. For instance if a theme is selected to deal with questions regarding grazing and harvest of fodder a selected representation of indigenous and local communities is approached, while issues regarding coastal fish stocks means addressing a different set of experts. This roster might also be suitable for other kinds of exchange.

The Nordic IPBES assessment will benefit from including ILK in IPBES

The workshop proposed a thematic approach to a future Nordic IPBES assessment, with selection of themes that are important in the Nordic context, e.g. in relation to mine prospecting or availability of winter fodder. The cumulative effects of recent and ongoing exploitation should be included in thematic assessments. The contribution from ILK communities could be to highlight key environmental issues and contribute from the reality of indigenous peoples and local communities in the Nordic countries.

It was noted that a challenge for including ILK in IPBES is that the assessments are expected to be done by using available data, whereas ILK is generally held orally and "by the heart, hand and mind". A process where present day indigenous and local knowledge is shared through a series of dialogue workshops was proposed.

Almost all of the participants of the Nordic dialogue workshop – a mixture of people from indigenous peoples and local communities, NGOs, academia, and governmental agencies. However, most of the participants could be said to represent more than one of these groups. Photo: staff at Odalgården.

It was noted as a concern that the IPBES is a top-down process. ILK representatives need to be included in the whole process, including design, analysis and decision-making, for the participation to be meaningful.

The participants proposed that a Nordic ILK – IPBES process should not be a one-off assessment to be filed away, but rather an on-going and evolving database, and that information could be continuously shared, disseminated and used.

Outdoor workshops would add to positive outcomes. Getting decision makers dealing with biodiversity out in nature means that they are more likely to make good decisions. As one participant put it: "We should get decision makers out into the landscape. We managed to do this in our area. We walked together for two days and it was very good. It gave the decision makers a completely new understanding. But we need resources for this".

Proposals for a Nordic IPBES that includes ILK:

- A number of thematic and regional dialogue workshops, to be held in the different Nordic countries in the language of the knowledge holders would increase the ability for holders of indigenous and local knowledge to participate and for the Nordic IPBES to get a rich inflow of a diversity of living knowledge. Such workshops could be a way to both acquire and document relevant ILK as well as an opportunity to check if the knowledge already gathered is translated correctly (an ILK peer review process).
- The Nordic IPBES assessment could develop methods for exchange across knowledge systems by inviting to walking workshops in the field for ILK holders, scientists and policy makers related to ILK. A common meeting ground in the field would create inter-cultural spaces for learning and stimulate implementation of findings.

Potential benefits for ILK holders from participating in a Nordic IPBES ILK process

Some participants had examples of positive impacts from taking part in processes, which had led to values being recovered and brought back to the community. An experience from Finland was that when the EU geographical indicator status was received after an ILK-project, the status of the local knowledge and culture improved. In the same area, local fishermen identified the potential importance of IPBES for them, and when local schools were involved, e.g. with pupils measuring water visibility, this helped create a new awareness in the local community with attempts to increase the inclusion of LK in local management (see annex 3). The area is now seen as important cultural area.

Interests from external projects might improve the local status of ILK and consequently also the local awa-

A walking workshop in Mørkridsdalen in Norway in 2011. A local farmer, a researcher, a conservation biology official and a nature interpreter are discussing customary use of the land and its relationship with the biodiversity values. Photo: Håkan Tunón.

reness of the value of ILK and its connection to a sound ecosystem.

Proposal for a Nordic IPBES that includes ILK:

- It is of particular importance to ensure that the ILK process in a Nordic IPBES assessment contributes to protection and promotion of the indigenous and knowledge knowledge, including its implementation and transmission to new generations.

Non-monetary values need to get stronger attention in decision-making related to biodversity and ecosystem services

Strong concerns regarding the diminishing of other values than monetary in decisions on natural resource use were repeatedly coming up on the table during the workshop. As an example, in Norway there is at present a mining project where waste might be deposited in one of the fjords. They have looked at it from different angles, but there are still no tools to bring in other values than the monetary ones. But it is not only monetary values that are important, but also cultural values etc. One also needs to look at long term versus short-term impacts, for instance incomes from mining vs. damage to ecosystem services. Participants expressed hope that these things regarding the balance between values could now be made visible and discussed in IPBES.

Proposals for a Nordic IPBES that includes ILK:

- Ensure that the process includes an emphasis of how to make different values visible and weighted in policy decision-making processes that builds on IPBES outcomes.

Introduction

This report presents the outcome of a *Nordic Dialogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment.* It was held at Odalgården, Uppsala, Sweden 1–2 June 2015, with 30 participants from Indigenous peoples, such as the Saami people and Inuits, and from local communities, and representatives/organisations of other local knowledge systems from all over the Nordic countries; Denmark, Finland, Faeroe islands, Greenland, Iceland, Norway, Sweden and Åland (see appendix 2).

The dialogue was part of a scoping study by Naptek/CBM[3] on Indigenous and Local Knowledge (ILK)

3 Swedish National Programme on Local and Traditional Knowledge

in a future Nordic Assessment on biodiversity and ecosystem services within The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) (see www.ipbes.net). It was performed as a contribution to a Nordic Scoping Study and focused on how to connect between indigenous and local knowledge (ILK) and other knowledge systems in a Nordic context and assist in developing – in collaboration with indigenous peoples and local communities (IPLCs) – a Nordic methodology on how ILK could be included in a full Nordic IPBES assessment on biodiversity and ecosystem services in order to fulfil the desired requirements of full and active participation, reciprocity and FPIC.

The background is that indigenous and local knowledge systems are increasingly recognized and brought forward as sources of understanding on ecosystem dynamics, sustainable practices, and interdependencies between people and nature; a potential that often has not informed decision making on ecosystem management beyond the local level. IPBES thus aims at "*Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems*"[4], paragraph 7(d)), and the IPBES Task Force on ILK is currently in the process of developing principles and procedures for making use of synergies across knowledge systems in its work programme and assessments. Given that this work is in progress, the experiences from the scoping of a Nordic methodology may contribute to the global work of develop procedures, in the same way as the Nordic ILK methodology may later be adapted to what is coming out of the IPBES Task Force work on ILK in IPBES.

The focus for the dialogue workshop was how Indigenous peoples and local communities as holders of important knowledge can be included, and benefit from a future Nordic assessment on biodiversity and ecosystem services, based on principles of free, prior and informed consent.

More specifically, the dialogue workshop explored:

- how to include indigenous and local knowledge together with scientific knowledge, based on respect and equity, in a future Nordic IPBES assessment of the status and trends of biodiversity and ecosystem services.
- how a fair and participatory process that is credible, transparent and useful for all should be designed,
- how – and if – indigenous and local knowledge holders and their communities could benefit from participation in a future Nordic assessment.

The workshop was an informal dialogue, with presentations from different views and experiences. Much of the time during the workshop was used for dialogue in smaller groups.

Below, the outcomes are presented session-by-session. The agenda of the workshop is found in Appendix 1.

Session I: Welcoming Session

***Expected outcome:* Participants united as a group and defining a comprehensive view of individual and collective perceptions of what is indigenous and local knowledge, to be dealt with further during the process of the dialogue.**

Indigenous peoples and local communities are holders of knowledge, within a diversity of cultures, with both similarities and differences. One common point of departure is that the knowledge is based on local experiences. Given the diversity among the participants, the workshop started with a "bee hive" exchange about "what is indigenous and local knowledge for you". Some of the main points are presented below.

Similarities between different groups of traditional knowledge holders

Traditional knowledge is a type of knowledge based on direct observations and experiences. It is knowledge of local people, who are living in the land and using the biodiversity. Their life depends on this knowledge.

Håkan Jonsson, president of the Swedish Saami Parliament, listen intensly to what Parnuna Egede, International Inuit Circumpolar Council, has to say. Photo: Håkan Tunón.

related to Conservation and Sustainable Use of Biological Diversity at Swedish Biodiversity Centre

4 UNEP/IPBES.MI2/9 Appendix 1, para 2d

Peter Einarsson, organic farmer, Søren Espersen, Danish cultural landscape rural developer, and Peter Benson, Swedish Saami Parliament reflect upon the IPBES-process. The pastoralist perspective is being added and by Laila Rehnfeldt and Anne Walkeapää, Swedish Saami Parliament, and by Siv Beate Eggen and Katarina Sparstad, Norwegian Mountain Pastoralists. Photo: Håkan Tunón.

It is not only indigenous people who have this knowledge but also Nordic summer pastoralists (seterbrukare/fäbodbrukare), artisanal fishermen, etc. This is knowledge we have learnt from our home, from our parents and grandparents. It is knowledge, which is not taught in schools. You have it with you, and you are not necessarily aware why you know it.

Traditional knowledge in the Nordic countries is sometimes mixed with older scientific knowledge, which can be older than 150 years. It can be extremely difficult to differentiate the origin of today's local knowledge, and maybe that would not be meaningful.

Comparison with science

One important issue is that we just know how to do something, and it may be difficult to explain it in a scientific context. *We* know that it works, but if we cannot give a scientific explanation, scientists may say to us "we cannot believe you". We should not be afraid of combining local knowledge with other kinds of knowledge.

Common characteristics of the diversity of traditional, local and indigenous knowledge

Local and indigenous knowledge is knowledge of "the heart, hand and mind".

It is often "silent" knowledge based on shared experiences.

You can use different techniques to help people understand something.

There are both differences and similarities between indigenous and local knowledge.

Knowledge is a process, and it is connected to language. However, the same system (or person) can embrace different kinds of knowledge at the same time.

Indigenous and local knowledge is unique for each local setting

An example in the Nordic setting is the importance of the annual seasons, which set all the basic conditions for the whole use of biological resources and determine the seasonal activities.

Lena Bergils, former museum official and rural developer, is penetrating the subject together with Gudrun Kuhmunen, active in the National Swedish Saami Association and the Laponia-management, while Asta Balto, previously the Saami University College of Kautokeino, and Liv Byrkjeland, Norwegian Nature Inspectorate, are thinking about different perspectives. Photo: Håkan Tunón.

The characteristic of indigenous knowledge compared to other kinds of local knowledge

Indigenous knowledge is the ancestral knowledge necessary for survival. It has been sustainable because it is all about the long-term survival of the community in an area and to safeguard the availability of resources for the future. We should never take more than we need.

An example given was a friend who asked right before the new fishing season "do you still have salmon in the deep freezer?" If you do, you have taken too much salmon, or you have not shared enough. We have also learned to say our thanks to the resources, and to the land. We ask for permission before we harvest.

It was said that Saami knowledge and Inuit knowledge is indigenous knowledge since these peoples are recognized as Indigenous peoples. While the knowledge of other local communities is classified as traditional and local knowledge. There is a rights aspect connected to indigenous knowledge (special collective rights versus individual rights) and international instruments like ILO C169 and UNDRIP laying out consultation requirements (FPIC).

Transferring knowledge between generations

ILK is something my father might know, that I know from him. It is about how you do things, what you have been learning from fathers and mothers etc. It is practical knowledge that you in turn give to the next generation. There is generally more ILK in sparsely populated areas. You have to listen to the people you have around you. Not only good things but also traumas pass on from one generation to the next.

Experiential learning

For example, there is a lot of knowledge needed in order to move sheep on a boat between grazing areas on different islands. You learn by doing it, and not by reading.

Ways of getting knowledge

One participant referred to three ways of acquiring knowledge: the logical way, the empirical way, and through moral self-acceptance (acceptance of the self as a moral being). ILK could then be said to be very much empirical and related to a moral self-acceptance, while scientific knowledge is more based on logic and empirical information, he reflected. This thought can be referred back to the Christian theologian Edward J. Carnell.

Evolving, always under development:

Traditional knowledge is never fixed knowledge**.** When parts of it can no longer be used - like in the case of climate change -, you take the still useful parts for future use. It is not necessarily as simple as it sounds. It requires intimate knowledge and the ability to know how to pick the best part of it.

Local knowledge is inherited and transferred, adaptable, always evolving. There is a huge amount of sustainability within it. Learning local knowledge is based

The nets are being dried at a traditional fishing community along the coast of the Baltic Sea. Local small-scale fishing is being threatened by industrial fishing. Photo: Håkan Tunón.

on mutual respect. You need an open mind to succeed. You need to understand local circumstances and be willing to learn.

Diversity and richness in local and traditional knowledge:
Traditions can vary a lot, also within the same village. Should we differentiate between traditional knowledge and individual habits? You learn and use ILK with your head, hand and heart. We have different approaches, and these different ways may all be equally valid.

Indigenous and local knowledge and sustainability
ILK may not always be sustainable. Sometimes there is knowledge that is not sustainable but is used locally. We should not be afraid of talking about this. In most cases where this happens it is when a traditional system is influenced by factors from outside that are changing the biodiversity and ecosystem functioning so rapidly that the holders of knowledge do not have time to adapt in the evolving process. An example given was the new local practice of fishing with dynamite in a local area in Ecuador. This was seen by one of the participants during fieldwork. This was "local knowledge" but a new tradition not developed within the local context.
It can also be that the holders of Indigenous and local knowledge do not have the possibility to overlook what happens with the resource at a general level, e.g. due to population growth.

That might not be so much of a challenge, when you still have the context, it was reflected. The cultural and spiritual element of indigenous knowledge means there is an informal structure in place of who has rights to land and biodiversity.

The challenge is when the ILK is disconnected from modern reality. Also indigenous knowledge can be wrong. Things that evolved in earlier times – like throwing things away – worked well before, when population pressure was less, and the waste was organic, and when there was very little of it. But today there is plastic and metal, and much more. Thus, when we do not reorganize the handling of waste, we are not adapting to the new reality.

Another example: we are taught only to take one egg from each nest, but what happens when the population grows? Each family still only takes one egg each, but with population growth the pressure increases.

There are also the cumulative impacts on livelihoods from different processes and activities. It might be difficult to adapt when many small changes are pressuring from different angles.

Unclear with the term local knowledge
The term "local" can mean anything to anybody, and that is a problem. It can then be basically everywhere. It can also be used in the same manner as "ladies' football", as something less than "real" knowledge (or "real" football). The term can be problematic, and difficult to define. It is a difficult concept.

Local knowledge is getting lost, and not transferred over generations
Local knowledge is often not traditional any more. There is only a small minority of holders of traditional knowledge that continue to practise it. There are few people learning traditional ways, and those who do, are rather people moving in from Germany, Denmark, or similar, and not our own youth.

Revitalization of lost indigenous and local knowledge
It is important to use the knowledge and to create a dialogue with knowledge holders of the lost practices. In a national park in Norway, we learn from the old knowledge holders that are still in place, and we practice it the way they tell us, together with local practitioners, in order to better manage the national park. We need also to reflect upon records of traditional knowledge in books, e.g. on plants and agricultural techniques, as these may be more valuable in nature management than modern "scientific" techniques.

Sustainability, power and governance
An example of change mentioned was that of the traditional duck hunting in the spring in a local Saami area. Spring hunting is prohibited in other places, but in this local area they are permitted to hunt under strict restrictions and according to their strong Saami traditions. While this activity earlier was in the hands of the local Saami, they have now lost the control to outside central

Olaus Magnus depiction of egging from 1555 – a use with very long tradition that could be sustainable, if managed correctly.

How traditional is *traditional*? And when has *traditional* turned *industrial*? How local is *local*?
Small-scale fishing boats and coastal communities are gradually changing into industrial boats with large fishing areas, while the communities often turn into touristic summer villages for urban people. Photos: Håkan Tunón.

authorities. This has created opposition and negative attitudes among some hunters. The police watch the activity closely and have now and then arrested hunters, that have shot to many ducks. The local people feel they have lost control over what they themselves controlled earlier. To lose control over the resource can lead to the loss of the responsibility to act in a sustainable way according to traditions.

Indigenous and local knowledge is perhaps not so much about how many bears and wolves we have or should have. That is a political power issue. Now the urban middleclass influences attitudes and thus sets the rules.

A difference between indigenous and local knowledge is that indigenous knowledge has more formal protection than local knowledge. This has been very visible within the seed world, where intellectual property rights have been a real challenge for local control and development of knowledge. One participant would like to see a much more open ownership than what was decided in the 90's, in respect of genetic resources in agriculture for example.

If you don't have the consent from the local community or indigenous people to use their knowledge, that should be respected regardless of formal ownership rights.

Referring to official definitions

Some also referred to definitions they had heard, e.g. Berkes[5]' definition of traditional ecological knowledge: "*a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment*".

Summary reflections:

The diverse group of knowledge holders noted that they have much in common regarding their perspective on indigenous and local knowledge. They share the same kind of challenges related to recognition of their knowledge and rights, although they work in very different contexts and have close relations to different biological resources and landscapes. It might be of interest to look at what IPBES ILK task force have been reflecting so far. See for example:

From IPBES/1/INF/5 "Consideration of initial elements: recognizing indigenous and local knowledge and building synergies with science": *Working Definition for Indigenous and Local Knowledge* Indigenous and local knowledge refers to the multi-faceted arrays of knowledge, know-how, practices and representations that guide societies in their innumerable interactions with their natural surroundings. This interplay between people and place has given rise to a diversity of knowledge systems that are at once empirical and symbolic, pragmatic and intellectual, and traditional and adaptive.
There are a number of different definitions, but the definition of traditional ecological knowledge by Berkes cited above may serve as a working definition. Furthermore, several different terms are utilized: indigenous, local or traditional

5 E.g. Berkes, Fikret, (1999) *Sacred ecology: traditional ecological knowledge and resource management*. Philadelphia: Taylor & Francis.

Summer grazing in the mountain birch forests with local breeds of cows. Photo: Håkan Tunón.

knowledge, traditional ecological/ environmental knowledge (TEK), farmers' or fishers' knowledge, ethnoscience, indigenous science, folk science, among others. While each of these terms may have somewhat different connotations and reference groups, they share sufficient meaning to be used interchangeably in the present document.

Inuit Circumpolar Council offers the following definition of traditional knowledge: *Traditional knowledge is a systematic way of thinking applied to phenomena across biological, physical, cultural and spiritual systems. It includes insights based on evidence acquired through direct and long-term experiences and extensive and multigenerational observations, lessons and skills. It has developed over millennia and is still developing in a living process, including knowledge acquired today and in the future, and it is passed on from generation to generation.*

Session II: Introduction to IPBES and its work to create synergies between indigenous, local and scientific knowledge

***Expected outcome:* Participants familiar with IPBES including its aim of respect and recognize indigenous and local knowledge in the assessments, and with the Scoping Study of a Nordic IPBES assessment.**

The session provided the participants with a background to IPBES, and the Nordic scoping of a future Nordic assessment.

The scoping study of Indigenous and Local Knowledge in a Future Nordic IPBES Assessment

Håkan Tunón, project leader, CBM

(see further presentation in PDF-file, appendix 3, p. 79).

Håkan Tunón presented the assignment to Naptek/CBM to analyse how to connect between indigenous and local knowledge (ILK) and other knowledge systems in a future Nordic sub-regional IPBES assessment of biodiversity and ecosystem services. The assignment is linked to a scoping study for a Nordic sub-regional IPBES assessment (presented by Maria Schultz, see below). Tunón gave an overview of the major questions in an IPBES assessment,

which focus on the status of biodiversity and ecosystem functions and services, current trends and changes, causes behind these changes, and policies and governance needed to halt biodiversity loss and deterioration of ecosystems. Tunón stressed that the intention of IPBES is to use available data in its assessments and to repeat assessments in the future in order to monitor trends.

In collaboration with Indigenous peoples and local communities (IPLCs), Naptek/CBM will recommend a Nordic methodology on how ILK can be included in a full Nordic IPBES assessment, in order to fulfil the desired requirements of full and active participation, reciprocity and Free, Prior and Informed Consent. The task includes a Nordic dialogue with IPLCs, literature reviews, and other forms of identification of data, and development of a roster of experts related to ILK and IPBES assessments The aim is to see how ILK can be included on an equal basis in a full Nordic IPBES assessment. This also includes identifying relevant groups that should be included as ILK holders, and their relation to other knowledge systems, and also if and how for example broader citizen science should be included.

Tunón asked the participants to keep some questions in mind during the workshop:

- Which are the Indigenous peoples and local communities in your country?
- Who carry indigenous and local knowledge?
- How can they take part in the process? What is needed for Indigenous peoples and local communities to be included?
- What is similar in all Nordic countries and what is unique to one country or region?

What is IPBES, and what is the Nordic IPBES assessment scoping?

Maria Schultz, Project leader for the scoping of the Nordic IPBES Assessment. The Swedish Environmental Protection Agency, and Stockholm Resilience Centre

(see further presentation in PDF-file, appendix 3, pp. 79).

An Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) was established 2012 to assess the state of the planet's biodiversity, its ecosystems and the essential services they provide to society that underpin human well-being. IPBES will synthesize, review, assess and critically evaluate relevant information and knowledge generated worldwide by governments, academia, scientific organizations, non-governmental organizations and indigenous peoples and local communities. It aims to strengthen capacity for the effective use of science, and other knowledge systems, in decision-making at all levels. IPBES is an independent intergovernmental body open to all member countries of the United Nations, and now counts 124 Members. The idea is that IPBES will work in a way similar to the IPCC, the Intergovernmental Panel on Climate Change, but with a focus on the global status and trends of biodiversity and ecosystem services rather than on climate change.

Maria Schultz is presenting the IPBES framework and process as well as the working plan for the Scoping Study of a Nordic IPBES assessment. Photo: Håkan Tunón.

Schultz described the goal, organization and approach of IPBES. She talked about present levels of biodiversity loss, about planetary boundaries and about the multiple effects of global change. Maria explained the term ecosystem services and how these services can be measured and classified. She presented the conceptual framework of IPBES and the different objectives of IPBES. She then described the Nordic scoping process. The draft chapter outline for a full Nordic IPBES – drawn from outlines of IPBES assessments generally - is the following:

- Chapter 1: Setting the scene
- Chapter 2: Nature's benefits to people and quality of life
- Chapter 3: Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's benefits to people
- Chapter 4: Direct and indirect drivers of change in the context of different perspectives of quality of life
- Chapter 5: Integrated and cross-scale analysis of interactions of the natural world and human society
- Chapter 6: Options for governance, institutional arrangements and private and public decisionmaking across scales and sectors

The Nordic scoping study will include the compilation of a roster of experts, including knowledge holders of ILK. The scoping will involve dialogue and interaction with a broad spectrum of stakeholder, specifically knowledge holders of ILK. The scoping study will include a questionnaire, which will be sent out to a broad group of experts, including holders of ILK.

Schultz presented an overview of the timetable for different IPBES processes. The aim is that regional and sub-regional assessments are conducted 2016-2018 and concluded during 2018. The Nordic assessment needs to be completed by 2018. Maria concluded by stressing that the realization of a Nordic sub-regional IPBES assessment depends on the availability of funds, which is not yet certain. She provided the address to the main website for IPBES: http://www.ipbes.net

What has been done so far within IPBES related to developing procedures and approaches for creating synergies between ILK and science? Multiple Evidence Base approach.

Pernilla Malmer, SwedBio at Stockholm Resilience Centre (see further presentation in PDF-file, appendix 3, pp. 82)

Pernilla Malmer gave a background of what has been done so far within IPBES to include indigenous and local knowledge, and its connections to the work of the CBD. She outlined how the UN Convention on Biological Diversity (CBD) call on all the Parties to the convention to respect, preserve and maintain traditional knowledge, innovations and practices of indigenous peoples and local communities (CBD, Article 8(j)). CBD has also a crosscutting Programme of Work on traditional knowledge, which also applies to the CBD 2020 Aichi Biodiversity Targets, and Traditional knowledge is specifically addressed in Target 18.

IPBES has been established to provide needed knowledge for the effective implementation of the objectives in the CBD and other biodiversity conventions, and informed policy making at large. IPBES has from its beginning established as one of its guiding principles: *"Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems"*. IPBES has a special Task Force on Indigenous and Local Knowledge, which is developing principles and procedures for making use of synergies across knowledge systems in the work programme and assessments of IPBES. Naptek/CBM has continuous dialogue with the IPBES ILK Task Force.

The IPBES ILK Task Force will:

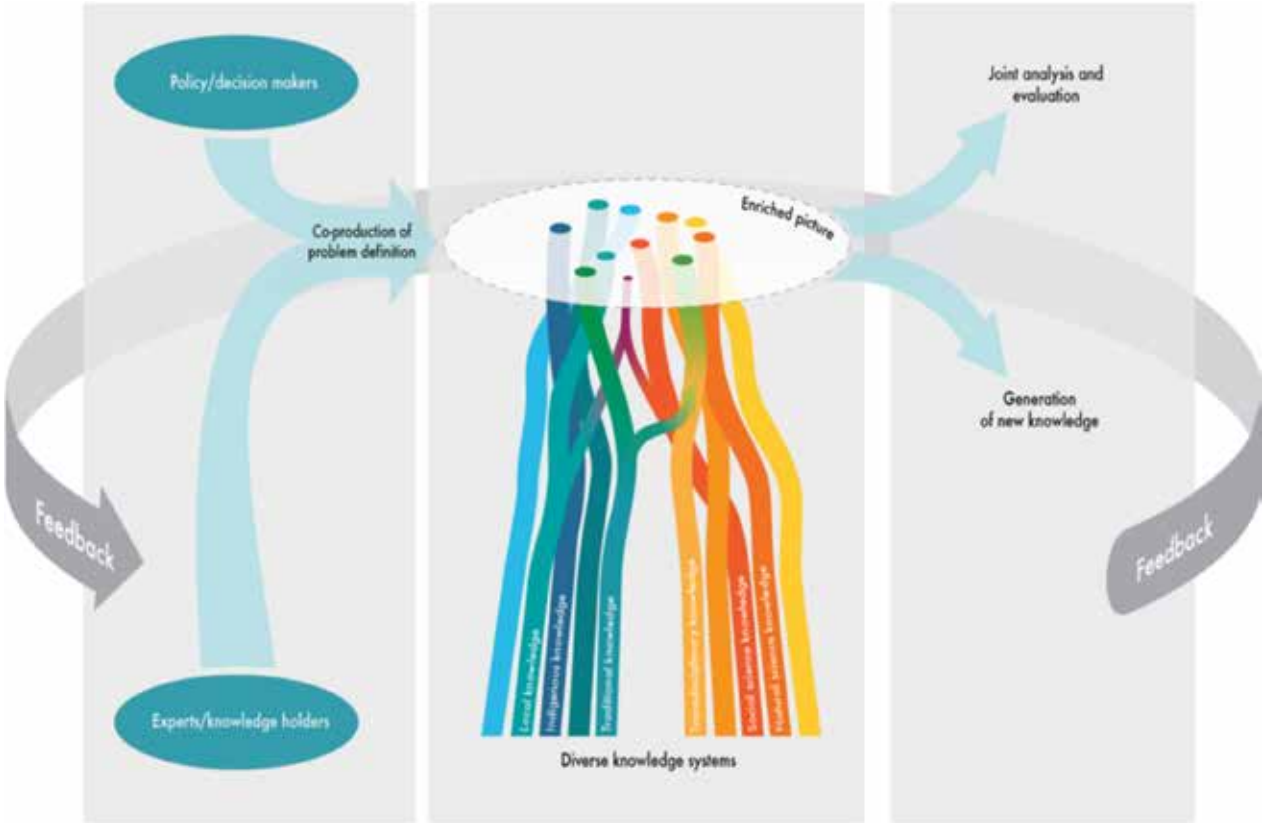
- establish a roster of ILK experts to support the Platform's work;
- hold global dialogue workshops of ILK experts;
- review regional case studies with focus on ILK
- develop procedures and approaches for working with ILK
- develop a participatory mechanism for ILK

This is also part of what the ILK Nordic scoping aims at realize at Nordic level.

Malmer also gave an outline of "the Multiple Evidence Base (MEB) approach", as a base for the way we see relations across knowledge systems in the Nordic IPBES assessment. While applying a MEB indigenous, local and scientific knowledge are seen as different manifestations of valid and useful knowledge systems, where each system has capacity to validate its own knowledge, and where the process from each knowledge system, including also the diversity of sciences, contribute to an enriched picture, as a base for joint analysis. Generally, a MEB could be seen as a process in three phases:

1. Defining stakeholders, problems, goals
2. Bringing knowledge together in a common platform
3. Joint analysis and evaluation as a basis for catalysing and agreeing on further actions

The process of generating the knowledge is seen as equal important as the outcome as such. The process



A visualization of how the Multiple Evidence Base appraoche works in an assessment process connecting indigenous, local and scientific knowledge systems.

creates legitimacy, credibility, and usefulness for all actors involved, on equal basis.

Q & A session after the presentations in Session II:

Several comments related to the fact that ILK has been used and misused by scientists in the past. We must thus be careful. It is important for the IPBES process to live up to the demands for transparency, trust and equity.

We must connect across knowledge systems differently depending on situation. We must have many different methods since the situations are different and it is important to stress that some knowledge is not for sharing – this needs to be respected.

Who will control that the agreed ambitions and expectations are met? It was stressed here that the procedures are not processed yet IPBES. That's one of the reasons why it is so important to include IP&LK representatives in the different bodies of IPBES. It's been difficult so far to include IPLC representatives with the organization and compilation of the task force on ILK in IPBES.

It was noted that a challenge for including ILK in IPBES is that the assessments are expected to be done by using available data – this is a problem as ILK is generally hold by oral tradition

SESSION III: Nordic experiences of mobilizing indigenous and local knowledge for strengthened governance of biological diversity and ecosystem services and functions.

Expected outcome: ***Methods and experiences where indigenous and local knowledge has proven to lead to better governance of biodiversity and ecosystems, and informed policy decisions has been shared. The session will be based on concrete cases and processes where indigenous and local knowledge have been mobilized in a local context in Nordic countries.***

The reindeer GIS project. Cumulative impact on reindeer herding from a diversity of causes

Peter Benson, Saami Parliament, Sweden

(see further presentation in PDF-file, appendix 3, p. 85)

The Reindeer GIS project is a land use database at Saami Parliament that shows knowledge from the reindeer herders (iRenmark). The knowledge needs to be simplified when recorded in order to create a useful outcome. Benson's presentation showed that the landscape of the reindeer herders today is fragmented from the exploitation by many different modern land uses. This makes it difficult to uphold traditional knowledge and to continue with the reindeer husbandry. GIS can be a good

Peter Benson presented the GIS system to envisualize the land use of the Saami reindeer husbandry in Sweden. Photo: Håkan Tunón.

Marie Persson talked about the Saami struggle against mining prospecting in biologically and culturally sensitive areas. Photo: Håkan Tunón.

way to visualize the land use and knowledge of reindeer herders, as well as the cumulative impacts from different forms of exploitation. However, GIS is just a tool, the problem must be clearly defined and the questions formulated before starting. GIS in itself is not enough.

Explicit knowledge is built upon concepts, so the concepts used must be clearly defined and understood by all. There is also a need to agree on what the problem is. Indigenous and local communities must also be allowed to analyse and reflect upon the data collected, not just take part in the monitoring. GIS is one way to show cumulative encroachments. Maybe this ought to be a legal requirement when doing environmental impact assessments. GIS can explain the present situation for reindeer herding in a good way for other actors.

Mobilization of local knowledge about impacts from potential mining exploitation as a base for informed decisions

Marie Persson, Rönnbäcken, Sweden
(see further presentation in PDF-file, appendix 3, pp. 86)

It is often difficult to articulate resistance to mining. Persson has tried to connect people and spread information and raise awareness regarding the threat of exploitation in her community. Issues regarding mining are very much about paying respect to future generations, long-term sustainability, food, health, culture and human rights. Mineral prospecting and mining affects indigenous peoples and local communities and waterways also far from Rönnbäcken. The Ume river continues to the city of Umeå at the coast of the Baltic sea. The reindeer herding as well as hunting and fishing in the area would have to be abandoned. A mine would affect general health and different regional food sources. The Rönnbäcken-group, which has been formed in the community to resist the exploitation, has translated information from the mining company into Swedish. The Saami people settled in the area are extremely dependent on their land security. It is important to stress that the Saami culture is dependent on land and water and that there is a colonial history of exploitation in this part of Sweden. The Saami people have been made invisible in the process, and the same goes with the Saami knowledge. Today Saami children are growing up with a high risk for mental and physical ill-health. This is affecting the whole Saami people, but many problems are "hidden". It is important to visualize the broad dependency of land and water and food gathering in the Saami communities. It is also important to look at the cumulative effects from the whole range of mega projects, and from the colonial process with a historical context, analysing the Saami situation in Sweden today. The national mineral policy has set up goals to double the mining activities in Sweden to 2020 and to triple them to 2030. Today Sweden is the leading mining nation in Europe and over 90% of all iron ore produced in Europe is produced in Sweden. Therefore Sweden has a possibility and a responsibility to do everything possible to influence the global mining industry to

protect long-term sustainable local communities, food, water, health, Indigenous peoples, ILK, human rights and environment, and act accordingly in all its operations. Today the practice of the Swedish government regarding mining projects on Saami territory is not complying with agreements set out in several international frameworks. There is no consent from the Saami people in these processes today – there is no actual possibility to have influence on planned mining projects or to have a dialogue on equal conditions. In the case regarding the planned nickel mining in Rönnbäck, the majority of the Saami affected by the mining project are excluded from taking part in the process and are not even considered to have the right to speak. There is an internationally growing critique against the Swedish government's policy in respect of the Saami people, and the Swedish government is failing in recognizing Indigenous rights of the Saami regarding land, water but also language and other aspects of the culture. However, despite this critique there is a constant delay in handling these questions and an unwillingness to act from the Swedish government – regarding changing the mineral policy, legislation as well as regarding respecting Indigenous people's rights.

Q & A. The main focus of the questions was about the concerns regarding the mining project in Rönnbäcken. It was clarified that 3 mining concessions are already granted in Rönnbäcken. The Committee on the Elimination of Racial Discrimination is reviewing the case now. The Swedish government has declared that the mineral act overrules other interests, like the reindeer husbandry. But this is still challenged.

There has been a recent victory for the Saami community in court regarding one of the company's mining prospecting permits, where the decision made by the Mining Inspectorate to extend one of the permits was cancelled by the court. This has only happened once before in Sweden. The area was also recently (June 2015) highlighted by WWF as in urgent need for an environmental protection.

The Snow Change Cooperative experiences of mobilization of indigenous and local knowledge in Finland

Johanna Roto, Snowchange, Finland
(see further presentation in PDF-file, appendix 3, pp. 88)

Roto talked about experiences from the Snowchange Coop in Finland, which is an independent, non-profit cultural and research organisation with a network of partners in Finland, across the Arctic and in Australia and Aotearoa (New Zealand). Snowchange has a steering committee of indigenous and local community leaders. The organisation works on issues related to biodiversity, climate change and local communities e.g. with the Arctic Council, the Intergovernmental Panel on Climate Change, Indigenous Peoples Climate Change Assessment, National Science Foundation in the US, universities and other partners.

In the projects of Snowchange, indigenous peoples and local communities guide the process of documenting TK and are owners of the product. They share their knowledge with research on a case-by-case basis as needed. It is important in such processes to discuss who represents the community. Snowchange's philosophy is that the project should go to the people for consultations, not the other way around. Snowchange always goes back to share preliminary drafts of any materials prior to their publication. Nothing is published without the mandate from the community, person or the family. It is important that people are comfortable with sharing information and with how and in what way the information will be used.

The logotype of Snowchange Cooperative.

Johanna Roto informed about the ILK-work of Snowchange – Finnish NGO. Photo: Håkan Tunón.

The best solution to the keeping of knowledge is if databases are community-controlled. Material from the different projects run by Snowchange is also scientifically peer-reviewed and thus validated both by the local community and by the scientific community. Snowchange uses tools like mapping, GIS, artistic expressions from local people, films, and recordings.

As a sub-assignment within the Nordic ILK-IPBES-project, Snowchange arranged two workshops in Finland in May 2015, which thus contributes to the IPBES Nordic ILK scoping study. Snowchange highlighted two case studies about which changes in the environment people had observed. Both these projects led to substantial restorations of land. Holders of local knowledge have participated in the process and their knowledge has been recognized as science. Snowchange has worked *inter alia* with documentation of local knowledge of the fishermen in Eastern Finland.

As regards the Puruvesi workshop, Roto mentioned that today, local fish and fishing are not valued by society. Examples of positive impacts from taking part in the process of seeking new ways of valuing the local fishing culture and the food are that after the process, important values are brought back to the community. EU geographical indicator status was received in december 2013, and this improved the status of the local fishing culture. In the project local fishermen identified the potential importance of IPBES and possible spin-off results. When local schools were involved, e.g. with pupils measuring water visibility, this created a new awareness in the local community and there is attempts to increase the inclusion of LK in management. The area is now seen as important cultural area.

Q & A: What are the possibilities to incorporate this kind of processes and experiences of mobilizing local knowledge in a Nordic IPBES assessment? Is this kind of knowledge perceived as ILK and how would it be part of the "other" parts of the full Nordic assessments? Could one think of a separate ILK assessment? How to keep old TK alive, and how to collect and record knowledge, and create databases, to be used in school, etc.? A proposal mentioned was interviews performed by community members. Support could be provided to locals in this work if needed. It is important though to be able to ask the right questions interviews. What would a contribution to the international processes give back to society, in particular at local level; could it for example support desired changes in local management? An answer is that in this case, there will be no direct contributions, but for local individuals involved it is important be recognized and to know they have been involved.

Adam Hansen talked about the PISUNA-project. Photo: Håkan Tunón.

The PISUNA project Opening doors to local knowledge

Adam Hansen, Pisuna.org Greenland
(see further presentation in PDF-file, appendix 3, pp. 89)

The Department of Fisheries, Hunting, and Agriculture established participatory monitoring with fishermen, hunters, and others to inform adaptive management of Greenland's natural resources (www.pisuna.org). Between 2009–2011, natural resource committees (NRCs) were established in four communities in Disko Bay in Central West Greenland. Since 2011 the project has spread elsewhere in several rural communities along the coast. A key motivation for many participants is knowledge sharing between generations

NRC members reported their field observations and harvests, either after returning from each trip using a paper calendar, or verbally at NRC meetings. At quarterly meetings, individual sightings are compiled into summary reports, results are compared from the same area/season as previous years and interpreted by community members, and management possibilities are discussed. Any management decisions (e.g. change in quota, hunting season, gear restriction, etc.) proposed by the NRCs are presented to the Local Municipal Authority, and the NRC hosts a public meeting approximately annually. At these meetings, monitoring results and decisions for the year are discussed with the entire community to validate the findings and obtain broader support for management proposals. This simple approach has proven capable of increasing local involvement in natural resource management.

During the first three years, 33 participants recorded 24 variables including sea ice, shipping, three fish, nine mammals, and nine bird populations. Eight participants used paper data sheets; the remainder contributing observations orally. The NRC monitoring system has contributed to 14 management recommendations, including: setting quotas (2 proposals), changing hunting seasons (5), identifying research needs (3), altering fishery bylaws (2), and others (2). The local municipal authority has so far responded to 11 of these 14 proposals.

***Q & A*:** Is the local knowledge used in practice? Adam explained that according to law, local knowledge (LK) should be included in the decision-making processes in Greenland. However, often decision-makers give more weight to advice from biologists as more important even if it doesn't sometimes have a connection to the most up-to-date situation or to the reality as seen from the perspectives of the local community members.

Adam told that LK is mostly orally transferred knowledge and are likely to have limited written knowledge accumulation. He then mentioned some of the key results of PISUNA so far:

1. Small-scale fishermen in one community have documented that many trawlers with heavy equipment are increasingly fishing close to land in a shallow sea-area where the community members believe spotted wolf-fish have their breeding and nursery-areas. They are concerned that the trawlers may destroy the seabed and the possibilities for local fishing of wolf-fish. They have therefore suggested a zoning process. The proposal has been discussed by the Local Municipal Authority, which has now started a hearing process.
2. Another community has proposed an experiment regarding the collection of eggs from Arctic tern. A number of islets may be experimental ground. Islet A will be egg harvesting place and Islet B next to A will be left without egg harvesting in peace in order to evaluate the outcome. When there is egging in the area, the Arctic terns lose an egg or so from harvesting, but on the other hand human presence may reduce the presence of the Arctic foxes that threaten the tern colonies as a whole.
3. Regarding communities interest in PISUNA, Adam assessed that, in the new communities north of Disko Bugt, about 1/3 has taken the PISUNA project on board to run it independently themselves, 1/3 need regular contact to proceed, and 1/3 have indicated limited or no interest in joining the project.
4. The key challenge is the gap in time from when observations and recommendations are made by the community members to the response and feedback from decision makers. It is important that the community members quickly can see that their observations and information are being used in practice for improved decision-making by the Local Municipal Authorities.
5. Some communities are interested in participating in PISUNA, and others are not. The communities that are not interested don't want to share their observations and knowledge about certain species, since they suspect it might lead to further restrictions. Qaarsut/Saattut People didn't want to reveal a new habitat for common guillemot, as they fear immediate use of the resource might result in no permanent habitation.
6. Although PISUNA has significantly improved the dialogue between community members and the government as well as shortened the time from observation to decision-making, there is still in many communities a rather low confidence towards the state agencies.

What happens in the project if there is a conflict between LK and scientific knowledge? Examples were given regarding regulations concerning bird hunting. Last year, a new law was suggested allowing the hunters to hunt fewer waterfowls per day. PISUNA communities at the same time have reported that there is an increase of the numbers observed of the same species. Canada goose may be pushing away the native Greenland white-fronted goose. Community members in PISUNA have suggested that the restriction on Canada goose hunting should be lifted. Sometimes it is asked how we can make sure that LK is not mixed up with "interests"? However, the results from PISUNA suggest that scientists are generally reporting the same changes in nature as the community members. Local people sometimes have the perception that scientists want to protect and preserve "everything".

LK and scientific knowledge have different ways of gathering data and counting. Despite different methodologies, how can they be combined and strengthen one another? Can certain legal decisions be delegated to local communities? This would mean that the response time would be shortened. Some community members feel that scientists are not out enough in the local areas to have reliable and correct information, and that this sometimes means the central government staff is making the wrong decisions.

Regarding local teachings: Old stories are often filled with moral lessons and values on resources and resource use. What happens with the local responsibility and feeling sof "ownership" when outside interests and power come and decide how many birds should be hunted, etc.? Governmental decisions are often rather general and broad, even if there are many hundred kilometres between the communities and the arrival and departure time of many species vary substantially from one community to the next. An example is the regulation of Arctic char, where fishing season synchronisation has resulted in massive growth and spread further from spawning ground, as well as a change in the colour of the meat. It was mentioned that the consequences of ill-informed decision-making can sometimes be that the environmental "balance" is being lost.

Revitalization of customary sustainable practises in protected areas and the role of local farmers.

Liv Byrkjeland, Norwegian Nature Inspectorate in Luster, Norway
(see further presentation in PDF-file, appendix 3, pp. 91)

The MONA project (Mennesket og naturarven – Man and Nature Heritage): MONA is a national project within the Norwegian Nature Inspectorate (Statens Naturoppsyn – SNO) with the aim to highlight the local cultural history in connection to biodiversity and its impact on today's nature values. SNO has collected data on TK (farming practices, fishing, hunting, etc.). This has shown that local involvement and a bottom-up perspective are very important for good management of protected areas, which in most cases have a rich biocultural heritage and a biodiversity developed by traditional practices. The MONA project has been collecting TK from old people. Interviews are made, if possible outdoors, about how local knowledge holders have used land and resources in older times. SNO values this knowledge and it is used in management of protected areas and for nature interpretation by local guides for visitors. Films have been made and old photos collected to show the role of humans and customary sustainable use in creating and safeguarding today's natural values. SNO tries to check the quality of the information with the informants as well as crosscheck with literature and scientific knowledge. After this the TK is used in management plans, school visits, courses, apps, guided tours, etc. Management work is being done together with farmers. Biodiversity such as diversity of pollinators has started to increase after introducing the TK in practice. An example given was a course given by SNO in Mørkridsdalen for park managers in coppicing of elm trees and how to restore cultural elm trees that have been coppiced through history. Local elders showed how the coppice had been done previously. SNO has also had school projects in which pupils get outdoor education in the protected area and contribute to the management.

Q & A: Outdoor training was viewed as very positive by the audience. If decision makers dealing with biodiversity could be guided in the areas out in nature, they would possibly make better decisions. This could be a good recommendation to IPBES: To take the different task force and expert group people out in nature for their meetings.

It was stressed that in cases like this, it is important to connect with the community, with actors in the local economic development, and with schools, in order to create a local ownership of the conservation landscape and responsibility for conservation.

Summer farms and semi-natural grasslands in the innerpart of the valley in Mørkridsdalen. Photo: Liv Byrkjeland/SNO.

Restauration of pollarded elm trees in Mørkridsdalen in Norway in order to revitalise the biodiversity in cultural landscape, that has been made redundant by the modern agricultural policy during the past few decades. This is quite a harsh treatment of these trees, but it is necessary in order to make them useful for leaf fodder harvesting again. The treatment also contributes to the trees life span and biodiversity. Photo: Liv Byrkjeland/SNO.

SESSION IV: Full and effective participation of holders of indigenous and local knowledge: For what purpose, for whom, and how can it be achieved?

***Expected outcome*: Perspectives on how a fair and participatory process that is credible, transparent and useful for all should be designed in terms of ensuring inclusion of indigenous and local knowledge, for a Nordic IPBES**

This session took place in working groups with the different actors, as they perceived themselves (Saami, fishers, small holder farmers, Inuits, etc) Based on the cases presented in the earlier session, where local knowledge was recognized and respected and used for informed policy and decision-making, the groups discussed **what are the keys for success** in participatory processes where indigenous and local knowledge are mobilized and recognized and being listened to in general, and **for IPBES to learn from in particular**?

Questions to the groups:

1. From your experiences and perspectives, how could the full Nordic assessment be useful, based on the assumption that it aims at including indigenous and local knowledge perspectives?
2. And, how can an assessment gain from indigenous and local knowledge?
3. What would be the opportunities and risks for holders of indigenous and local knowledge take part in an IPBES process?
4. What are the indigenous peoples and local communities' perspective of best practise for full and effective participation?

The group discussions was presented in the morning day 2

Evening gathering

The participants watched the film from MONA-project, Norway: "*Man and the Nature Heritage*" (*Mennesket og naturarven*). The film was very informative and inspiring and was given a lot of positive feedback from the participants. Similar films in other areas could be very useful.

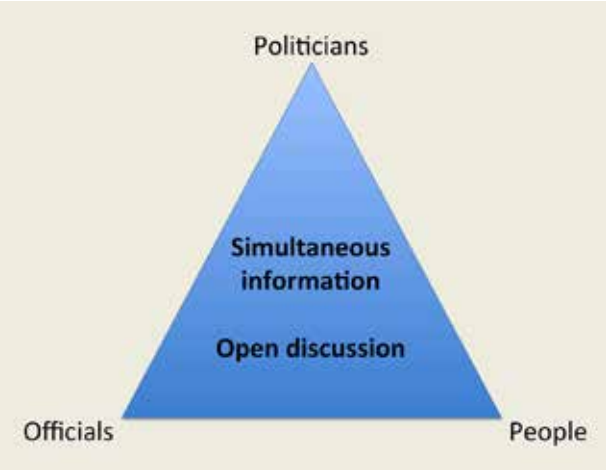
Day 2

Reports from working groups in session IV: Full and effective participation of holders of indigenous and local knowledge: For what purpose, for whom, and how can it be achieved?

Group 1

Keys for success:

- *In the beginning:*
  - Researchers/authorities need locals and vice versa.
  - Complexity of people´s lives: some issues take priority over others. This is important to note.
  - (Q1.) Local community have problems - how can we contact the right researchers to help us and how do we know who to trust? If we have important information, how do we communicate information to others?
- *Be nice!* People in general usually want to be part of the decision-making process. Authorities want to have better contacts. An essential part of how to communicate (two-way) with others is: respect and sincerity. People can feel it - if you are lying, it always comes back to you (Q4).
- *"Holy trinity":* Politicians (*politiker*), officials (*tjänstemän*) and the people (*folket*) in a fair and equal dialogue and at the same stage – simultaneous information and an open discussion (*information samtidigt,* öppen *discussion*) in the planning process



- *Methods, and who:* Importance of interviewing different groups – methodological considerations. Conflicts within the community – not all community members have the same views – neighbours have different ideas about managing resources. Who can represent local knowledge? Look for those key informants who are "awake". Participants need to be well selected and be able to trust what will happen with the outcome (the PISUNA project example).
- *Ethical issues* between community member and researchers.
  A) An ethical responsibility to report back to communities, and get corrected information.
  B). Community members need to be part of the decision making process – actually able to affect change (Q4).
- *Political landscape*. (Q2): Inherent conflict when people who managed resources themselves for a long time all of a sudden get pushed aside by the central authorities. Top down politics when it comes to the management of local resources may lead to a lack of understanding from the local community and irresponsible behaviours.
- *Risks* (Q3.): Information may be stolen, or used outside of context. Recognition of local knowledge holders who do the work (authors in school books). (Use of photos not credited is a bad example) Risk of more restrictions (fishing restrictions, local knowledge holders may be afraid to send in letters to stop fishing for certain seasons – mistrust of decision makers.)

Group 2

Extensive notes in appendix 1, p 61–70.

Keys for success:

- Concerning decision-making: It is important to take a **broad view** when considering how people are affected.
- When inviting stakeholders to a dialogue: it is important to invite a broad range of people and organisations.
- In the decision making process it is important to include a **broad range of values** (monetary, non-monetary) in the range of values that form the basis for decision making. There is an inherent problem to get the **values** into the process, e.g. environmental impact assessments. Hard to get values "how are people affected", into the process and how can these values get a higher status to make them more equal. Time aspect (**long term and short term values**) is important is important to be aware of and take into account.
- For decision making processes: learn from examples with different processes and outcomes (both the **best case and worst case** examples).
- **Public hearing processes**: consider HOW to include different stakeholders in the process.
- Consider **different methods for dialogue** in the (pre) decision making process, e.g. dialogues in the

field between local and indigenous communities, decision makers at different levels etc.
- **Lobbying** – can this be a necessary "tool" to distribute knowledge?
- **"Get them when they are young"**. Involvement/ teaching of children and youths is important.

Group 3

Keys for success:
- We talked about the importance of documentation, and in particular to transfer the knowledge between generations and between holders of knowledge and others to be used in practice. Success in ensuring ILK impact in processes and decisions depends on communities' genuine feeling that they are invited and engaged. Someone has to recognize the value of the knowledge, in order to motivate it to be brought forward.
- Documenting knowledge is so important, and so much is on its way to get lost. However, it is even more important to keep on using it, as it can be difficult to reconstruct from written sources. But we also found examples where you can learn from other communities holding the same knowledge, in order to bring it back. Also positive examples of institutionalized revitalization, such as Eldrimner (National Centre for Food Handicraft) in Jämtland, were mentioned.
- Being allowed to protest is another factor that can motivate communities to stand up and unite on a common issue, to engage them and strengthen their sense of unity. Cases from Brazil were given as an example, where communities rise and engage in activism to ensure that environmental impact assessments of large projects take into account all issues and ensures proper mitigation measures. Some from Brazil had said it also strengthened their mental wellbeing to stand together.

Traditional Norwegian dairy products served at a summer farm. Photo: Håkan Tunón.

- How laws are applied can change everything; Law and jurisdiction are external factors that can make it more difficult to transfer the knowledge and implement it. Legislation can be much worse than many other factors.
- Also when knowledge is present, and directly asked for, it is not certain that the decision-makers will take it into account; the negotiations of EBSA[6] under the CBD was taken as an example, where the input was really asked for, but interventions by politicians made it impossible to go through and have it presented in the reports to be discussed at the international negotiations in the CBD body SBSTTA[7].
- In dealing with climate change and also other environmental change it can be a real strength to have the local knowledge, as a start for adaptation, but it can also mean in the worst case that the traditional knowledge is becoming useless. When climate is becoming unpredictable the knowledge may not be possible to apply any more.
- Why provide knowledge? When there is a possibility of direct influence, it is valid. Sharing knowledge is a balance between the benefits of openness and the risk of conflicts. Make sure conflicts of interests don't get in the way of knowledge exchange, so one can make better-informed decisions.
- "We know everything, but policy makers do not always bother about our knowledge". Traditional knowledge includes rights, and policy makers are afraid of accepting that.
- Action research, where local people are involved in the research, could be relevant. It is a good way to work and gives the opportunity for direct communication of results to the local community.

Group 4

- It is not clear how the IPBES assessments will be done. What is the level of detail? Will it include new research or be based on existing information? According to the Nordic IPBES scoping project leader, it will most likely be a synthesis of existing data. If so, there may be little direct interaction with knowledge holders, and if so questions about field research methodology would be of limited relevance.
- One key issue is representation of ILK holders at all levels of the synthesis process – on equal terms with

6 Ecologically or Biologically Significant Marine Areas
7 Subsidiary Body of Scientific, Technical and Technological Advice

Grazing of semi-natural grasslands gives rise of both biodiversity (e.g. moonwort, *Botrychium lunaria*) and local food stuff (=rural development for the local community), but it also contributes to the conservation and sustainable use of local breeds (a Swedish mountain cow). Political decisions on agricultural subsidiaries or the closing of a local school might be the tipping point that forces the local farmer to close down and the pastures are used as spruce plantations instead. Photos: Håkan Tunón.

participants from the scientific community. Trusted and qualified representatives should be identified through relevant organisations or networks. Equal terms include payment for realistic amounts of working time.

- Involvement of ILK representatives should extend to all aspects of synthesis, including "scientific" aspects such as biodiversity status and trends. Conflicting assessments should be clearly reflected in the text.
- ILK should be approached primarily as a valuable resource for future use, not from a historical perspective.
- If possible, the assessment should not be a one-off publication, but establish an ongoing monitoring process and a dynamic database.
- Ways should be found to use and disseminate results, including to the general public and as feedback to ILK-holder communities.
- One important sector lacking representation in this workshop is *traditional forestry*.

Also if we look at what has been discussed here, forestry is a missing aspect Traditional forestry is very marginalized today.

To include the local people from the start and listen, discuss and build trust in the planning and development of the project is a necessary step to succeed. Norwegian Nature Inspectorate is developing a management plan together with a local farmer. Photo: Håkan Tunón.

Group 5

Key factors for success:

- Start by telling how the collection of knowledge should be used!
- listen to what the local people have to say.
- create trust – trust is important.
- include people from the start, already in the planning process.

It is important to recognise that information can be misused by third parties, e.g. in politics. Take precautions to avoid the risk of being misquoted!

Answers from group 5 on each specific question:

1. From your experiences and perspectives, how could the full Nordic assessment be useful based on the assumption that it aims at including indigenous and local knowledge perspectives?

It would be strange if it is not be included! However, there is mistrust from the local communities to join yet another initiative with unclear relevance!

2. And, how can an assessment gain from indigenous and local knowledge?

The governments would like to be role models, they are looking for good examples to highlight – and there aren't that many! To get new ones, the indigenous peoples and local communities have to be included!

3. What would be the opportunities and risks for holders of indigenous and local knowledge take part in an IPBES process?

- There is a risk that people might lose control of the knowledge.
- In the final report you might see something that you dislike, but it may be mentioned that you have taken part and it will appear as if all is agreed by you.

4. What are the indigenous peoples' and local communities' perspective of best practise for full and effective participation?

The Laponia process and the Laponia tjuottjudus way of land management with a Saami majority is a good example, however for each good example there are many bad ones!

From the Faroe Islands some decisions are made at first and then tried and changed based on the practical experiences! The politicians tend to listen to the locals and the locals know that this is the case! (Action research and adaptive management)

General reflections from participants regarding how to understand the IPBES assessment process, and make it useful for holders of ILK:

The whole idea of the IPBES is based on a top down

perspective – "we are asked to give information!" "We are welcomed to give input. But when do the local communities have the initiative?"

- The outcome of the initiative will be based on from where the perspective comes.
- Do not give false expectations! People have limited time and efforts.
- It is important to stress that individuals should be included, but on the other hand consultations are often used as a means to avoid properly including the stakeholder organizations.
- Is it possible to produce an assessment of IPLC's involvement in different TEK-projects? A meta analysis?
- Environmental, cultural and social impact assessment – what about knowledge impact assessment?

Presentation of the project "«Nordic Resource Management»: Promoting Economic Survival through the Increased Use of Citizen Knowledge"

Johanna Roto, Finland *presented a powerpoint based on a written contribution from Nette Levermann and Finn Danielsen*

(see further presentation in PDF-file, appendix 3, pp. 93)

Indigenous people's and local residents' insights into natural resources and the environment are rarely used in a quantitative and systematic way in the political process. In the past, Nordic authorities and researchers have, in collaboration with local residents, developed tools that can 'open doors' to indigenous peoples and local resident's knowledge. The new tools are aimed at enabling indigenous peoples and local residents who utilize nature and natural resources to collect and communicate their knowledge. When indigenous and local knowledge is recorded and communicated in a systematic manner, based on observations made throughout the year, this knowledge has a greater chance of being used, both in local and national decision-making.

Hunters, fishermen and others from the local community observe things all the time and community based monitoring schemes are important ways of acquiring a large amount of valuable data.

A new Political Priority Initiative of the Nordic Council of Ministers called "Nordic Resource Management" is initiating a common Nordic – Arctic cooperation to enhance democratic citizen participation in decision-making regarding the use of natural resources. The project will further develop the new tools into standard templates, test them in Finland, Norway and South Greenland, and build capacity and raise awareness on the use of citizen knowledge among government authorities and civil society organizations. Institutions from all of the Arctic countries participate in the new project, which is funded with DKK 2 million during 2015–2017. Increased use of citizen knowledge has potential to help small communities survive within environmentally sustainable limits. Further information: Nette Levermann nele@nanoq.gl

Session IV. Perspectives from Indigenous and local knowledge on central questions for the Scoping of a Nordic IPBES Assessment.

Expected outcome: Explore how a fair and participatory process that is credible, transparent and useful for all could be applied on central questions of the scoping for a Nordic IPBES assessment. The session will also provide feed-back to questions dealt with in the Nordic IPBES scoping study

The session was held as a plenary discussion with focus on what values matter regarding biodiversity and ecosystem services and functions, and how to make values from ILK recognized and respected in processes and decision-making.

Generally, it was seen as a problem to get information about values into processes, and make visible how the indigenous peoples and the local people are affected. How can one create a higher status of indigenous peoples and local communities (IPLCs) in a process? What kinds of values are important to bring in? How can IPLCs' views be more prioritized? Today, it is always the monetary value that is most valued.

Time aspects are important. It is necessary to understand peoples' values. Whose values count is very important – it is vital to see local people as experts. Examples were given of projects where researchers stay

with local Saami communities and work a long time with them. This is necessary in order for scientists to understand the realities. A case study is currently going on in Northern Sweden, and preliminary results might be available soon.

We have to emphasize the importance of giving more power to other values than monetary values in decision making. Economy is an important value, but social and cultural values matter too.

Power unbalance in processes such as this scoping of a Nordic IPBES

Building trust is important for genuine involvement of people. That takes time.

An example is the custom of inviting people to hearings. There is always a lot of engagement to participate, but it is almost never a success in terms of influence. The government just have to have hearings due to democracy principles, but they take their decisions anyway.

Reaching people is difficult, though. Different groups need different kinds of communication. For example, there are many people that do not use e-mail so much, but they read their letters. They are fed up and do not read e-messages. So it is good to send paper letters in the post in order to reach people.

***Q & A*: Reflections and clarifications about IPBES and participation**

Question: How will this assessment be done? Despite the project leader of the Nordic scoping being present in our room, we have still not got so much clarity.

Answer: IPBES will most probably not involve much direct interactions. It will primarily be an exercise building on existing material. However, the present scoping study may propose a series of dialogue workshops to document oral indigenous and local knowledge, including local proposals to protect, sustainably use or restore biodiversity, ecosystem functions and ecosystem services, such as governance/institutional arrangements or management options.

Question: But if built on earlier conclusions, would not local knowledge then be of limited relevance?

Here it was commented that everything depends on how the process is being organized by participation in different levels – see previous question. If it is built on synthesis of existing information, those who will do the synthesising will always be in power.

If not all can be invited to participate, would it be an option to elect trusted individuals? How? On this it was commented that it might be possible to make use of trusted individuals; this can work if there is perceived

An equal discussion between Liv Byrkjeland (Norwegian Nature Inspectorate/Norwegian Environment Agency), and Adam Hansen (the Qaasuitsup Commune & the PISUNA-project). Photo: Håkan Tunón.

to be legitimacy. However, someone reflected, stakeholder groups have many times been overlooked. You cannot just go and have a mandate. Just handpicked individuals are often selected, someone commented, and this has been a problem too many times.

Another comment was that participation must be on equal terms. In processes, scientists are generally paid for their work, but not so holders of knowledge. Local observations and scientific observations might differ, and it is very important to get the perspectives of both sides.

It was commented that focus for IPBES might be more on the use of the produced assessment and information than on documentation and participation. It would be valid if it would not become a one-off filed assessment, but rather an on-going and evolving database, and that information could be continuously disseminated and used.

How could the work in the Nordic countries create a good format for the global work? Can we decide upon a few themes that are important in the Nordic context, e.g. mine prospecting, etc. and develop them in the IPBES-structure? Pick key environmental issues connected with ILK and develop them? Pick out some problems that are difficult for us in the Nordic countries. 6–10 themes. Study similarities and differences.

Our available time is a limited aspect, and one has to be aware of where it is meaningful to put in efforts. We shouldn't use our time when we don't have decision power. What kind of self-determination do we have in the process? One has to be aware of what is the level of independency. There has been much misuse of people's efforts. The abstracts goals, such as those who are described here, are difficult; we do not reach outside this. We would like to have more concrete goals. It was felt in the group that

it is important to combine this scientific approach with a more practical one and highlight good practices.

IPBES appears to have a top down perspective. We are asked to give input. How could we as locals get the initiative? We have to have possibilities to invite. An outcome of a process is very dependent on from what side the initiative comes. Is there a way to strengthen the process so the initiative can come for another side, from bottom up?

However, it was also commented that IPBES is an opportunity here and now. It is now you have the chance to contribute. It should be seen as an option and not a problem. It is now someone is listening and I will at least do my best together with colleagues to contribute, and see it as a possibility to influence.

Outreach, capacity building and ideas beyond IPBES assessements for strengthening knowledge holders' priorities.

- Capacity building could be organized, such as courses on collecting and organizing knowledge. Selected focus groups would build knowledge about IPBES and contribute to IPBES.
- Other kinds of assessments, such as social impact assessments and knowledge impact assessments can be as important for ILK as ecosystem assessments.
- Maybe we as ILK holders could start an institute, a non-profit institute to collect our own research project, and invite policy makers to participate. This group could be a starting point for such an institute.
- Don't forget the bad examples! They are useful for learning how not to do things.
- Are we really so far ahead that we can start planning?
- Norsk seterkultur [the Norwegian mountain pastoralists' association] believes that for instance agriculture is first and foremost a matter of sustainable food production and we would like to see that this should be kept as the main focus and it is important not to intellectualize everything.
- Another relevant issue is: where are the politicians? The power of decision lies with the politicians. It is not just a matter for governmental agencies and administration.

Original languages are important carrier of knowledge and should be used.

We should use the language of the knowledge holders, and not English. Language is carrying so many things. In a full assessment, we should be able to hold these kinds of workshops with interpretation, even if we cannot do that now. It was explained from the project group that they are aware of the need to do the ILK-part in local languages, but it was stressed that it was not possible to have several workshops with interpretation in this scoping study.

Reflections on Saami self-determination related to the process of Nordic scoping for IPBES.

Where is the Saami process in this, the Saami traditional knowledge? The Saami people and their Parliaments. Maybe we should stop here a while and reflect on what part we can play in this context? The Saami people being self-determined and, being a node in itself, how does IPBES ILK process benefit our societies? We have the Saami traditional knowledge project *Árbediehtu*, centered at Saami University College in

Grazing of outlying mountain pastures is " first and foremost a matter of sustainable food production", biodiversity and cultural values to outsiders are just positive side effects. Photo: Håkan Tunón.

Guovdageaindu, Norway (http://www.arbediehtu.no) Could it be linked up to Naptek in this issue with the aim to ensure more Saami control? How are we joining as Saami, are we just representing ourselves as individuals? Maybe separate? The Saami might be interested in running part of the project themselves, but the challenge might be the capacity to do this in the short time given. The good thing is that the Saami Parliament in Sweden is well represented, also by the president himself.

About the Nordic scoping questionnaire

- • The suggested questionnaire is relevant, however it will take weeks to answer in a serious way. Therefore, it will most likely end up in the paper bin. I suspect that there are only a very limited number of people with time and capacity to answer the questions.
- • An interesting question is who owns the process? The people behind the project and the questionnaire are the ones dictating the direction, and is it the right direction? Someone else is designing the project, we have very little influence. We need to have something to contribute that could benefit ourselves.
- • This questionnaire is in English, and it is also in a very academic language, and this will make it more problematic to get people involved in the process, especially people who have not attended this workshop. In what way do you want us to contribute? Should we spread the word?

Question: How can the ILK part influence the Nordic Scoping Study? And what's the hurry?

Answer: We need to get our Nordic assessment into the subregional assessment of Western Europe) to get more weight! But it can also be included in other processes within IPBES or other context, but to submit it as a part in an official IPBES assessment will give extra credibility! The process is important and a good process does take time! One option is that we narrow the assessment down to a few themes. There are pros and cons.

Question: What will happen to the questionnaire? Will it be changed and simplified in a more user friendly way?

Answer: Probably not. It has already been created in a long process. Information will be included in a draft-scoping document that will be sent out. All information will be used to make a draft Nordic scoping documents. However, the project group in the ILK scoping study will also prepare an ILK questionnaire[8], which we will send out as soon as we can.

Asta Balto reflects over the lack of involvement of Saami representatives in the initial phases of the planning of a Scoping Study of a Nordic IPBES-assessment. There is a need for a joint moment of reflection regarding how the Saami community in Finland, Norway and Sweden wants to be involved in a Nordic IPBES-assessment and under what conditions. Photo: Håkan Tunón.

HOW can participation be achieved?

- In some cases there may be a need for monetary **compensation** in order to be able to participate (to hire assistant on farm, in the field etc).
- **Transparency**. What is the purpose of the project/ information gathering? How is this knowledge intended to be used? What was the outcome of the project? The feeling of sharing is important.
- **Ethics**. Knowledge providers and recipients should be equal partners in the dialogue. *Validation* of the knowledge provided - has the information given been recorded correctly? Guidelines for free, prior and informed consent should be followed.
- What **process of inclusion** is being used?
- Recognize that the information providers are the experts in question. Co-authorship should be the rule. **Involve** different knowledge providers in the research at an early stage, for example when setting the objectives of the project.

8 Appendix 2 of the Nordic ILK-IPBES report.

Appendix 1 to Annex 1

Full and effective participation of holders of indigenous and local knowledge: For what purpose, for whom, and how can it be achieved?

Expected outcome: Perspectives on how a fair and participatory process that is credible, transparent and useful for all should be designed in terms of ensuring inclusion of indigenous and local knowledge, for a Nordic IPBES assessment

Notes from Group 2

The inputs into the dialogue have been re-grouped to fit under common headings, but they are otherwise as noted from the group work by the secretary (Marie Kvarnström). Names have been removed in accordance with the Chatham House rules.

Compensation for participation of local knowledge holders

- In the PISUNA project in Greenland, 1/3 of the local communities give regular info, 1/3 you have to push, 1/3 does not like to participate. We have tried to give them compensation, but it doesn't work. Their mentality is one of looking for immediate returns. One doesn't think that "my grandson has to be able to eat the same food". Our hunters think in the here and now, with the stomach. Some of our target people reacted when we started to compensate people. The last third are still not responding. If what we say today doesn't give a return tomorrow – forget about it. Fishermen, hunters in some parts are very self-reliant, they don't want anyone to interfere.
- It may depend on the context. The cultural landscape in Norway is very different from hunting in Greenland. People don't risk losing anything talking about elm trees and how they were coppiced. They are very glad to participate. In fact, we hear comments like: "You don't know how important this is for me."
- Paying farmers for the time they participate is crucial in participatory research. Young people rely on an income and every hour needs to be paid. In my project the researchers and farmers have had the same level of salary. It is different for older, retired people. They have their pension and may find it stimulating to participate anyway. However, it was pointed out that academic documentation and registration of ILK may not be as interesting for the local people, but if we can show relevant processes leading to economical, social and ecological development the interest will increase. A Nordic project could be developed as a model study choosing for instance a traditional fishing village or a cattle production on semi-natural grasslands in each country or region. LK could be registered and analysed and a development plan using LK in new products could be worked out together with an analysis of the effect on biodiversity and ecosystem services. The goal – besides knowledge itself – could be to create long-term funding and to realize the plan through some kind of action research. This could be a model for how to involve indigenous and local people in similar processes with a more lasting compensation than just paying for hours used.
- In our case they are interested in participating without compensation.
- It needs to be decided on a case-by-case basis.
- If people are interested in my farm and what I do, there is a limit to how much I can participate in my role as farmer. If I get paid for it I can pay someone to do my work on the farm, which gives me time to participate.
- In our area people get paid for management of the land. We also hire them.

Transparency

Total transparency in a process is very crucial. One needs to know:

- what is expected of you,
- what the outcome will be,
- who will get the information you give,
- how the information will be used.

Participation must be on an equal basis

- The ethical view is really important. Free and Prior Informed Consent is really important. It is important that local representatives are really equal in the dialogue. The dialogue with the local community should not be just an alibi.
- In the Swedish Saami Parliament, guidelines for including Saami traditional knowledge, árbediehtu, have been produced. It is important to check those guidelines and use them. Sharing information is important. We need guidelines how to get people involved, and guidelines how to work with Free, Prior Informed Consent.
- The TK holders must be able to check if the knowledge is translated correctly. Sometimes it feels like we participate in a research project and give the researchers a lot, but we need to feel we get something

back. With the history of past exploitation, this is especially important.

- If something is translated wrongly, it can give a completely different outcome. An example is the name of a village, which was wrongly noted by a researcher in a project in Greenland recently. If we had not noticed this, studies would have been done in a wholly different part of Greenland. Extra fact checking is necessary by the local knowledge holders.
- The relationship between researchers and local knowledge holders should be a partnership from beginning to end.
- The providers of traditional knowledge are the experts, not the researchers. The competence lies with the providers. Working on an equal level also gives them higher status.
- Everyone involved in participatory research should be included as co-writer.
- Research involving local knowledge: when I am contacted as a farmer I want to know the purpose of the research. I need to be able to be part of designing the research process and formulate the research question. As a researcher, I find it difficult to deal with the reductionistic way scientific knowledge is structured. The research has to be re-designed, adjusted to include local knowledge. This cannot be done without including the knowledge holder into the design process from the beginning.
- Maybe we need a new sort of label for referring to local knowledge in a scientific paper, like "personal information" or "local information".
- Sometimes the concept Free Prior Informed Consent seems to become a barrier against including local values in a process – it becomes very complex.

The voice from Indigenous and local communities needs to be strengthened

- It is key to strengthen the voice from local communities, to make it visible. If you look at indigenous communities, it is a minority voice, which is often not heard, not as strong as the majority voice.
- There is a new Nature diversity Act in Norway, Naturmangfaldloven, which states that local knowledge needs to be taken into account in nature conservation.
- The presentation on the impact of mining on local communities in Northern Sweden is very relevant for many communities in Greenland. There are a lot of potential mining projects in Greenland, most are just in their early stage, prospecting, exploring and mining for alumina, zinc, copper, coal, ruby, iron, rare earth minerals, uranium, diamonds, etc. For example reindeer hunters and muskox hunters and sheep farmers may be very negatively affected by mining and prospecting. The Department of Environment needs to include a local perspective in the impact assessment.

Getting non-monetary values into decision-making

- In Norway there is at present a mining project where waste might be deposited in one of the fjords. They have looked at it from different angles, but there are still no tools to bring in other values than the monetary ones. But it is not only monetary values that are important, but also cultural values etc. One also needs to look at long term versus short-term impacts, for instance incomes from mining vs. damage to ecosystem services. At least these things are now discussed in IPBES.
- If we could force more values to be heard in the process and put pressure on national policy makers. Research at Linköping University is comparing the recycling industry and the mining companies. The mining companies get huge subsidies - the recycling industry cannot compare at all. This distorts the possibilities to work for sustainability. We need to get other values into assessments, and we need to get them into policy making.

Is the value of a traditional Christmas hare mostly monetary or non-monetary to people in a local community? Photo: Håkan Tunón.

Hay harvesting in an outdoor museum. How do we get the children participatin in issues related to local knowledge and the use on natural resources? Photo: Håkan Tunón.

- Together with the Environmental Impact Assessment, a cultural and social impact assessment needs to be done, and the impact assessment needs to come a lot earlier in the process.

Involving children

- It seems important to include children in schools in the work to document and integrate local knowledge. We haven't worked on that yet in our project. Young people in our hunters' schools could be involved. We have given hunters in the project Go pro-cameras to document biodiversity, but no instructions how to use them. They are disappointed when the animals they film appear like a little dot in the picture.
- Children can help us in this work. The children interviewed their grandparents. They help us, they write in the newspaper, continue to tell the story in different ways, get very enthusiastic.
- We need more projects with children. A lot of knowledge will disappear. My children are used to discussing with elderly people than other children are, but that is becoming more and more rare in society. It is important to see the value of this. Mining project: the knowledge of elders, hard when the knowledge is gone with the people when they die.

Resources needed for Indigenous and local involvement in decision-making

- A problem is that we really lack resources in the Swedish Saami parliament. We have only one full time politician, our chairman of the board. There is a constant lack of resources and we do a lot of voluntary work.

  The national goal in Sweden is to double the mining activities to 2020 and triple them to 2030. Then the government needs to help local communities with more resources to cope with the situation. Saami communities live more and more just here and now, trying to cope, one cannot ignore reality. We need to see informants as experts. Co-writing research reports, try to work with people with TK to be co-writers.
- The scale is important. It is when you stand up against a national mineral policy that it gets tough.
- The most severe threat is perhaps the goal of doubling the mining – the national policy.

Who is invited in the dialogue?

- Huge problem that in Sweden the people outside the Sameby (local reindeer herding community) are excluded. In the mining policy, to be broad in your view on how people are affected you need to be generous.
- If you are not indigenous it is even harder to be taken into account. If someone working in LRF (the national farmers' association in Sweden) is included it is then interpreted by decision-makers as if all farmers have been involved.
- "Keystone" knowledge holders, small-scale fishers,

farmers can be hard to find. They must be found through local, informal networks.

Politicians and the need for lobbying

- What do politicians know about Saami people, and local people? It is important to increase their knowledge.
- You need good lobbyists to contact politicians.
- We could work more on lobbying, but we don't have resources at the moment.
- Playing the game is also finding out how to get into the process early. Do we have good examples? Snowchange is an example of a successful way of working.
- Sometimes "hearings" are only formalities; hunters don't want to be part. We have done some lobbying work. But in our job description we are not allowed to contact politicians. We do some off the record lobbying.

Bringing decision makers to the land

- We should get the decision makers out into the landscape. We managed to do this in our area. We walked together for two days and it was very good. It gave the decision makers a completely new understanding. But we need resources for this.

Sami duodji – Saami handicraft – the use of local natural resources, like reindeer antlers, skin and pelt, birch wood and roots of Norwegian spruce and birch. Photo: Håkan Tunón.

Results from group discussion 2.

Session VI. Who are the holders of relevant knowledge for ILK in Nordic countries? Institutions, networks and roster of experts. How can they interact with IPBES, and one another?

Expected outcomes: An extended list of holders of relevant knowledge, and proposals for opportunities and means for them to interact and strengthen one another, from their diverse perspectives.

Questions:

1) List expertise and knowledge needed to carry out the assessment in your view, in terms of scientific disciplines, policy and practise competences, including governance at various levels and Indigenous and local knowledge.
2) Which are the relevant groups possessing indigenous and local knowledge in your country?
3) List experts, networks and competences, and (if you know) whether they are willing to participate in a network and roster of experts for the full assessment. A nomination process will later take place for the full assessment.

Mostly unedited notes on relevant partners for a sub-regional IPBES-assessment in the Nordic countries:

Saami-group

Traditional knowledge holders

Nils Aslak Valkeapää: Literature, author, multiartist: His poems, texts and drawings mirror the sustainable way of Saami living.

Try finding several traditional knowledge holders, both recognized/established and other: t.ex. Greta Huuva, traditional food, Sune Enoksson (duodji, Saami handicrafts) + other duodji knowledge holders (maybe check Árbediehtu book for inspiration) Traditional yoiking knowledge holders and other knowledge holders

Complement these after dialogue with the Saami people, The Saami Parliament and several Saami organisations etc.

Maybe also check on-going process with the implementation of the UNESCO Convention for the safeguarding of the intangible cultural heritage: they have several categories, nodes etc. (Contact: Susanne Idivuoma, The Swedish Saami Parliament).

Sápmi (the Saami land) – a cultural landscape shaped from centuries by reindeer herding and other uses of biological resources. Photo: Håkan Tunón.

Institutions
Saami Council / Saamiráđđi
Postboks 162, N-9735 Kárášjohka/Karasjok
Norway (saamicouncil@saamicouncil.net)
The Saami Council is a voluntary Saami organization (a non–governmental organization), with Saami member organizations in Finland, Russia, Norway and Sweden.

The International Centre for Reindeer Husbandry (ICR), Guovdageaidnu, Norway http://reindeerherding.org/about-us

Ájtte: Swedish Mountain and Saami Museum, Jokkmokk
Sámi duodji, Jokkmokk
Samernas utbildningscentrum [Saami education centre], Jokkmokk
Sïjti Jarnge, Hattfjelldal, Norge
Saemien Sïjte, Snåsa, Norge
Check if there are other similar centres in Norway and Finland

Gaaltije (South Saami Institution in Sweden)
e-mail: administration@gaaltije.se
Arran Center, Tysfjord, Norway – lma@arran.no
Árbediehtu-project, Saami University College, 9520 Guodageaidu, Norway

Sámi allaskuvla / Saami University College,
Hánnoluohkká 45, NO-9520 Guovdageaidnu/
Kautokeino, Norga/Norge
Tel: +47 78 44 84 00
Faks/Fax: +47 78 44 84 02
e-mail: postmottak@samiskhs.no

Saami Parliaments in Finland, Sweden and Norway
Ask The Saami Parliaments to help to reach a broad aspect of the Saami people – use the parliament to invite/send material to several Saami organisations, representatives and politicians to ensure that no one is excluded. Make sure to connect/invite/send info to both the administrative part of and the political part of the Saami Parliament.

Saami youth organisations:
Saminuorra, SWE
E-mail: info@saminuorra.org
Föreningsgatan 8, (Box 57), 962 22 Jokkmokk
Ungdomsrådet/Youth section in Saami Parliament, SWE
Noereh - Norwegian Saami Youth organisation

Suoma Saami nuorat, Finland, Poste Restante, 99870 Inari suomasaminuorat@gmail.com

Saami museum, Inari, Finland (e.g. Päivi Magga and Eija Ojanlatva work with cultural heritage)
Thule institute, Oulu University, Finland

Reindeer herder's associations and other Saami organisations – to include all aspects of the Saami society and all knowledge holders

Seterbruker-gruppe (mountain pastoralists)

- Local and regional museums (needs to investigate to what degree they have relevant information! They will most likely also have information regarding fishing, hunting, forestry, local cultural heritage groups, etc.)
- Norsk håndverksregister (Norwegian register on handicrafts)
- Norsk etnologisk granskning (this is not people) (Norwegian ethnological survey)
- Norsk seterkultur (seterforening) (Norwegian mountain pastoralists' association)
- Sweden. «Skjærgårdsbønder» (farmers out in the archipelago or on islands only with boat transfer, active persons today have made a list of people, contact information along all the coastline of Sweden, they have manage to get funding for some meetings, etc. in order to identify what regulations that need to be changed.)
- Norsk gardsost (Norwegian farm cheese)
- Norsk bonde- og småbrukarlag (farmers' association)
- Sveriges småbrukere (association for small-scale farmers)
- Jeger og fiskeforening (associations for hunting and fishing)
- Norsk skogeierforening (bl.a. registrering av mangfold i skog)
- Landraseforeninger (associations for local breeds)
- Fjellstyresambandet (NO)
- Stølslag (NO)(bl.a. registrering storfe effekt biologisk mangfold, Fylkesmannens landbruk)
- Norsk kulturarv
- Fortidsminneforeningen (NO)
- Bygdekvinnelaget
- Febodbrukerne (Sverige)
- Vega (NO) – kunnskap om dunvær

Hvem skal være med?

- Jfr IPBES mye selvidentifikasjon, må selv komme frem, faren med i for stor grad å formalisere «hvem er en kunnskapsholder lokal kunnskap»

Sortering av gruppene?

- Hvem har kunnskap om biologisk mangfold osv

Diverse kommentarer

- Savner organisasjoner småskala fiskere (Norsk tradisjonsfisk) (small-scale, fishermen's association)
- Check Facebook
- Kartlegging av natur (NIN). Her er det ikke lagt inn tradisjonell kunnskap!

A summer farm in Härjedalen in Sweden with free ranging local cow breeds on semi-natural grasslands in the outlying lands of the mountains. Photo: Håkan Tunón.

- Må bruke review prosessen for å sjekke om utredningene har tatt med relevant tradisjonell kunnskap
- Har samlet (nasjonale) høringslister som kan brukes når utredninger skal kvalitetssikres

Greenland/Kingdom of Denmark group

ILK holders:

- KNAPK - Organisation of Hunters and Fishermen in Greenland
- SPS - De Samvirkende Fåreholderforeninger (the Cooperative Sheep Farmers' Associations) (GL)
- Avataq - Environmental association in Greenland
- Inuit Circumpolar Council - Greenland, with focus on input from the Greenland Delegation
- Tourist operators in Greenland
- Tourist operators in Faroe Islands
- National Museum of Greenland
- National Museum of Faroe Island (?)
- Language Institute of Greenland (Puju)
- Anda Hansen, documentarist

Scientific institutions:

Greenland Institute of Natural Resources

Ilisimatusarfik - University of Greenland

University of Copenhagen (DK)
Arctic Research Centre (DK)
DCE - Danish Centre for Environment and Energy
Fróðskaparsetur Føroya. University of Faroe Island

Governmental institutions:
Agricultural Consulting Services (GL) http://www.nunalerineq.gl/english/index-english.htm

- the individual Natural Resource Councils of the PISUNA project: http://pisuna.org/uk_contact.html
- Further details about Adam Hansen, the documentarist that has made films about e.g. whale hunting. He is with Tusaat - TV Aasiaat. His e-mail address is: tv.aasiaat@greennet.gl
- the Greenland Language Secretariat, where Carl Chr. Olsen (nickname Puju) is chairman: http://www.oqaasileriffik.gl/en
- Clarification: The network of Sheep farmers in Greenland also includes growers.

- We want to include Faroese sheep farmers and growers, but I didn't get any details of organisation/association names, except for "Bøndernes Sammenslutning" which doesn't give me any search hits.
- Also, Grindamannafelagið (Grindemændenes Forening, Pilot whale hunters association) with Olavur Sjúrðarberg should be on the list.
- The Faroese Fishermen Association (Færøernes Fiskeriforening) also should be on the list, but I didn't find useful search hits.
- Same with The Faroese Bird Association (Færøernes Fugleforening, FFFF).
- KANUKOKA (what Zenica is representing)
- Ministry of Fisheries, Hunting and Agriculture (GL) http://naalakkersuisut.gl/en/Naalakkersuisut/Departments/Fiskeri-Fangst-og-Landbrug
- Ministry of Nature, Environment and Justice (GL) http://naalakkersuisut.gl/en/Naalakkersuisut/Departments/Natur-Miljoe-og-Justitsomraadet
- Hereunder the Department of Nature, Energy and Climate http://naalakkersuisut.gl/en/Naalakkersuisut/Departments/Natur-Miljoe-og-Justitsomraadet/Natur_-Energi-og-Klimaafdelingen
- Fishing License Inspection (including hunting officers/ game keepers) (GL): http://dk.vintage.nanoq.gl/Emner/Erhverv/Erhvervsomraader/Fiskeri/Fiskerilicenskontrollen.aspx
- Faroe Islands Fisheries Inspection www.fve.fo
- Individual municipalities in Greenland and Faroe Islands
- Upernaviarsuk Experimental Farm (including Sheep herder school) (GL) http://www.nunalerineq.gl/english/uperna/index-uperna.htm
- KANUNUPE (National association of settlements) (GL) - I only found old news about them http://www.qaasuitsup.gl/da-DK/Om-kommunen/PisutNews/2013/9/17_09_2013_kanunupe
- Faroese settlement associations ("Høydesfælle" bygdeforening?) (couldn't find any links here either)

Pilot whales are being chased into shore. Photo: Nazuna Nakao.

Traditional pilot whale hunting on the Faroe Islands – a much questioned customary use of local biological resources. Photos: Tero Mustonen.

- Outside interest organisations that collects biodiversity relevant data and synthesize reports on different species:
- WWF Denmark (all kinds)
- IWC (whales)
- NAFO (fish)
- NEAFC (fish)
- NAMMCO (marine mammals)

Channels to dissemination of information and recruitment of knowledge holders:

- Radio
- News
- Interviews
- Programs with special focus
- Social media, Facebook primarily
- TV
- National news channels (KNR in Greenland, SVF in Faroe Islands)
- Network of different stakeholders
- Newspapers (?)

Capacity building:

- Making relevant journalists engaged in the project, invite them to an information workshop and make them ambassadors
- Covering costs of participation, compensation for time usage (already in use)
- Making focus groups of selected stakeholder groups (e.g. civil society, scientific, governmental) engaged in the project, invite to info workshops like above
- Courses in collection and organisation of knowledge for ILK holders
- Courses in fundraising for e.g. translation services or language courses targeted "biodiversity language"
- Support of translation services, e.g. interpreters (Between English, and Faroese, Greenlandic, maybe even Danish)
- Knowledge exchange workshops between different stakeholder groups, so that ILK initiatives becomes better connected/informed

Whale hunting in the waters around the Faero Islands in 1539 by Olaus Magnus.

A fishing community on Iceland. Photo: Tero Mustonen.

One last idea:
To use experiences, tools and methods from modern Crowdsourcing/Crowdfunding initiatives to learn how to engage with individual users with state-of-the-art multimedia/digital platforms and methods. They have a lot of experience with campaigns and events to engage with users.

Denmark:
The situation in Denmark is special in that we don´t have much LK left and what we may have is mixed with scientific knowledge that may be 200 years old. It is difficult to find a farmer who did not attend a highschool or had other kinds of agricultural studies. Most LK is registered in books and surveys.

- Local museums and their working groups
- Local historic archives
- Landbohistorisk selskab (Danish Society of Agricultural History)
- Societies working in protection of genetic cultural heritage, animals and plants
- Garden societies
- National museum, department of etnology
- Agricultural Museum, Gl. Estrup
- Jagt- og Skovbrugsmuseum (Hunting and forestry)
- Danish Nature Agency
- Small fishing villages and their users – some of them have been studied

Icelandic reflections

1. Need to know relevant stakeholders and the political history of the place and human relationship with the natural resource, e.g. is it sacred, is it a newly-used species, etc. Need variety of social scientists: geographers, anthropologists, economists, sociologists. Need also perhaps community leaders who aren´t necessarily resource users themselves.
2. Farmers, fishers, bird hunters and egg collectors, seal hunters
3. Associations
   - The Farmers Association of Iceland, Eiríkur Blöndal, ebl@bondi.is -- this is also an umbrella association who has connections to other resource user groups listed below as well as many subgroups of different kinds of farmers, so you could use them as a general contact point.
   - Egg collector Association – (félag eggjaframleiðenda), hildur@bondi.is
   - Forest association- Jóhann Gísli Jóhannsson, breidavad@emax.is
   - National Association of Small Boat Owners, Halldór Ármannsson, halldor@smabatar.is
   - North Atlantic Salmon Fund, Orri Vigfússon, nasf@vortex.is
   - This family operates a tourism service to a little island where they also collect seabird eggs and small-scale fish, they are a lovely family that I often work with – drangey@fjolnet.is

- This family operates a large eidar down operation-- hafnir@simnet.is

Puffins flying to Sea. Puffins are an asset both for tourism and food. Photo: Tero Mustonen.

Additional reflections from Elmer Topp-Jørgensen:
I also still want you to continue to reflect upon the some of the more concrete questions for the ILK-participation:

1.List expertise and knowledge needed to carry out the assessment in your view, in terms of scientific disciplines, policy and practise competences, including governance at various levels and Indigenous and local knowledge.

- I think it is important to regard this as a process towards full integration of ILK in future assessments. We need to develop an organisation and information capture mechanisms that ensure the desired geographical, and thematic coverage for the assessment (and this is not an easy task). I therefore hope that we see this first assessment as a learning process and a move towards full integration, otherwise it will be easy to disregard assessors.
- • While conventional scientific activities are excellent for studying many aspects of the natural environment, it also has limitations in thematic coverage and spatial and temporal scales. For a full assessment it is therefore important to combine the different knowledge sources (e.g. conventional science, traditional knowledge (e.g. ways of harvesting/protecting, phenology, ecological relationships, etc.), local perceptions of status and trends of resources/species, local observations with some level of data capture), using the individual strengths in relation to the objective of the different sections of the assessment, and identify exactly how each knowledge source can contribute to the different sections.

2. Which are the relevant groups possessing indigenous and local knowledge in your country?

- Indigenous peoples and local communities. In Greenland, full time hunters/fishers (organized in KNAPK), spare time hunters/fishers (organized in TPAK), amateur naturalists. Also PISUNA, a project implementing local based monitoring of selected utilized resources and threats. ICC Greenland could potentially play a role in coordinating efforts (?).
- In Denmark, numerous environmental NGOs, hunter organisation, fishing organisations, citizen science portals with observations.

3. List experts, networks and competences, and (if you know) whether they are willing to participate in a network and roster of experts for the full assessment. A nomination process will later take place for the full assessment.

- Arctic Council's Circumpolar Biodiversity Monitoring Programme also includes a community based monitoring component.
- Finn Danielsen and the Arctic local based monitoring network that he is working with.
- And I would like to add: What examples or case reports can inspire governmental agencies to respect the role of ILK in their work and in society as a whole?
- E.g Tarfala Research Station (University of Stockholm), who is developing close research and monitoring cooperation with the local Saami community. This is one of many station in a an arctic research station network (INTERACT) that works closely with local communities and in the future we hope the be able to develop local monitoring strategies that provide all relevant information to local communities facilitating adaptation to climate change by combining information from different knowledge sources.

Appendix 2

Nordic Dialogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment

1-2 June 2015
Odalgården, Uppsala, Sweden
Version 2015-05-29

Background

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) was established in 2012 to strengthen the science-policy interface for biodiversity and ecosystem services, for the conservation and sustainable use of biodiversity, long-term human wellbeing and sustainable development. IPBES aims at create policy tools and methodologies for governance of biodiversity and ecosystem services while securing peoples' benefits from them.

IPBES has four main functions: knowledge generation; assessments of various geographic and thematic scope; identify policy support tools; addressing identified capacity building needs and catalysing financial support. IPBES now counts 123 Member States. For more information, see: http://ipbes.net/

This *"Dialogue workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment"* is part of a comprehensive scoping study with the aim of introducing a Nordic IPBES-assessment. The purpose of the assignment to Naptek/CBM is to contribute to the Nordic Scoping Study regarding how to connect between Indigenous and local knowledge (ILK) and other knowledge systems in a Nordic context and assist in developing – in collaboration with indigenous peoples and local communities (IPLCs) – a Nordic methodology on how ILK can and ought to be included in a full Nordic IPBES assessment in order to fulfil the desired requirements of full and active participation, reciprocity and free, prior and informed consent.

Main questions that a Nordic IPBES assessment will try to answer are:

- What is the status of the biodiversity and ecosystem services and functions in the Nordic region?
- How do biodiversity and ecosystem services and functions contribute to the economy, livelihoods, food security, and human well-being in the Nordic region?
- What trends and changes (positive and negative) can we observe in the biodiversity and ecosystem services and functions and how does this affect their contribution to economy, livelihoods, food security and human well-being?
- What are the main causes behind these changes (including policies, institutions and activities)?
- What are the major gaps in knowledge (and gaps in kinds of knowledge) that need to be addressed?
- What are the best options to protect, sustainably use or restore biodiversity and ecosystem services and functions (management options, institutional arrangements etc)?

Purpose

This dialogue workshop on indigenous and local knowledge is focusing on how indigenous peoples and local communities can be included,and benefit from a future Nordic assessment, based on the principles of free, prior and informed consent. Thus, this dialogue workshop is an important step in the process of exploring

possible synergies and mutual benefits of connecting Indigenous and local knowledge with scientific knowledge in a future Nordic assessment of the status and trends of biodiversity and ecosystem services, within the framework of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

More specifically, the dialogue workshop will explore:

- how to include Indigenous and local knowledge together with scientific knowledge, based on respect and equity, in a future Nordic IPBES assessment of the status and trends of biodiversity and ecosystem services.
- how a fair and participatory process that is credible, transparent and useful for all should be designed,
- how – and if - Indigenous and local knowledge holders and their communities could benefit from participation in a future Nordic assessment

Content

The workshop will be an informal dialogue, with presentations from different views and experiences. Much of the time during the workshop will be used for dialogue in smaller groups.

Background reading on connecting Indigenous and local knowledge in IPBES

Report from the expert workshop and initial elements for an approach towards principles and procedures. See link: http://www.unesco.org/new/en/natural-sciences/priority-areas/links/biodiversity/projects/indigenous-knowledge-within-the-framework-of-ipbes/

Procedures, approaches and participatory processes for working with indigenous and local knowledge systems. See link: http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf

Participants

Participants to the dialogue are mainly representatives from Indigenous peoples in the Nordic countries, such as the Saami people and Inuits, and from local communities, and representatives/organisations of other local knowledge systems

Nordic Dialogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment

1-2 June 2015
Odalgården, Uppsala, Sweden

Workshop Agenda

Facilitator: Marie Kvarnström, CBM, Sweden

Sunday, 31 May 2015	Arrival day
	Monday, 1 June
7.15 – 8.00	**Breakfast**
8.00 – 9.00	**Registration, coffee and tea being served**
9.00 – 11.00	**Session I: Welcoming Session**
	Expected outcome: Participants united as a group and defining a comprehensive view of individual and collective perceptions of what is indigenous and local knowledge, to be dealt with further during the process of the dialogue.
	Opening Ceremony • Welcoming and explanation of the objectives of the dialogue-seminar by the organizers. Proposed rules for the workshop. *Håkan Tunón*, NAPTEK, CBM. • Who are we? Introduction of participants and expectations on the dialogue • What is indigenous and local knowledge for me? Which are the relevant groups possessing ILK in your countries? What are your personal experiences of learning and practising it, and what would you like the concept to embrace, from your horizon?
11.00 – 11.15	**Coffee and fruits**
11.15 – 12.00	**Session II: Introduction to IPBES and its work to create synergies between indigenous, local and scientific knowledge**
	Expected outcome: Participants familiar with IPBES including its aim of respect and recognize indigenous and local knowledge in the assessments, and with the Scoping Study of a Nordic IPBES assessment.
	The scoping study of Indigenous and Local Knowledge in a Future Nordic IPBES Assessment *Håkan Tunón, project leader, CBM*

What is IPBES, and what is the Nordic IPBES assessment scoping?
Maria Schultz, Project leader for the scoping of the Nordic IPBES Assessment. Swedish Environmental Protection Agency, and Stockholm Resilience Centre

What has been done so far within IPBES related to developing procedures and approaches for creating synergies between ILK and science? Multiple Evidence Base approach.
Pernilla Malmer, SwedBio at Stockholm Resilience Centre

Q & A

12.00 – 13.00 **Lunch**

13.00 – 15.00 **SESSION III: Nordic experiences of mobilizing indigenous and local knowledge for strengthened governance of biological diversity and ecosystem services and functions.**

Expected outcome: Methods and experiences where indigenous and local knowledge has proven to lead to better governance of biodiversity and ecosystems, and informed policy decisions has been shared. The session will be based on concrete cases and processes where indigenous and local knowledge have been mobilized in a local context in Nordic countries.

Panel dialogue:

The reindeer GIS project. Cumulative impact on reindeer herding from a diversity of causes
Peter Benson, Saami Parliament, Sweden

Mobilization of local knowledge about impacts from potential mining exploitation as a base for informed decisions
Marie Persson, Rönnbäcken, Sweden

The Snow Change Cooperative experiences of mobilization of indigenous and local knowledge in Finland
Johanna Roto, Finland

The PISUNA project. Protecting biodiversity and creating multiple benefits for local communities in Greenland
Adam Hansen, Greenland

Revitalization of customary sustainable practises in protected areas and the role of local farmers.
Liv Byrkjeland, Mørkridsdalen, Norway.

Buzz Round table discussions and discussion in the larger group

15.00 – 15.30 **Coffee and tea**

15.30 – 17.30

SESSION IV: Full and effective participation of holders of indigenous and local knowledge: For what purpose, for whom, and how can it be achieved?

Expected outcome: Perspectives on how a fair and participatory process that is credible, transparent and useful for all should be designed in terms of ensuring inclusion of indigenous and local knowledge, for a Nordic IPBES

Based on the cases presented in the earlier session, where local knowledge was recognized and respected and used for informed policy and decision making, what are the keys for success in general, and in IPBES in particular?

Introduction by reflections from holders of indigenous and local knowledge engaged in IPBES, present in IPBES 3 in Bonn, Germany, January 2015
Pernilla Malmer, SwedBio at Stockholm Resilience Centre

Discussion in groups

Questions to the groups:

1. From your experiences and perspectives, how could the full Nordic assessment be useful based on the assumption that it aims at including indigenous and local knowledge perspectives?
2. And, how can an assessment gain from indigenous and local knowledge?
3. What would be the opportunities and risks for holders of indigenous and local knowledge take part in an IPBES process?
4. What are the indigenous peoples and local communities perspective of best practise for full and effective participation?

Reporting back and summing up group discussions in plenary.

17.30 – 18.00

Summing up of the day;
What issues has been brought up and to deal with next day?

18.30 **Dinner**

20.00

Evening gathering
Presentation of the project "Nordic nature resource governance"
Johanna Roto, Finland

Film from Mona project, Norway: "*Man and the Nature Heritage*"

Tuesday, 2 June

8.00 – 10.00

Session IV Perspectives from Indigenous and local knowledge on central questions for the Scoping of a Nordic IPBES Assessment.

Expected outcome: Explore how a fair and participatory process that is credible, transparent and useful for all could be applied on central questions of the scoping for a Nordic IPBES assessment. The session will also provide feed back to questions dealt with in the Nordic IPBES scoping study
Discussion in groups

Based on yesterdays' session, where conditions for full and effective participations have been analysed and discussed, these insights are applied to some central questions in the scoping of a Nordic IPBES Assessment.

Introduction: Example from an assessment on the way; the thematic assessment of pollinators and food security, initial results for how ILK has been connected through the process.
Pernilla Malmer

Questions to the group – please also comment on the questions:

1. What trends and changes are we observing in our local biodiversity and ecosystem services and functions?
2. How does this affect their contribution to economy, livelihoods, food security and human well-being?
3. What are, from your point of view, the main causes behind these changes?

Discussion in plenary sharing the groups' reflections.

10.00 – 10.30 Coffee, tea and fruits

10.30 – 12.00 **Session IV (Continuation)** ***Perspectives from Indigenous and local knowledge on central questions for the Scoping of a Nordic IPBES Assessment***

Second round of questions to the groups:

4. Taking conclusions from question 1 – 3 into account, what are the major gaps in knowledge that need to be addressed?
5. What knowledge is often neglected, that holders of indigenous and local knowledge see as important for appropriate decision-making?
6. What values and governance in a society promotes sustainable livelihoods?

Discussion in plenary sharing the groups' reflections.

12.00 – 13.00 Lunch

13.00 – 13.45 **Session V. Indigenous and local knowledge in capacity building and outreach of IPBES.**

Expected outcomes: Input on capacity building needs, in all directions, and ways of communicating IPBES process and outcomes with indigenous and local holders of knowledge.

Introduction: IPBES and capacity building. Stakeholder engagement strategy and communication strategy
Pernilla Malmer, SwedBio at Stockholm Resilience Centre

Discussions in groups.

1. What capacity building would different actors need for working with ILK in IPBES and elsewhere?
2. Who would provide that capacity building?

Feed-back and plenary discussion:

13.45 – 14.30 **Session VI . Who are the holders of relevant knowledge for ILK in Nordic countries? Institutions, networks and roster of experts. How can they interact with IPBES, and one another?**

Expected outcomes: An extended list of holders of relevant knowledge, and proposals for opportunities and means for them to interact and strengthen one another, from their diverse perspectives.

Discussions in groups.

Questions:

1. List expertise and knowledge needed to carry out the assessment in your view, in terms of scientific disciplines, policy and practise competences, including governance at various levels and Indigenous and local knowledge.
2. Which are the relevant groups possessing indigenous and local knowledge in your country?
3. List experts, networks and competences, and (if you know) whether they are willing to participate in a network and roster of experts for the full assessment. A nomination process will later take place for the full assessment.

14.30 – 15.00 Coffee and tea

15.00 – 16.00 **Session VII. Summing up discussion and closure of the meeting**

Indigenous and local knowledge in IPBES

– a part of a scoping study for a Nordic IPBES-assessment

1–2 of June at Odalgården, outside Uppsala, Sweden

Participant list

Sofia Almkvist, Sverige / Sweden
Asta Mitkijá Balto, Sápmi / Norway
Kristina Belfrage, Sverige /Sweden
Peter Benson, Sápmi /Sweden
Lena Bergils, Sverige / Sweden
Stein W. Bie, Director, Norge / Norway
Liv Byrkjeland, Norway
Catherine Chambers, Ísland / Iceland
Parnuna Egede, Kalaallit Nunaat / Greenland
Siv Beate Eggen, Norge / Norway
Peter Einarsson, Sverige / Sweden
Michael Ericksson, Åland / Finland
Søren Espersen, Danmark / Denmark-
Adam Hansen, Kalaallit Nunaat / Greenland
Håkan Jonsson, Sápmi / Sweden
Elmer Topp Jørgensen, Danmark / Denmark
Gudrun Kuhmunen, Sápmi / Sweden
Zenica G. Larsen, Kalaallit Nunaat / Greenland
Inkeri Markkula, Suomi / Finland
Pauline Palmcrantz, Sverige / Sweden
Marie Persson, Sápmi / Sweden
Laila Rehnfeldt, Sápmi / Sweden
Johanna Roto, Suomi / Finland
Ólavur Sjúrðarberg, Færøerne /Faroe islands
Katharina Sparstad, Norge / Norway
Anna-Karin Utbult Almkvist, Sverige / Sweden
Nina Vik, Norge / Norway
Anne Walkeapää, Sápmi / Sweden

Project team
Carina Green, Swedish Biodiversity Centre, Sweden
Marie Kvarnström, Swedish Biodiversity Centre, Sweden
Pernilla Malmer, Stockholm Resilience Centre, Sweden
Maria Schultz, Stockholm Resilience Centre, Sweden
Håkan Tunón, Swedish Biodiversity Centre, Sweden

Appendix 3

Some of the slides from the presentation

Håkan Tunón, Swedish Biodiversity Centre

Indigenous and Local Knowledge within the IPBES

Intergovernmental Science-policy Platform on Biological Diversity and Ecosystem Services

Håkan Tunón
Swedish Biodiversity Centre

IPBES-assessment

What should a Nordic assessment assess?

- *What is the status of the biodiversity and ecosystem functioning in the Nordic region?*
- *How do biodiversity and ecosystem functioning contribute to the economy, livelihoods, food security, and human well-being in the Nordic region? (Here, the terms ecosystem functions and ecosystem services are often used.)*
- *What trends and changes (positive and negative) can we observe in the biodiversity and ecosystem functions and how does this affect their contribution to economy, livelihoods, food security and human well-being?*
- *What are the main causes behind these changes (including policies and institutions)?*
- *What are the major gaps in knowledge (and gaps in kinds of knowledge) that need to be addressed?*
- *What are the best options to protect, sustainably use or restore biodiversity and ecosystem functioning (management options, institutional arrangements etc)?*

IPBES-assessment

- Assess the status of BD & ESS
- Use available data
- Continuous process / repeated

Why are we here?

- Scoping study for a Nordic IPBES-assessment (Maria Schultz et al.)

ILK-IPBES

- is to contribute to the Nordic Scoping Study related to how to connect between Indigenous and local knowledge (ILK) and other knowledge systems in a Nordic context and assist in developing
- to analyse and discuss a definition related to ILK and especially "local communities",
- identifying relevant groups that should be included as ILK holders, and their relation to other knowledge systems
- a Nordic list of roster of ILK experts from different cultures, perspectives, customary practices

ILK-IPBES
Relevant questions:

- Which indigenous and local communities? In your country?
- Who carry indigenous and local knowledge?
- How can they take part in the process? What is needed for ILC:s to be included?
- What is similar in all Nordic countries and what is unique to one country or region?

Maria Schultz, Swedish Environmental Protection agency

Intergovernmental Platform on Biodiversity & Ecosystem Services

ipbes
Science and Policy for People and Nature

IPBES goal: strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development

IPBES functional approach: strengthen the science-policy interface at all levels through:

- knowledge generation
- assessments of various geographic and thematic scope
- identified policy support tools
- addressing identified capacity building and catalyzing financial support

Ecosystems are our insurance

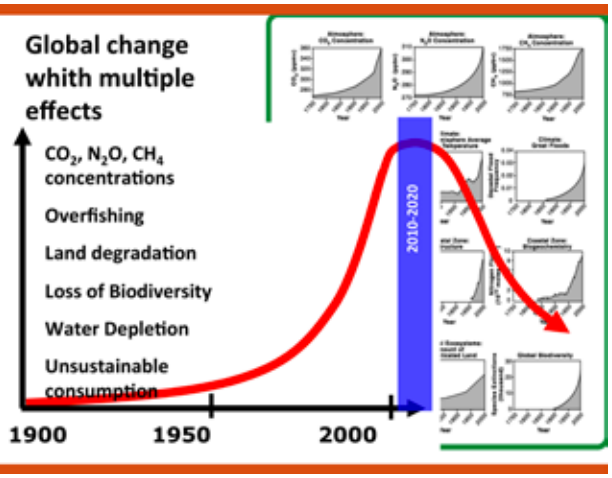
Ecosystem **- functioning unit of the interaction of animals, plants and the physical environment, e g. a lake or a forest**

Biodiversity **- variations in life, ranging from genes and species level to ecosystem and landscape**

Resilience **- the ability of a system to manage change and continue developing**

Ecology – Greek; study of the house

Global change whith multiple effects

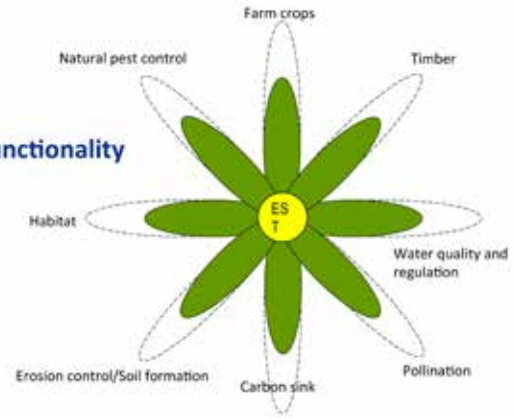


Classification according to EPA

Ecosystem services = the direct and indirect contribution of ecosystems to human wellbeing

Supporting– prerequisite for other services e g. t ex nutrition cycles and photosynthesis

Multifunctionality



Why regional assessments?

ipbes
Science and Policy for People and Nature

- In response to a decision (IPBES-2/5) by the IPBES Plenary which: "requests the MEP and the Bureau to undertake a regional scoping process for a set of regional & sub-regional assessments;"
- 'The overall scope would be to assess:
  - Status and trends of BES
  - Impacts of BES on human well-being
  - Effectiveness of responses (including the Strategic Plan and Aichi Targets)"
- This decision is a response to requests received from Governments and Stakeholders
- The scoping was accepted by IPBES-3 January 2015

Aim Scoping Nordic IPBES

- Scoping for Nordic IPBES "Regional/subregional assessments on biodiversity and ecosystem services"
- Develop the IPBES methodology (to make a Nordic instrumental model IPBES Assessment), identified actors that can contribute to the full assessment, data and knowledge sources and gaps, and to find the key questions for the full Nordic assessment
- To use the final product for proposals for a Full Nordic Assessment, including a budget for the full assessment.
- Help to evaluate the Nordic action plan
- Follow-up of national TEEB and related work
- To disseminate IPBES methods within the Nordic countries.

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Chapter Outline Full Nordic assessment

- Chapter 1: Setting the scene
- Chapter 2: Nature's benefits to people and quality of life
- Chapter 3: Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's benefits to people
- Chapter 4: Direct and indirect drivers of change in the context of different perspectives of quality of life
- Chapter 5: Integrated and cross-scale analysis of interactions of the natural world and human society
- Chapter 6: Options for governance, institutional arrangements and private and public decision-making across scales and sectors

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The Nordic scoping process?

- Scoping is the step which precedes a full assessment. It is a feasibility study which looks at all aspects of the future assessment, including outline, timeline, cost estimates, partners, etc.
- Build a roaster of experts
- Specify the expected content
- Dialogue and interaction with a broad spectrum of stakeholder, specifically knowledge holders of ILK

To conclude: Overall objectives

- To understand the objectives of IPBES, how it functions and the current work programme
- To develop an understanding of scoping and developing an IPBES assessment
- To gain knowledge on the key resources available to assist in scoping out and producing a Sub-regional Nordic assessment, which include:

Guidance documents

- Guide on assessments
- Guide on Values
- Guide on Scenarios
- Guide on Policy support tools

Resources from the 3 Task Forces

- Indigenous and Local Knowledge,
- Knowledge and data,
- Capacity Building

The Objectives (and deliverables) of IPBES are:

Objective 1 - Strengthen the capacity and knowledge foundations of the science-policy interface to implement key functions of the Platform

- Deliverable 1(a): Priority capacity-building-needs to implement the Platform's work programme matched with resources through catalysing financial and in-kind support
- Deliverable 1(b): Capacities needed to implement the Platform's work programme developed
- Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems
- Deliverable 1(d): Priority knowledge and data needs for policymaking addressed through catalysing efforts to generate new knowledge and networking

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Objective 2 - Strengthen the science-policy interface on biodiversity and ecosystem services at and across subregional, regional and global levels

- Deliverable 2(a): Guide on production and integration of assessments from and across all scales
- Deliverable 2(b): Regional/subregional assessments on biodiversity and ecosystem services
- Deliverable 2(c): Global assessment on biodiversity and ecosystem services

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Objective 3 - Strengthen the science-policy interface on biodiversity and ecosystem services with regard to thematic and methodological issues

- Deliverable 3(a): Thematic assessment of pollinators, pollination and food production
- Deliverable 3(b): Thematic assessments: (i) Thematic assessment on land degradation and restoration; (ii) Thematic assessment on invasive alien species and their control; (iii) Thematic assessment on sustainable use and conservation of biodiversity and strengthening capacities and tools
- Deliverable 3(c): Policy support tools and methodologies for scenario analysis and modelling of biodiversity and ecosystem services based on a fast track assessment and a guide
- Deliverable 3(d): Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature's benefits to people including ecosystem services based on an assessment and a guide

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Objective 4 - Communicate and evaluate Platform activities, deliverables and findings

- Deliverable 4(a): Catalogue of relevant assessments
- Deliverable 4(b): Development of an information and data management plan
- Deliverable 4(c): Catalogue of policy support tools and methodologies
- Deliverable 4(d): Set of communication, outreach and engagement strategies, products and processes
- Deliverable 4(e): Reviews of the effectiveness of guidance, procedures, methods and approaches to inform future development of the Platform

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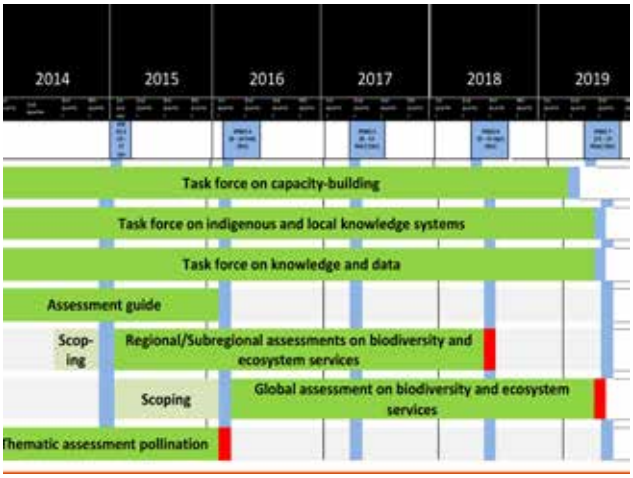
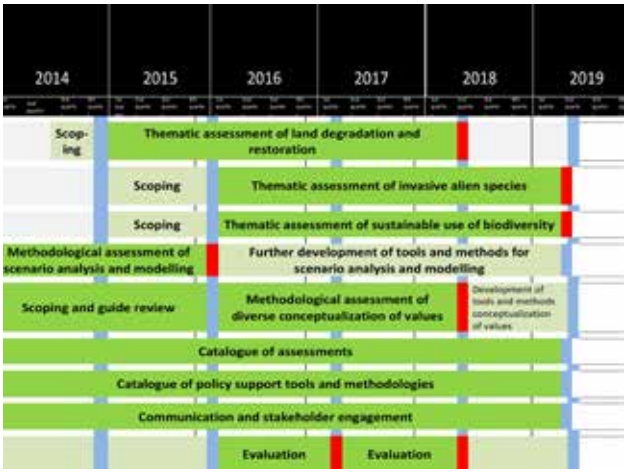




Pernilla Malmer, Stockholm Resilience Centre

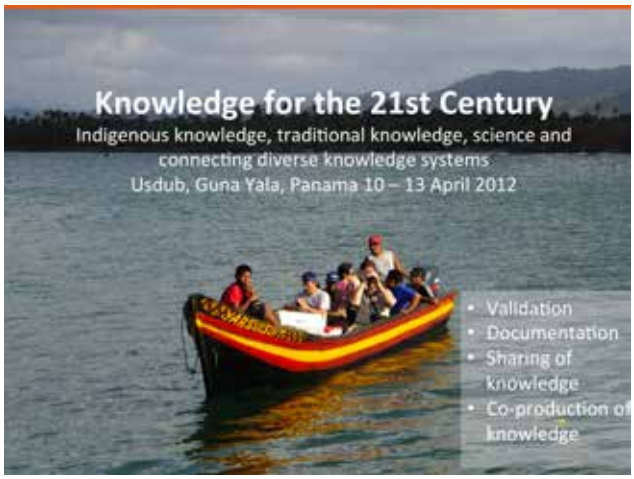
Nordic Dailogue Workshop on Indigenous and Local Knowledge in a Future Nordic IPBES Assessment
1 – 2 June 2015
Odalgården, Sweden

IPBES

What´s in it for knowledge holders?
Pernilla Malmer
SwedBio at Stockholm Resilience Centre

Indigenous and local knowledge: increased recognition in ongoing biodiversity / ecosystem related policy processes

- **The Convention on Biological Diversity (CBD) 2020 Aichi Biodiversity Targets.**
- Art 8j: respect, preserve and maintain traditional knowledge, innovations and practices
- CBD COP 12; Community Based Monitoring Welcomed By Parties. Recommendation share experiences with 8 (j) 10 C and IPBS ILK
- **IPBES:**
  "Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems"
- IPBES Task Force on ILK developing principles and procedures for making use of synergies across knowledge systems in its work programme and assessments.



Guna Yala dialogue – key factors for successful exchange

Essential actitudes:

- Trust
- Respect
- Resiprocity
- Equity
- Transparency

IPBES
Diversity of knowledge

- in carrying out its work the Platform will be guided by the following operating principles: ....

"Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems"
(UNEP/IPBES.MI2/9 Appendix 1, para 2d)

IPBES Deliverable 1(c):
Procedures, approaches and participatory processes for working with indigenous and local knowledge systems

The IPBES ILK Task Force:

- establish a roster of ILK experts to support the Platform's work;
- global dialogue workshops of ILK experts;
- review of regional case studies
- Procedures and approaches for working with ILK
- participatory mechanism for ILK

Point of departure: Need for a mindshift towards equity in the relation between knowledge systems

- Indigenous, local and scientific knowledge systems are different manifestations of valid and useful knowledge systems...

...which generate complementary evidence for interpreting changes and causal relationships which are critical for governance of ecosystems, and for taking decisions in support of resilience of social-ecological systems.

Three general approaches to exchange between knowledge systems

Integration:
Components of one knowledge systems incorporated into another through a validation process

Parallell approaches:
Placing knowledge systems next to each other, using separate validation mechanisms and assesing insights.

Co-production of knowledge:
Engaging in mutual processes of knowledge generation

IPBES Work Program 2014 - 2018

Platform goal

Strengthen the science-policy interface for biodiversity and ecosystem services
for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development

Platform functions, operational principles and procedures

Objective 1: Strengthen the capacity and knowledge foundations of the science-policy interface to implement key functions of the Platform:

(a) Priority capacity-building needs to implement the Platform work programme are matched with resources through catalysing financial and in-kind support*);*

(b) Capacities needed to implement the Platform work programme are developed with support provided by network on capacity-building *(continuous);*

(c) Principles and procedures for working with indigenous and local knowledge systems

(d) Priority knowledge and data needs for policymaking are addressed through catalyzing efforts to generate new knowledge and networking

Objective 2: Strengthen the science- policy interface on biodiversity and ecosystem services at and across subregional, regional and global levels:

(a) Guide on production and integration of assessments from and across all scales

(b) Regional/subregional assessments on biodiversity, ecosystem services

(c) Global assessment on biodiversity and ecosystem services

Objective 3: Strengthen the science-policy interface with regards to thematic and methodological issues:

(a) One fast track thematic assessment of pollination and food production

(b) Three thematic assessments: land degradation and restoration; invasive alien species; and sustainable use and conservation of biodiversity and strengthening capacities/tools

(c) Policy support tools and methodologies for scenario analysis and modelling of biodiversity and ecosystem services based on a fast-track assessment and a guide ;

(d) Policy support tools and methodologies regarding value, valuation and accounting of biodiversity and ecosystem services based on an assessment and a guide.

Objective 4: Communicate and evaluate Platform activities, deliverables and findings:

(a) Catalogue of relevant assessments;

(b) Catalogue of policy support tools and methodologies);

(c) Set of communication, outreach and engagement strategies, products and processes

(d) Reviews of the effectiveness of guidance, procedures, methods and approaches to inform future development of the Platform.

Piloting of ILK in IPBES assessments
Assessment of pollination and pollinators associated with food production

- Global call for nomination of experts
- Circulated and difficult to get nominations of ILK authors. Thus no ILK expert without scientific background in author team for pollination assessment. Lesson to learn for IPBES.
- Global Call for Submissions on ILK about pollination and pollinators
  Circulated in IPLC networks, to reach out to important and interested holders of knowledge
- Global Dialogue Workshop on Indigenous and Local Knowledge on Pollination and Pollinators associated with Food Production"
  Organized by the IPBES task force on indigenous and local knowledge systems

Thematic assessment of pollination and pollinators associated with food production

Chapter 1 brief review of the diversity of pollinators and pollination systems and their role in supporting food production, human well-being and biodiversity maintenance more generally

- 1.5 Pollinators, traditional knowledge and human well-being

Chapter 2 will assess the drivers of change of pollinators, pollination networks and pollination

Thematic assessment of pollination and pollinators associated with food production

Chapter 3 will assess the state of and trends in pollinators, pollination networks and pollination services as keystone ecological process and service in both human managed and natural terrestrial ecosystems

- 3.9 Indigenous knowledge

Chapter 4 will assess economic methodologies for determining the value of pollination for food production and the economic impacts of declines in food-relevant pollinator populations.

Thematic assessment of pollination and pollinators associated with food production

Chapter 5 will assess non-economic valuation, with special emphasis on the experience of indigenous and local communities, of impacts of the decline of diversity and/or populations of pollinators.

- 5.2 Values and Valuation
- 5.3 Indigenous and Local Knowledge

Chapter 6 will assess responses to risks associated with the degradation of pollination services and opportunities to restore and strengthen those services.

Lessons Learned for building ILK into IPBES assessments from the pollinator assessement so far

For details, see link:
http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/IPBES_Pollination-Pollinators_Panama_Workshop.pdf

- Workshop and its follow-up would have greater impact if conducted **earlier in the assessment process;**
- Greater dissemination and **communication of objectives to participants prior to the workshop;**
- **Hold the workshop in an indigenous community** to:

1) assist with embedding the process in a culturally relevant and holistic environment. It allows participants to not only speak with their minds, but also their heart;
2) expose authors to greater number of ILK holders, rather than those that attended the workshop. Allow the process to take full advantage of experiential knowledge;

- **Greater clarification around the process of knowledge collection and FPIC** with regard to the workshop and the relevant assessment;
- The **lack of assessment authors with direct ILK expertise is** a major limiting factor that can only be partially compensated for via the global dialogue workshop and related procedures.

World Indigenous Network May 2013
Dialogue "IPBES – What's in it for knowledge holders?" message delivered to Tokyo workshop on ILK in IPBES

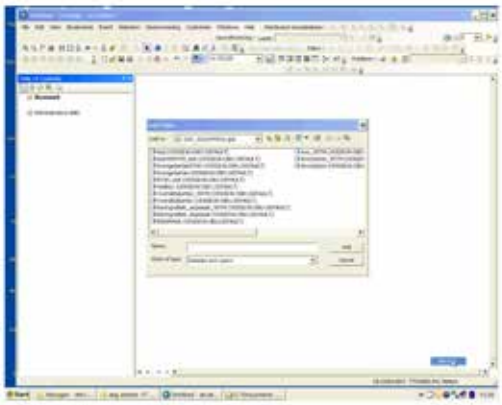
In-depth Dialogue on Connecting traditional knowlscience, such as under the IPBES, including gender dimensions
CBD WG 8(j) 8 and SBSTTA17
Montreal, October 2013

International Indigenous Forum on Biodiversity and Ecosystem Services (IIF BES)

- **Reflections for IPBES:**
  - Indigenous peoples and local communities must be recognized both as **knowledge holders** and experts on the one hand, and **as rights-holders** and **stakeholders** on the other.
  - Intercultural dialogue is needed
  - Validation. Facilitate a space where interested parties can work on developing evaluation procedures that fully recognize diverse knowledge systems with their specificities.
  - Distinct mechanisms for dealing with grey literature and indigenous and local knowledge.
- CBD Tkarihwaié:ri code of ethical conduct as well as Akwé: kon Guidelines for impact assessment and lessons from the Nagoya protocol is useful.
- Funding for knowledge holders participation is needed.

Peter Benson, Swedish Saami Parliament

Land Use Geodatabase



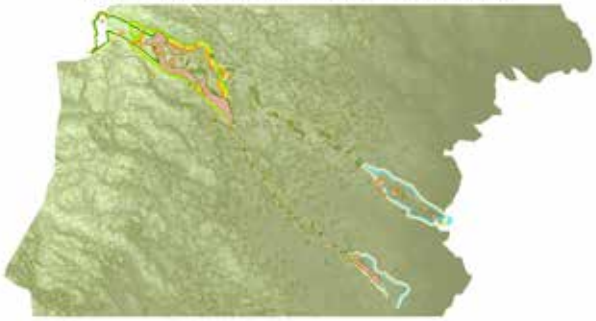
iRenmark

- A way of spreading and documenting traditional knowledge
- Traditional knowledge is complex and needs to be simplified
- It had to be adapted to briefly describe reindeer herding and the dependence of reindeer on land in time and space
- It shows a "normal" year (which does not occur)

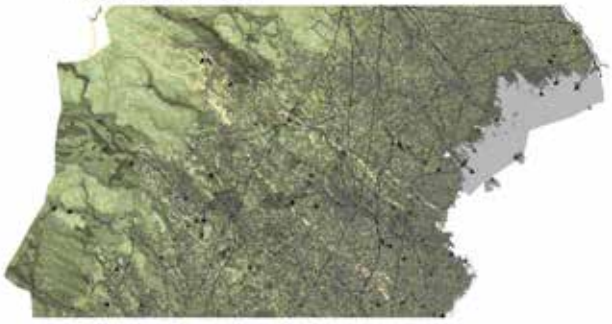
The landscape of reindeer herding

❖ For the understanding of reindeer hearding you need to understand the reindeer
- Semi-domesticated
- Walking behavior
- Ability to starve themselves through the winter

The landscape of reindeer herding

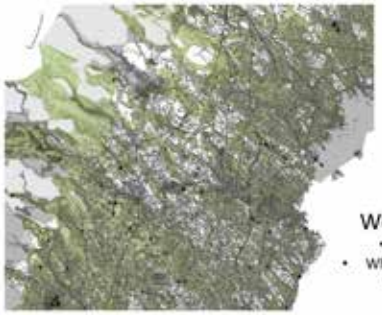


External factors



A fragmented landscape makes it

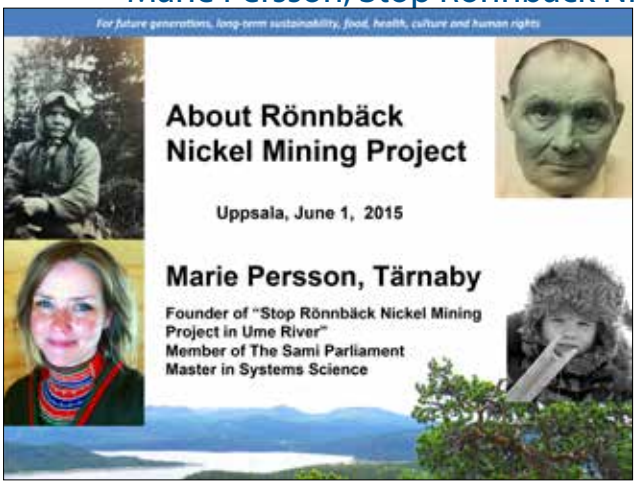
- Difficult to use,pass on and communicate traditional knowledge
- Increasing demand for access to pedagogical tools
- Geographical IT like GIS can be the solution

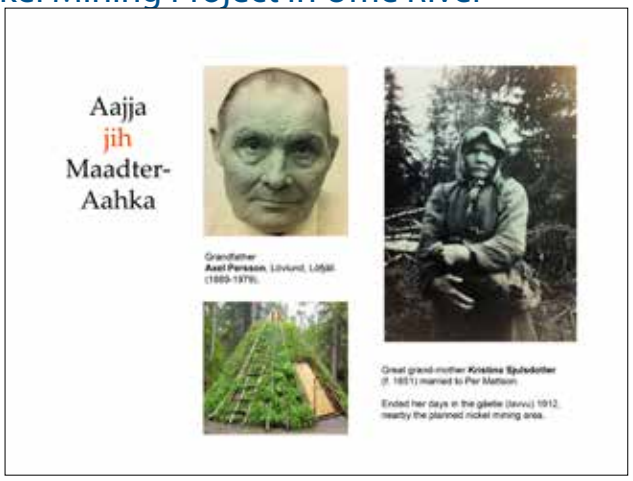


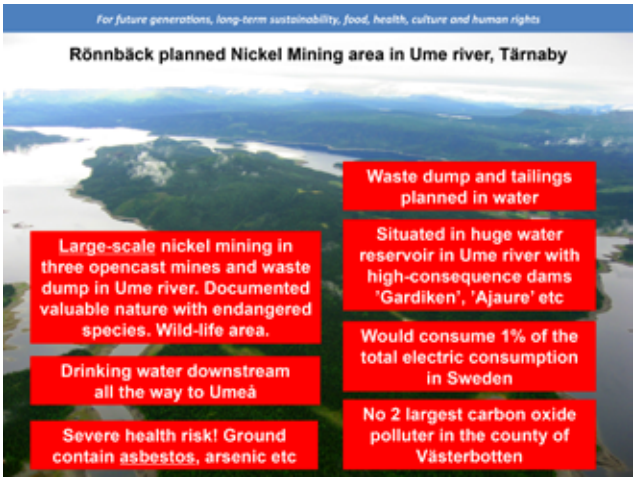
Working with GIS
- What is the problem
- What resolve the problem
- What Data do I ned

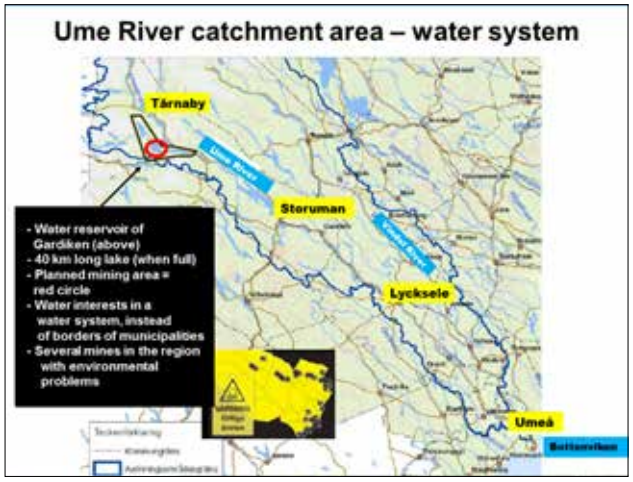
Annex 1

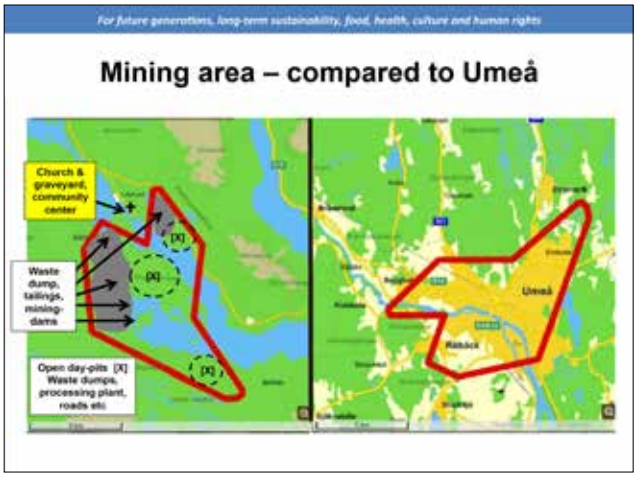
Marie Persson, Stop Rönnbäck Nickel Mining Project in Ume River











Sami culture
– dependent of land and water

Sami is totally dependent on land and water: reindeer herding, fishing, hunting, food, duodji, small-scale farming, herbs, traditional knowledge, language, spirituality, our history and ancestors, holy places etc.
Sami way of life, food, health

Sami entrepreneurs in several areas; not only reindeer herding, fishing, hunting
Also: culture, duodji, design, photography, film, tourism, yoik, music, art and more

Colonial history of the area

- Traditional Sami area
- Late colonisation: not far ago
- Racial biological research. State abuses:
- Confiscation of land, rights, language, culture, spirituality etc. Active actions by the state to divide and shatter the Sami
- Hydro electrical power-era
- Documentation exists, culture is alive, story-telling and knowledge
- Trauma and wounds, passes from generation to generation

In Rönnbäck:

UN Committee on the Elimination of Racial Discrimination (CERD) has for the first time stated in a mining project in Sweden:
The government must stop all mining activities until UN (CERD) has viewed the case

Sweden says there is nothing to be stopped since the mine is not active yet...

What happens?

- Weakening and violation of Sami childrens rights
- The majority of the Sami living in the area cannot appeal the process: They are not considered allowed to speak even though they are Sami and have always been living in our area
- Neither other concerned by the project
- The Sami people's culture and existance are endangered

Invisibility and lack of power

- Invisibility of Sami, culture, life, knowledge
- Lack of power and influence
- Affects health Suicides among Sami
  Also non-suicidal self-injuries, addictions geographical flight & Sami children growing up with a heritage of trauma and high risk of mental and physical ill-health
- The big picture on all impacts of colonisation and abuses on the Sami people is missing, discrimination
- We need to make visible, increase knowledge and respect

Law: The Minerals Act

- Very "favourable" conditions
- From the 1600s and very strong
- Made to secure mining projects
- Only a handful of people included in process
- Earlier: 50% of the mineral value to the swedish state
- Today: 0,05% (half permille) to the state and 0,15% to the land owner

Sweden has been ranked as no 1 in the world from mining industry
(Fraser Institute Survey of mining)

Sweden – the leading mining nation in Europe

- Swedish system is used as an argument - even though it doesn't work!
- Sweden needs to take responsibility:
  Stand up for Human Rights
  Respect Indigenous peoples' rights
- What system are exported with the minerals?
- Send a signal to the global mining industry for all communities world-wide affected by mining

Johanna Roto, Snowchange cooperative

Snowchange Cooperative

Community-based cooperative with headquarters in North Karelia, Finland

Tero.Mustonen@snowchange.org
johannaroto@gmail.com

Snowchange Co-op was originally founded in 2000. Through various processes, it has now worked for 15 years as a fully independent, non-profit cultural and research organisation.

- Snowchange has a **network of partner and member communities** all across the Arctic from Alaska, to Canada, Nordic and Sámi areas to Siberia as well as Australian Indigenous and Maori peoples.
- It is a registered cooperative in Finland, and has a Steering Committee of Indigenous and local community leaders, numbering over 20 across the world.
- We work with the Arctic Council, Intergovernmental Panel on Climate Change, Indigenous Peoples Climate Change Assessment, National Science Foundation of USA, several universities and partners on questions of biodiversity, climate change and local communities. Snowchange represents the positive change the North needs.

Snowchange Co-op methodologies to document local and Indigenous knowledge (1):

- **Indigenous and community people guide the process and are co-authors of all work** and own all their materials and rights. They are shared for research purposes if needed.
- **Communities are trusted in many cases to guide the documentation work** to those individuals and families who are recognized 'carriers of knowledge'
- **Knowledge is validated first and foremost in the community:** Snowchange always goes back to share preliminary drafts of any materials prior to their publication. Nothing is published without the mandate from the community, person or the family.
- **Then the materials are subject, in most cases to scientific peer-review** so it is a double review of materials to make sure the ecological, climate and cultural materials are of highest value.

Snowchange Co-op methodologies to document local and Indigenous knowledge (2):

- **Practical methods of documentation of local and Indigenous knowledge** include workshops, oral history documentation, often gender specific (women speak with women, men with men and mixed), land use and occupancy mapping, review of songs, poems, place names and other relevant cultural heritage materials, video and digital audio recordings, but only with the permissions from the people, site and subsistence activity visits and so on
- **Materials and end products always returned for the benefit of people** – posters, websites, conferences, nomadic schools, investments in local level to solar panel and other renewables guided by the community needs and so on
- **People conducting the interviews preferred to come from the community**, fishermen, hunters, ladies, reindeer herders – stress on building community-controlled databases and archives of cultural knowledge

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IPBES Nordic Scoping Study 2015 – Workshops in Finland

In order to document and investigate the varying manifestations of Indigenous and local knowledge, the following workshops are hold as 'case Finland':

- **23rd May, 2015: Jukajoki river watershed meeting**
- **24th – 25th May, 2015: Puruvesi lake local knowledge workshops**

Location of workshops

Jukajoki

- The Jukajoki watershed located in the Eastern Finland is the biggest ecological restoration project in the region. Another significant feature of the activity is that, for the first time in Finland, it officially recognizes the local knowledge of the Finnish---Karelian villages to be equally valued as a source of ecological knowledge as science. The UNEP recognized the Jukajoki project as a best practice (local knowledge participation) in its 2014 Yearbook on traditional knowledge.
- *Jukajoki Catchment Area Restoration Meeting, Village of Alavi*: All together over 10 participants recognized the five years of project work in the basin to **have supported the inclusion of Finnish-Karelian local knowledge** well into the science and restoration activities of this heavily-damaged ecosystem.

Puruvesi (Kerimäki)

- **Puruvesi lake local knowledge workshops:** North Karelian Puruvesi lake, one of the most pristine in Europe, has the water visibility down to 9 metres. It has also the 'last' communal professional fishery in the region, earliest records date back to 1300s
- Workshop at Kesälahti fishing station and (25th) Kerimäki fishing foundation

Snowchange COOPERATIVE

Lake Puruvesi Winter Seiner

The professional fishermen of Kesälahti identified the IPBES to be a potentially important process, and indicated **the inclusion of their uses and knowledge of the lake using oral history documentation, mapping of water uses, catch diaries and trips** to the lake.

As a part of the workshop aftermath, local school children were taken on lake to measure water visibility of this high biodiversity lake. Eight

Lake Puruvesi seiners (left) and children out with the boat 25th May, 2015

Snowchange COOPERATIVE

Kerimäki event with the Finnish Foundation for Water and Lake Fisheries:

On the Savo side of lake Puruvesi a high-level event was organised with the foundation to discuss **the historical context, state views and future steps of local knowledge**, and management into consideration.

Finland was seen as a unique cultural area with socio-historical reasons of why local participation & knowledge has been excluded from decisionmaking and power in the past

Participants of the 25th May Kerimäki event

Adam Hansen, Pisuna-project

Pisuna - Piniakkanik sumiiffinni nalunaarsuineq

Departementet for Fiskeri, Fangst og Landbrug

Pisuna
Lokal dokumentation af levende ressourcer -
Piniakkanik sumiiffinni nalunaarsuineq

Status Pisuna

Bygder (aktive 2015)
- Niaqornaarsuk
- Attu
- Kitsissuarsuit
- Akunnaaq

Bygder og by under opstart
- Saqqaq
- Saattut
- Qaanaaq

Bygder, træning planlagt sommer/efterår 2015
- Kangersuatsiaq og Nuussuaq/Tasisuaq
- Kulusuk, Kuummiut, Sermiligaaq, Tiniteqilaaq (Sermersooq Kommune, øst-kysten)

(For detaljer, se www.pisuna.org)

Baggrund Pisuna

- Overvågning af de levende ressourcer er en nødvendighed for at kunne udnytte disse på et bæredygtigt niveau
- Videnskabelig viden omkring populations størrelser og udviklingen for de levende ressourcer er mangelfuld
- Videnskabelig viden er omkostningstung
- Lokal viden eksisterer men bliver i mindre grad kvantificeret eller brugt i forvaltningssammenhæng

Målsætninger Pisuna

- Øge lokal kapacitet til at kvantificere, dokumentere og forvalte de levende ressourcer
- Øge det lokale engagement i naturforvaltningen
- Øge evnen til at ændre forvaltningen i takt med ændringer i bestandsstørrelser – og udbredelser
- Øge dialogen mellem fiskere og fangere, videnskabsfolk og forvaltningen
- På sigt fremme økonomisk overlevelse i de mindre lokalsamfund uden at stride mod bæredygtig udvikling

Deltagere Pisuna

- Lokale personer med interesse i naturen

- Institutioner:
  - Qaasuitsup Kommune
  - Kommunernes Landssammenslutning (KANUKOKA)
  - Fisker- og Fangerorganisationen i Grønland (KNAPK)
  - Grønlands Naturinstitut (GINR)
  - Inuit Circumpolar Conference (ICC)
  - Nordic Agency for Development and Ecology (NORDECO)
  - Grønlands Selvstyre

Økonomisk støtte Pisuna

2009-2011
- Nordisk Ministerråd (1.450.000 DKr)
- Nordic Agency for Development and Ecology (250.000 DKr)
- Grønlands Selvstyre (300.000 DKr)

2013-2016
- EU BEST (2.100.000 DKr)

Pisuna aktiviteter i hver bygd

- Bygdebestyrelserne har etableret lokale naturressourceråd
- Rådene består af lokale fangere, fiskere og andre naturinteresserede
- Rådsmedlemmerne udvælger de arter, der skal overvåges
- Rådsmedlemmerne indsamler data om arterne på ture i området
- Regelmæssigt (eks. hver 3. måned) opsummeres, diskuteres og fortolkes data
- Mulige forvaltningstiltag drøftes
- Koordinatoren for de enkelte råd koordinerer fortolkningen

Naturressourcerådets rolle i Pisuna

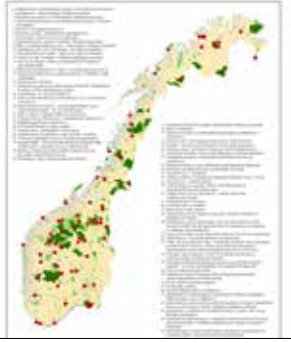
Resultateksempel – Akunnaaq

- Data:
  - Havterne yngler
- Observeret tendens:
  - Ynglebestanden af havterne er voksende
- Problemstilling:
  - Ulovlig ægsamling på Kitsissunnguit af personer fra andre bygder
- Forslag til forvaltningstiltag:
  - Frivillig hjælp til at håndhæve forbud mod ægsamling Kitsissunnguit
  - Dispensation til 'traditionel' ægsamling på tre små øer nær bygden (ikke Kitsissunnguit) i en tre-årig forsøgsperiode. Frivillig selv-dokumentation af ægsamlingens bæredygtighed

QUJANAQ

- Yderligere information om: Pisuna og 'Nordisk Naturressourceforvaltning'
- Departementet for Fiskeri, Fangst og Landbrug apnn@nanoq.gl

MONA – a National Project



MONA

- Collect and use traditional knowledge of nature
- 65 local projects in protected areas
- Project run by Norwegian Nature Inspectorate and Norwegian Environment Directorate
- The park rangers (SNO) – key partners

Mørkridsdalen

Local involvement

Interview - traditional knowledge

- Mowing meadows
- Using trees as food (elm bark)
- Grazing

400 old Photos collected

Cooperation professionals
(quality assurance)

- National park management
- Local university
- NAPTEK
- Norwegian Nature Inspectorate (SNO)
- Other professionals, biologists etc
- + Literature studies

Using the information

Collection	Use	Management
Skriftlige kjelder	Forvaltingsplan	Slått
Foto	Skuleprosjekt	Styving
Intervju	Div. kurs	Styrt beiting
Øko-mapping	Utstilling	
	Film	
	Guida turar…	

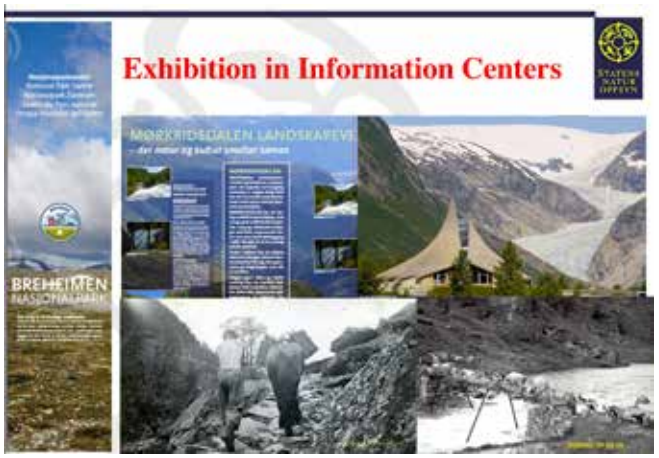
Course in traditional use of Elm

Restoration Elms

Interpretation

- 3 Films
- Several Courses'
- Exhibitions
- Papers in Magazines
- School Projects
- etc

Exhibition in Information Centers



Comprehensive school project

Nyt Arktisk samarbejde under Nordisk Ministerråd
Projekt 'Nordisk Naturressourceforvaltning'
om fisker-, fanger- og rensdyrhyrders viden

Nette Levermann
Projektansvarlig
Grønlands Departement for Fiskeri, Fangst og Landbrug

Finn Danielsen
Projektleder
Nordisk Fond for Miljø og Udvikling

Målsætninger

- Igangsætte et internationalt samarbejde for at fremme demokratisk borgerinddragelse i beslutningsprocesser omkring brug af naturressourcer
- Videreudvikle konkrete værktøjer, der kan få lokal viden 'i spil' i forhold til beslutninger omkring naturressourcer
- Opbygge kapacitet og oplyse om hvordan, at borgerviden kan bruges i praksis, blandt kommuner, andre lokale og nationale myndigheder, og folkelige organisationer

Deltagere

NORDECO ICR Stockholm Resilience Centre Stockholm University CBM Swedish Biodiversity Centre UArctic ELOKA Vaartoe

SLiCA, Grønlands Universitet
Grønlands Naturinstitut
Dept. BioScience, Århus Universitet
Norsk Institut for Naturforskning
Stefansson Arctic Institute

Økonomisk støtte

- Nordisk Ministerråd, Arktis 2015-2017 (1.000.000 DKr)
- Nordisk Ministerråd, Fisk og Miljø (1.000.000 DKr)

"Nordisk Naturressourceforvaltning" er en komponent i et nyt internationalt samarbejde. Det er udviklet over en årrække i et samarbejde mellem initiativer i alle otte arktiske lande.

På Sveriges initiativ blev oplægget til det internationale samarbejde præsenteret og drøftet i Sustainable Development Working Group 2012. Oplægget blev videreudviklet på symposium i Nordatlantens Hus i Kbh.

Hvad forventer vi at opnå?

- Væsentlig øgning i hvor ofte, at borgerviden om naturressourcer inddrages i beslutningsprocedurerne om kvoter m.v. i de arktiske lande
- Flere mennesker bliver interesseret i, opmærksomme på, og i stand til at gøre brug af, borgerviden som supplement til forskerbaseret viden
- Nye internationale 'standarder' (værktøjer, skemaer, processer) for demokratisk borgerinddragelse i beslutningsprocedurer omkring brugen af naturressourcer
- På sigt fremme økonomisk overlevelse i de mindre lokalsamfund uden at stride mod bæredygtig udvikling

Aktiviteter

- Videreudvikle standardskabeloner for indsamling, brug og kommunikation af borgerdata
- Afprøvning i Sydgrønland, Norge og Finland
- Kursus, og 'exchange visits' ml. Sydgrønland og Skandinavien/Finland
- International workshop i 2017
- Lokale workshops i udvalgte områder
- Policy brief til Nordisk Ministerråd

Standardskabeloner afprøves i tre områder

- Sydgrønland: Ivittuut, Nanortalik-halvøen, Isortoq og Tugtutoq
Fokus: Dokumentation og lokal forvaltning af moskusokse og rensdyr

- Norge: Finnmarken, Árdni, Ráidna and Fiettar siidas
Fokus: Kastration (*gáskit)* og arealforvaltning

- Finland: Näätämo watershed, Torneå catchment area, Jukajoki
Fokus: Laksefiskeri og arealforvaltning

QUJANAQ

- Yderligere information om projektet 'Nordisk Naturressourceforvaltning'
- Nette Levermann nele@nanoq.gl
- Finn Danielsen fd@nordeco.dk

Results:
How to include people's knowledge on biodiversity? – a questionnaire

A questionnaire regarding the specific issues concerning the inclusion of indigenous and local knowledge within a possible future Nordic IPBES assessment was e-mailed to 239 different individuals or organizations of relevance to ILK all over the Nordic countries and then forwarded in different networks, so the exact number of recipients is therefore not possible to calculate.

Background to the responders

The questionnaire presented a brief background concerning the nature and aim of IPBES as well as reflections regarding a possible sub-regional Nordic IPBES assessment. The questionnaire was therefore also a call for potential contributors to the suggested assessment. The questionnaire was in English, however, it was possible to respond in Danish, Norwegian or Swedish as well, and answers were delivered in all of these languages. A total of 33 answers (individual or collective) were received from all Nordic countries and the autonomous area Greenland.

The questionnaire consisted of seven questions, intended to provide space for the ILK-representatives to present their perspectives regarding how to best include ILK in a future Nordic IPBES assessment in a way that would be legitimate, credible and useful for all:

1. *Can you give examples of how biodiversity contributes to the livelihoods, food security, and quality of life of Indigenous peoples and local communities in the Nordic countries?*
2. *Can you give examples of how Indigenous peoples and local communities in the Nordic countries conserve, manage and create biological diversity?*
3. *Can you give examples of changes in the natural environment, which are being observed by Indigenous peoples and local communities and what is driving those changes?*
4. *Can you give examples of impacts that existing policies and interventions have on biodiversity and ecosystem services, and as a result on the wellbeing of Indigenous peoples and local communities?*
5. *Can you give examples of benefits connected to the inclusion of ILK in different contexts, for example in the IPBES Nordic assessment, but also elsewhere, such as in environmental impact assessments?*
6. *Can you give some key elements and good examples for the full and effective participation of Indigenous peoples and Local Communities in processes regarding biodiversity and ecosystem functions and services? Think about some processes where you have been involved.*
7. *Suggest groups in the Nordic countries possessing Indigenous and local knowledge, which are relevant to be consulted in an IPBES Nordic assessment (according to you)? Include suggested contact points, if possible.*

Apart from direct answers to the specific questions many of the respondents also gave reflections on an overall level, about the questionnaire as such as well as regarding the concept of a future Nordic IPBES assessment. This was either directly expressed as extra remarks or indirectly visible in the answers.

Analysis

We have tried to group the different answers in order to see similarities and trends, and we present quotes from the answers with a short interpretation. The answers have been summarized in English, and quotes are not actively made anonymous, nor actively stated.

Responses

Overall reflections:

IPBES can, albeit efforts to explain its functions in easy and clear language, be perceived as something abstract and many respondents sense a great distance between the academic discourse at the international level and the practical everyday reality of practitioners and holders of ILK, both conceptually and in time. One respondent reflected: *"It is important for the local communities to interpret these processes into something at the practical level. Without a practical dimension it will be difficult to see where to start and where to end. It is furthermore important that the results from this part of IPBES differs from that information gathered by anthropologists, ethnologists, historians, journalists etc. The area is also so wide that it is necessary to narrow it down into for example thematic issues."*

Other respondents noted a fear of not being included or noticed. One respondent commented humbly when approached with the questionnaire:

"You are probably not interested in what I know, since I'm not a Saami or a summer pastoralist. I'm just a small-scale traditional, partly self-sufficient, farmer with local breeds of animals, hay-harvesting and grazing on semi-natural grasslands. The fields are only fertilized with the manure from the animals of my own farm."

The Finnish government and the Finnish Saami Parliament have come to a political agreement that article 8(j) of the UN Convention on Biological Diversity, dealing with the local and traditional knowledge of Indigenous peoples and local communities, is applicable for the Saami people. For other local communities in Finland with traditional lifestyles, the applicability of article 8(j) has not been defined. In Sweden, the government has declared, with reference to the "knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles" according to article 8(j), that

"Groups in Sweden where this knowledge can be found are e. g. farmers and foresters, Saami people, summer pastoralists, archipelago- mountain- and forest farmers, archipelago- and inland fishers, hunters and handicrafters."[1]

In a modern Western society "Indigenous peoples and local communities with traditional lifestyles" do not mean people living in isolated communities, denying all kind of modern technology. Rather the point is they are holding and pracising the necessary knowledge for customary sustainable use of biodiversity. For many, this is a tacit knowledge, which is not recognized or made visible in their identity:

"However, we were sceptical whether we belonged to the right group that should have had this questionnaire. I interpreted it as knowledge held by Indigenous peoples and local communities. And I do not really know what the latter means! There are people with a lot of very valuable knowledge about the use of nature and sustainable development, I know a few. But it is more of specific individuals and not a local community."

The issue of how biodiversity and our dependence of biodiversity is defined and dealt with by our society was highlighted in different ways. A dependence on biodiversity can be about survival, or just about enriching the culture. But it can also be about the entire *cultural identity.* One respondent reflected that:

1 Swedish Governments, prop. 2004/05:150 *Svenska miljömål – ett gemensamt uppdrag.*

"Skånegås" (the Scania goose) is a local breed of the southern parts of Sweden and its traditional importance is so obvious that it could be defined as a significant cultural heritage. Photo: Håkan Tunón.

"Duodji [Saami handicraft] is both timeless and living, with deep roots in the Saami culture. It spans from everyday handicraft to true art. It is has a traditional pattern and shape, unmistaken characteristics that differentiates it from other handicrafts. The materials come from nature and the reindeer, and could be shaped into practical and useful things. The general character, suitability, composition, décor, colour, and shape, as well as local varieties, together create the overall quality of duodji. New shapes and techniques have smoothly and continuously evolved from the traditional duodji. There has never been any breach in the tradition so there is no generation gap between young and old Saami handicrafters."

Another respondent pointed out that:

"Biodiversity is both nature and culture! Differences in legislation, status and of course in financial resources for inventories, documentation and research create problems. The Swedish Biodiversity Centre has tried to breach this gap, but so far it hasn't been enough."

The relevance of traditional knowledge and conservation of biodiversity is especially clear when it comes to the governance of the values of cultural landscapes:

"Within biocultural landscape conservation we probably have the strongest connection between biodiversity and society. Landscaping (to us) is much about conserving and developing environments with high biodiversity value created by customary use (the biocultural heritage). With customary use we here mainly point at the production system consisting of meadows, fields and grazing grounds that used to be a part of southern Sweden prior to industrialization. It has (or have been, or can

be yet again) a strong part of the cultural identity, with a high biodiversity (one of the richest biotopes in Sweden). It is very urgent in landscaping to maintain the knowledge connected to such environments and to continue in using it in today's context. We believe there will be a niche in the future for small-scale farmers with this kind of knowledge in small-scale handicraft food production or similar products and services, as a part of their subsistence."

Furthermore, in earlier time, knowledge about materials of for instance craftsmen and carpenters within traditional building constructions was rich and of critical importance, when it came to determine which tree species delivered the wood needed for a particular detail. The knowledge used to be extensive concerning the material as such and its suitability for different purposes, but also when it comes to the tactile, experience based skills in the craft. This knowledge was closely connected to the understanding of biodiversity.

In the responses, the different values in scientific and local knowledge were also reflected upon, including the need for a holistic view on knowledge in the IPBES assessment:

"While conventional scientific activities are excellent for studying many aspects of the natural environment, it also has limitations in thematic coverage and spatial and temporal scales. For a full assessment it is therefore important to combine the different knowledge sources (e.g. conventional science, traditional knowledge (e.g. ways of harvesting/protecting, phenology, ecological relationships, etc.), local perceptions of status and trends of resources/species, local observations with some level of data capture), using the individual strengths in relation to the objective of the different sections of the assessment, and identify exactly how each knowledge source can contribute to the different sections."

Rhinanthus-species (vernacular name 'rattle') have been used all over Europe to indicate when the hay is ready to be mowed. Photo: Håkan Tunón.

Self-grown shapes of wood creates durable materials for particular purposes. The knowledge of a skilled craftsman will result in advanced solution of utmost simplicity. Material for woodcraft can often be shaped already on the growing tree. Bent branches and solid branch crotches can be used as relevant details. Photo: Håkan Tunón.

Others were more pessimistic about the idea of bring in and recognize a diversity of knowledge systems such as being the ambition in IPBES, based on previous experiences:

"It was much more difficult to answer your questions than I first believed it should be. When it comes to the people out in the archipelago, they feel that all decisions when it comes to management of natural resources are made well above their heads. Even if there are things written about participation and rights to appeal, it is, according to my opinion, impossible to influence the interpretations made by governmental agencies."

The initial reaction on the questionnaire from the respondents could also refer to other matters, but the knowledge as such. Many times they are reflecting the feeling of hopelessness from never being listened to. One respondent mentioned:

"Centuries of experiences from the relationship between man and nature do weigh lightly when Birdlife comes, to quote people in my surroundings. Birdlife has infiltrated the Finnish ministry and influenced important positions. That is a fact, something that stirs the emotions in the archipelago. It is perceived as a "Best brothers"-system [cronyism], where the "green Khemers" are joined together and over-ride the people living on the isles. Approximately 3 000 people live in the Western Åbo archipelago, plus additional several thousand who live there most of the year. And sometimes they have been living there for perhaps five generations. These people have a long (unfortunately) experience of what I am describing. If I can present an example of good communication and participation I'll send it to you, there ought to be something.[2]

The respondents also showed a positive understanding of the complexity of the matter, and that IPBES is trying to create new scenery, and that we could learn from the process:

"I think it is important to regard this as a process towards full integration of ILK in future assessments. We need to develop an organisation and mechanisms that capture information and that ensure the desired geographical, and thematic coverage for the assessment (and this is not an easy task). I therefore hope that we see this first assessment as a learning process and a move towards full integration of ILK, otherwise it will be easy to disregard assessments."

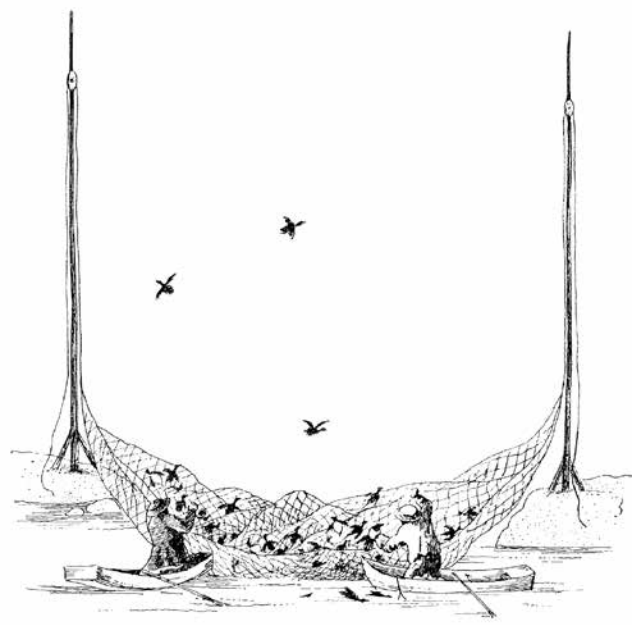
Responses to the specific questions:

1. Can you give examples of how biodiversity contributes to the livelihoods, food security, and quality of life of Indigenous peoples and local communities in the Nordic countries?

"Livelihood, esthetical and cultural values, beautiful nature, tourism, wild plants, and extra incomes. It is valuable to be able to read the behaviour of animals. And a rich flora and fauna creates a soil that is better to retain water. The pollinators' work is essential for our possibilities to produce food. Small farms combining food production and landscaping; grazing and small-scale fishing. The work is governed by the preconditions of the local nature. Grazed islands get a rich biodiversity and less overgrowth."

"Biodiversity contributes to better pollination of fruits, berries and vegetables, and is a prerequisite for a healthy and living soil, it is important for plants' resistance against pests of different kinds."

2 The editors: However, no such example was received during the project period.



Catching waterfowl during the spring migration in the Baltic Sea archipelago from 1751. Trapping and hunting different kinds of waterfowl, mostly the males of eider and long-tailed duck, has been a tradition a long the coastline for centuries. During the 19th century the hunting with shotgun became increasingly common, but when Sweden and Finland entered the European Union the hunt for waterfowls in the spring was banned.

The purpose with this specific question was to highlight dependences between local people and the local biodiversity. It resulted in raised eyebrows from some the respondents, as for those who live near nature the answer of the question is so natural that it could be percieved as almost stupid. Indeed local communities, and everybody else for that matter, are ultimately dependent on biodiversity. Without biodiversity we will not have any food etc. However, ILK-holders and practitioners – people involved in customary use of local biological resources – is explicit dependent on the biodiversity and ecosystem services they are nurturing, compared to most citizens in the Nordic countries. In spite of the initial doubt, most respondents developed detailed answers from a number of examples of biodiversity and biological resources produced in the landscape, i.e. the results of animal husbandry (often local breeds of livestock), cultivation, fishing, hunting and gathering of wild plants and berries.

"In rural areas and smaller villages the contribution of the biodiversity is significant. E.g. a high number of small herds of grazing animals in areas not suited for crop production helps keeping an open landscape. Biodiversity also contributes to hunting and fishing, which is of great importance for the subsistence of local people. It is also important not to underestimate the contribution that the picking of wild berries constitute."

The subsistence production in rural areas are explicitly mentioned; and even if people have stable incomes, they still regularly fish, hunt and cultivate their own vegetables and potato, and thus uphold a close human-nature relationship:

"For many people in the rural areas small-scale cultivation, fishing, and hunting are of economical significance for their own sustenance. For a large proportion of the rural population it is an active choice to live there due to the lifestyle and quality of life. If the quality of the industrially produced food was to go down drastically an/or if the prices would go up, there is a potential that these individuals can increase their small-scale production."

Some have already developed entrepreneurship focusing on local products, e.g. farm dairies. It is mentioned that people that practice gardening and small-scale vegetable production possess a silent (tacit) knowledge about the handicraft of cultivation, adapted to the local conditions and climate. This is something all growers have in common, both in urban and rural areas. Closeness to nature is also regarded as a source for recreation and a good life. However we live in an era of intensive, industrialized and large-scale agricultural production and in most regions of the countries, the small-scale farming disappears and forestation is changing the cultural landscape. Representatives from the public, especially cultural or environmental NGOs, are on a voluntary basis continuing with different forms of customary land use in order to preserve the structures.

Grazing by cows, goats, sheep, and reindeer on semi-natural grasslands is frequently highlighted in the answers as an important example of customary sustainable use of biodiversity, and directly connects biodiversity with the survival of the local communities. Domesticated animals and the grazing of outlying lands have been the basis for agriculture in most Nordic countries. Also today, for example in Norway, it constitutes an important factor for maintaining a rural population scattered all over the country. The energy efficiency of the traditional systems is remarkable. In the Sogn-region, non-fertilized, forested meadows give spring grazing, hay fodder, autumn grazing as well as leaf fodder (Austad et al. 2003). The semi-natural grasslands are put forward as biodiversity rich habitats. A rich biodiversity is also highlighted as giving rise to a fodder that results in high-quality meat and dairy products. This is underpinned by several scientific studies that show specific qualities of products produced on mountain pastures compared to fertilized grasslands, such as different taste, higher amounts of polyunsaturated fatty acids, antioxidants, etc., (e.g. Sickel 2014).

In a report, Norwegian researchers have listed ecosystem services provided by the traditional agriculture/cultural landscape (Norderhaug et al., 2006). In some areas of Sweden the municipalities have discussed buying grazing animals that the local farmers can rent, since the number of available animals in many cases is lower than the actual need to keep the grazing areas open.

It was mentioned in a Swedish context that the few remaining small-scale mountain farmers, Baltic Sea fishermen and other self-sufficiency fishing, Saami reindeer

Grazing and trampling by domestic animals creates the opportunities for less competitve biodiversity. Photo: Mattias Iwarsson.

The leave the summer farm after morning milking for grazing in the outlying lands. In the evening they will come back, after several kilometres of walking. Photo: Håkan Tunón.

herders, as well as the organic farmers are heavily dependent on biodiversity for their way of living.

The intangible cultural heritage connected with these issues needs attention. The traditional knowledge evolved from customary practices might be priceless for the future. It was emphasised that the intangible cultural heritage cannot survive detached from the practical work of customary use.

One respondent reflects that:

"When talking about biodiversity and ecosystem services in an ILK-context the picture is multifaceted. There is a special biodiversity needed for a summer pastoralist, and this specific biodiversity created is something that many others can enjoy, in the vicinity or from longer distances. It is also a matter of time perspective. 150 years ago, summer pastoralism was an important ground for the subsistence of the people in the villages. However, only a very small proportion of the products were sold, or paid in taxes. Today, marketing of the products, often directly at the summer farm, is a necessary part for survival."

The conservation of fresh herring by smoking creates a local traditional product that is popular among the tourists as well as the local community. Photo: Håkan Tunón.

The circular interlinks between biodiversity and customary use and development of biodiversity was highlighted. If there is biodiversity in an area, grazing will contribute to generate a richer biodiversity that will give better grazing, and so forth.

In several areas, local communities have had a close relationship with the biological resource, but due to the societal change during the 20th century the opportunities to carry forward the traditional way of life have changed.

"In the fishing communities, local stocks of specific species like eel, garfish or herring often were of central value for the community and constituted a main part of yearly income. Many local societies were based on the economy of very few species. In times with rapid changes in the ecological system these societies also had to change rapidly to exploit other resources or find new livelihoods. The Lime fjord-area with its changing access to the North Sea and accordingly changing ecosystem is a good example. Examples are when modern trawlers start fishing on local stocks, thereby thinning out the diverse resources on which coastal fishermen are dependent."

Saami food traditions have turned into important gourmet food initiatives and a way to attract tourists. However, there is still a need for working conditions for reindeer herding for meat and environmentally sound lakes for fish. Photo: Håkan Tunón.

From people in areas where indigenous cultures are still vibrant, the production for food security and the importance of keeping the balance with biodiversity is stressed, but also in indigenous communities there is a particular concern that the knowledge is not transferred, and may not continue to be used in the next generations. In hunting and fishing cultures the traditional sources for earning your life are still indispensable. From a Saami point of view it is stated that:

"Our culture is based on the landscape. Our traditional livelihoods and ways of living need the landscape, as we know it now, with a rich biodiversity and an intact nature. Reindeer herding is the only profitable traditional livelihood as it stands today, and for practising it we need the rich biodiversity with trees and plants, that the traditional herding depends on. We have a very vulnerable relation with the nature around us, if it changes our traditional way of living is in a great danger."

From the North-western part of the Nordic countries, i.e. Iceland and Greenland (probably also valid for the Faeroe islands) it is simply summarized as:

"If we didn't have biodiversity, we couldn't live at all, we wouldn't have a biological sustenance at all. [- - -] However, we have on Greenland reached a point where those who will follow us (the children) do not recognize the taste of walrus meat, it is only on Northern Greenland the children know the taste and how you can cook it. We have Danish chickens, pork meat and all sorts of foodstuff in our everyday cooking and at low prices. And we have practically no import restriction to limit the presence of products from the medicine-based European food industry."

The local tradition on Greenland and its connection with biodiversity was described as:

"Hunting is part of the Greenlandic culture and livelihoods. Marine and terrestrial mammals, birds, fish, shellfish and plants are part of the subsistence economy, and in addition fisheries are the biggest source of the national income. The key species utilized in Greenland include, among marine mammals: Polar Bear, Walrus, Narwhal, Beluga, Ringed seals, Harp seal and Hooded seal, Minke whale, Fin whale, Harbour porpoise and Humpback whale. Caribou, Musk ox and Snow hare are the most utilized terrestrial mammals. Seabirds hunted in considerable numbers include Murre/Guillemots and Eider, in the Northern part of Greenland Little Auks, in East Greenland Geese and Little Auks. Other important birds that can be mentioned are Ptarmigan and Kittiwakes. In regards to the fisheries, Arctic Char, Capelin, Cod, Redfish, Wolf fish and Salmon are consumed locally. Commercial fisheries include Greenland Halibut, Cod, Lumpfish and Shrimp. Of the benthic fauna, the blue mussels are of particular importance. Different seaweeds are collected for consumption, as well as terrestrial plants, like different berries, Angelica, Labrador tea, thyme and other plants."

"In many Greenlandic communities the only source of economical income is hunting or fishing depending on season, market and accessibility of the resource. In more remote areas, like small villages and remote cities, seal hunting contribute to the local meat supply and economy through (government subsidised) sales of the fur."

"Many people in Greenland rely on natural resources for both subsistence and income. About 2000 people have hunting and fishing as their main occupation, and there are about 4300

A newly shot muskox. In Greenland hunting and fishing is vital for the sustenance and it is also a valuable carrier of the culture. Photo: Aningaaq Petersen.

recreational hunters. In some areas of Greenland, there are local ways in which hunters control access to resources. For example, in accordance with Qaanaaq municipality by-laws, hunting of narwhale is only allowed using traditional hunting methods. Moreover, merely by living in the coastal areas, using the resources and observing their environment, the communities notice changes in the resources."

A freshly caught wolf fish. Photo: Susanne Fahlén.

It was also pointed out that decisions regarding governance on Greenland are more local than in the other Nordic countries:

"In Greenland the methods to develop legislation are that the people in Nuuk takes decisions and creates law. The local people that live close to the biological resources are more up to date with them, and consequently their knowledge is much better informed than that of the consultants for the legislative congregation. The local people then submit their suggestions for improvements in management and quota to the central authorities. Sometimes they are listened to and management and quotas are changed. At other times they are listened to but their proposals are rejected for one reason or another, and sometimes they feel they are not listened to at all if the process is taking very long."

In Iceland, marine biodiversity contributes to the quality of life of local rural communities, who depend heavily on marine resources for commercial and personal use. The constant presence of a diversity of fish species supports year-round interaction with the sea. It is estimated that rural residents obtain 70% of their marine products directly from local fishermen because of the fresh delivery and in comparison supermarkets are more expensive. However, there are also an abundance of other natural resources on Iceland, including an active agriculture.

The value of biodiversity for future rural development was also highlighted. Quality oriented small-scale production, such as brewing local beer, collecting semi-domesticated and wild herbs, rescuing traditional varieties, and using them for value-added production are examples of proposals in the responses. The need for ILK related to biodiversity for this kind of production was also stressed. Local meat from semi-natural grasslands is an example where traditional production methods are intimately linked to the natural prerequisites. Here biodiversity contributes to food production by being the base for grazing and winterfodder – in the same way as the food production contributes to conserving biodiversity on the meadows and pastures. However, sometimes the local traditions are lost and the ongoing production may rather be based on more modern "pseudoscientific" ideas.

Regarding gardening, the work of the Swedish Programme for Plant Genetic Resources (Programmet för odlad mångfald, POM) on hops and rhubarbs was highlighted. In a national collection of varieties of hops, the different collects were not only described and propagated, they were also used for brewing beer, and the characteristics of the different varieties are studied. This could be further linked to the trend of microbreweries. Local varieties, cultivated and used for local beer, could be a way of maintaining and benefiting from local knowledge and practices related to biodiversity. The collection of rhubarb varieties led to the founding of a rhubarb festival and an increased commercial interest in cultivation of different varieties used for cordial, jam, marmalade, etc. The rhubarb festival at Julita in Sweden is now a national touristic attraction. Increased knowledge and awareness of traditional plant varieties could thus result in rural development and increased wellbeing.

Wild plants as well as local varieties in cultivation give lots of possibilities for the creation of local products for an external market. Photo: Håkan Tunón.

2. Can you give examples of how Indigenous peoples and local communities in the Nordic countries conserve, manage and create biological diversity?

"When the local community feels that they are being heard by the legislative authorities."

Regarding the situation in Denmark and southern Sweden one respondent reflects that:

"There are not many, if any, examples of local communities with an unbroken line of management. There are, however, examples of modern societies for haymaking, grazing, and nature conservation taking care of local nature and managing parcels of modern production landscapes with the ambition to enrich nature and biodvidersity. Unfortunately, hardly anyone uses the whole range of techniques and strategies to reconstruct and manage biodiversity as it was 200 years ago. It is e.g. hard to find land with a combination of grazing and haycutting on natural pastures or combined grazing with a mix of animal species on the same area. It would be interesting to develop a Nordic project trying to activate this old knowledge as an asset in management of biodiversity. I came to think of Mårten Aronsons «Bygden där vinden vände»."

Bråbygden in Småland, Sweden, is an example where the local communities together have wanted to create a pleasant and attractive landscapes as well as possibilities to remain in rural area. Traditional methods are used in order to preserve the cultural land-scape and enhance the biodiversity. Photo: Håkan Tunón.

Through traditional customary use (management practices) the landscape remains open and the semi-natural grasslands is getting richer, while it constitutes a freely available summer fodder for food production. Summer farms in Budalen in Norway. Photo: Håkan Tunón.

This connects with studies showing that small, heterogeneous farms have a richer biodiversity than large farms.[3] Another respondent reflected that:

"The grazing animals are key to the conservation and creation of biodiversity in the extensively grazed cultural landscape. Biodiversity is developed by the extensive grazing of animals in the natural forest. The grazing opens up the vegetation and brings in more light. These new conditions for the plants create new ecological opportunities by bringing in more light and a little more nitrogen from animal dung. In such open areas the more light demanding plants are thriving."

When grazing is not practiced any more, the species associated with the traditional land use disappear and land suited for food production is converted into forests. The mountain summer farming and pastoralism in Norway and the region Valdres was taken as a positive example from when grazing is sustained:

In the open areas, the more light-demanding plants benefit. Certain plants develop strategies to avoid getting eaten by the animals, some by having a bad taste, being toxic, getting sticky, by blooming before the grazing season and so on. This way the biodiversity increases. At the same time, a diversity of insects is connected to the diversity of pasture plants, thus the total number of insects also increases. There are birds that prefer the open pasture areas, and birds that eat the seeds from some of the pasture plants, and the wildlife is in general increasing. After some hundred years with continuous influence from grazing, one can also find mushrooms dependent on the open grassland areas. Many of these species disappear when grazing is not practised any more. The loss of traditional use together with the industrialisation is now resulting in disappearance of these grazing-dependent species.

Another ecosystem niche is the trails where the animals walk. Along these trails you can often find particular plant and animal species."

A continuation of the Norwegian example was delivered by another respondent:

"In Norway today the largest area of semi-natural grasslands is in the outlying lands. Traditional farmers that graze their livestock on the outlying lands make an immense contribution to maintaining these cultural landscapes and their biodiversity. Cattle grazing are considered the best way to maintain a

3 Belfrage, K., Björklund, J. & Salomonsson, L. 2005. The Effects of Farm Size and Organic Farming on Diversity of Birds, Pollinators, and Plants in a Swedish Landscape. *Ambio* 34(8), 582–588.

In 2006 more than 2 million sheep and lamb grazed in outlying lands in Norway during the summer, together with well over 200 000 cattle. Photo: Håkan Tunón.

species rich meadow (cp. e.g. Pykälä 2007, Dumont 2013). Summer farm pastoralism plays an important role. In Norway approx. 2 million livestock graze the outlying lands and there are approximatelly 1.300 active summer farms.

Small-scale farmers, sometimes with an alternative income, sparetime farmers and idealists who mowe meadows or keep livestock to keep the landscape open, often make a greater contribution to the semi-natural biodiversity than large-scale farmers.

In Norway in 2009, the term Selected Cultural Landscapes in agriculture was coined. All counties have selected at least one area, and today a total of 22 selected cultural landscapes exist. All of these have extensive biological and cultural historical values that are heavily dependent on continued traditional landuse. The work to maintain them is based on voluntary agreements between the government and the landowners, and is coordinated by Statens landbruksforvaltning, Riksantikvaren and Miljødirektoratet. Management plans have been developed for all of these areas and this effort has already paid off (cp. Bråtå & Lerfald 2013 and Vistad et al. 2013). The plan is therefore to increase the number of areas.

Other important projects are the available action plans for semi-natural habitats. The action plan for hay meadows (Norderhaug & Svalheim 2009, Direktoratet for naturforvaltning 2009) has been very successful. The implementation of it is based on a concept developed by Ellen Svalheim in the Arvesølv-project (Svalheim 2010). In short, the valuable hay meadows are maintained through a longterm financial support to the farmer and the development of a management plan for the meadow. Within the project, there is a dialogue and knowledge exchange between the farmer, the municipality, the county administration and the Miljødirektoratet. The competence at county level is secured through establishing an expert group. There are also action plans for pollarded forests and coastal heathlands. An action plan for seminatural grasslands is in process."

Also from Swedish respondents, the management of hay meadows was brought forward as an example of biodiversity rich habitats worth conserving, managing and re-establishing. In many parts of Sweden, local historical societies and environmental protection societies are managing meadows and also give courses in meadow management. There is also a trend that people want to create small meadows in their gardens. A reflection was made regarding the research project "Lawn" that looks at alternatives to lawns and alternative management of lawns in urban areas, like parks. Some of the proposed management resembles the management of traditional hay meadows. These will require less maintenance at the same time as being richer in biodiversity than ordinary urban lawns.

Especially the reindeer husbandry is pointed out as dependent on a biodiversity rich landscape, but it also creates biodiversity.

"For the Saami People, our survival as indigenous people depends on nature. By preserving our culture and the way of life, we also protect nature and biological diversity."

In Greenland all sorts of local initiatives contributes to the preservation of biodiversity in one or more levels. The results will get much better:

"When the local community gets the mandate, and when the local community gets the rights to develop regulations and prohibit hunting of threatened species and control environmental issues. E.g. in the most Northern area they say that there is a lot of walruses, but in Nuuk (the researchers) say, that the population is weak and there is a need for hunting restrictions."

Different respondents mentioned that:

"In the remote town, Qaanaaq in North Greenland, there are strict rules on how to approach, hunt and treat narwhales, like the animals must only be approached by qajaq, and must be harpooned before it is shot. Thereby limiting the hunt."

Local restrictions also regulate the hunting of Grey Seals in the southern parts of Greenland. Grey Seals are extremely rare in Greenland and the local people wished to have it protected. The local people is also contributing with valuable knowledge when it comes to other aspects:

"Aside from PISUNA, most monitoring of Greenland's living resources takes place by hunters and fishers reporting their catch to the government and by scientists carrying out monitoring and research-based studies. The government collects harvest statistics on a national scale. The present database on harvest statistics is based on a system developed in 1993. These statistics, in principle, include all hunting in Greenland, but also egg collection and, since 2002, bycatch of guillemots and eiders."

One respondent gave a more general statement that:

"Often it is the other way around. "Eco"-tourism, farming, forestry, hunting and fishing are depleting biodiversity, but are anyway often put forward in a way indicating that they are eco-friendly, i.e. greenwashing. The clearest examples of nature conservation and maintaining and preserving biodiversity are when areas are protected as e.g. nature reserves. However, these areas are today targeted as recreational areas and thus, a loss of biodiversity in most of Sweden's nature reserves are expected in the future. Farming can in some respect increase biodiversity when e.g. grazing animals are used as they create a species rich landscape."

In urban areas, there are also people who identify themselves as holders of traditional knowledge about biodiversity management, and who contribute to upholding ecosystem services in urban areas. Several respondents mentioned the allotment growers:

"In allotment areas there is a rich biodiversity that is actively maintained. Apart from councelling regarding organic growing, Koloniträdgårdsförbundet (Allotment Society) is actively working with environmental certification of allotment societies, and to enhance biodiversity is an important part. Another example is the increasing interest in allotment societies to keep bees as well as chicken within the area. Alottment societies are also working hard with composting and developing methods for organic cultivation."

The Allotment Society of Sweden was founded 1921. It has for a long time tried to increase biodiversity in the allotment areas, since the1990ies in an organized form. Among biodiversity-enhancing suggestions is the cultivation of plants that attract pollinators, creation of me-

Allotment gardening in a suburb to Stockholm – a small-scale, often organic, self-sufficiency cultivation of vegetables. Photo: Håkan Tunón.

adows and ponds, construction of bat nest boxes and "insect hotels", cf. the journal *Koloniträdgården*. Within more modern contexts like the Transition Movement there is also courses in allotment growing, permaculture design of kitchen gardens, bee-keeping (top bar hives), forest gardens etc. The benefits were expressed as:
"Small-scale cultivation contributes to keeping local plant varieties in active cultivation and the specific knowledge about the different varieties is kept alive. Such knowledge includes everything from knowledge about how to choose the site for cultivation, over storage of produce to food preparation, and the allotment growers therefore contribute to food security. New biodiversity is to a certain extent created through mutations, crossbreeding, exchange of cuttings and seeds, and when varieties are tested in cultivation in new environments. Among the domesticated animals there is a similar development and a sound maintaining of the genetic material is kept in viable populations. In this context organization and initiatives such as Föreningen Sesam, Allkorn, POM (Programmet för Odlad Mångfald) and the associations for local breeds play an important role."

3. Can you give examples of changes in the natural environment, which are being observed by Indigenous peoples and local communities and what is driving those changes?

The respondents put forward the more general and expected changes due to climate change, land use change, and a more intense land use pattern.
"Wind, wheather and ice conditions"

"Climate changes give encroachment of woody plants. Development of infrastructure etc fragments the land and deplete biodiversity and hence the Saami culture."

"We know that the environment is changing. For example, the ice on the lakes is thinner during the winter, and the temperature has changed, which affects the herding. What we are witnessing today is a result of human activities."

"Everybody has noticed the northward spreading of the Spanish slug [an invasive alien species] due to warmer and wetter winters. Beekeepers and birdwatchers have observed problems for certain species when the weather and the seasonal vegetation is out of synch."

"Many have noticed the disappearance of colourful weeds like cornflowers and poppies in the fields because of herbicides. There is a general scarcity of wild flowers in the countryside as a result of intensive management and pollution with fertilizers. Beekeepers lose income for the same reason."

"Apart from the drastic reduction in the number of birds, which is described in a number of reports, in my village we talk about the reduction in fly species and number of flies. Some cattle flies have completely disappeared. The number of gulls that follow behind the plow and harrow have radically decreased, probably a result of a decrease in the number of soil living organisms. As farmers, we also notice that the number of solitary bees and bumblebees have decreased in spite of our efforts to give them nesting sites. A result of pesticides? The flora is also changing; the wild pansy, catsfoot and meadow saxifrage don't grow where they used to, despite the same grazing pressure."

"Biological depletion, invasive species like Heracleum spp., Lupinus sp., racoon dog, etc. The intense rationalisation of the agriculture, with ever larger units, probably contributes to the monocultural landscape. The same goes for forestry. Or should it be seen as changes in natural conditions creating a changing landscape?"

"Many witness what generally is interpreted as climate change, an increased variability in wheather, higher frequencies of extremes, flooding, etc. The Swedish forestry has during the past hundred years gone from a diversity of ecosystems with approx. 4.000 species to an industrial monoculture for timber and pulp production and a weakened ecosystem. The regulation of the large rivers during the 20th century has led to a change in the landscape, the ecosystems and the quality of life among people in the vicinity. There have also been changes in the fish populations, that especially affect those living along the coasts and by the major lakes."

"Climate change is affecting the mountain tree line. Encroachment and overgrowth close to villages is due to changes in land-use, which to a large extent affect natural and cultural values, and in the long run peoples well-being and quality of life."

The pollination of plants by bees is one of the most renowned ecosystem services, as well as an often remarked observation of a changing biodiversity. Photo: Håkan Tunón.

"Polluted soil is present in certain allotment societies or close by. Another observation is the increased rainfall."

Some of these examples suggest changes that could be observed by all sorts of people living close to the land, both holders of traditional knowledge and those that could be included in the practitioners of "citizens science", e.g. birdwatchers, anglers, etc. Several respondents mention that local people, just by being in nature and observing it on daily basis during work, make observations that might be difficult for reserachers to catch up with in the same comprehensive ways. However, few feel that the society takes advantage of their knowledge, and that it is beeing recognized.

"Local communities live close to the biological resources, and are consequently often the first to notice changes in nature, environment and the living. There are many different views on what the drivers are, but it is basically only the researcers that are ever being heard."

"There is a big difference in how observations are being made, those living in an archipelago all year around see much more than what is possible during short inventories. One example is that in a period of rapid decrease of seabirds, the county administration goes through the area by boat a couple of days per year, and this is the basis to decisions regarding management of nature protection areas. People who live in the archipelago on the other hand are there continuously all year around, and often get another picture. Increased number of visitors with GPS means people are now going to places that used to be quiet for the birds, etc".

This points to the fact that monitoring the presence of target species only, and not other environmental factors, might result in incomplete or even misleading conclusions. Another perspective is the causal connections between observed changes and the drivers behind them and future solutions, as reflected by one respondent:

"The problem with landscape overgrowth is mentioned in all sorts of contexts, e.g. in the local paper a while ago. Many people dislike the loss of landscape visibility and that the landscape of their childhood disappears or becomes unrecognizable. A problem is that most people don't understand that it isn't enough to clear-cut in order to stop the enrocahment; after clear-cutting there is a need for continuous hay harvesting and grazing, i.e. to continue with the kind of agriculture that co-developed with these kinds of environments. Not even our Ministry of agriculture understands this. She is putting 200 millions NOK to clear-cut roadsides to make the landscape more appealing for tourism, while most of the agricultural policy aims at intensive large-scale production. Many people believe that climate change is the main cause of overgrowth."

Another respondent delivers a similar reflection and points at globalisation and large-scale production as the main cause of biodiversity loss. There is not only a risk with the lack of general understanding on why a landscape looks like it does, there is also a direct risk that the actual knowledge connected to the customary use that forms the biodiversity is lost even faster.

From Greenland several respondents notice that the local communities are living close to the biological resources and consequently notice changes prior to others. However, decision makers seldom rely on the knowledge of local people:

"Around mid 1990's researchers claimed that the wild reindeer was close to extinction, while the local communities said that they have just migrated to the hinterland close to the glaciers. A few years later researchers found that the number of reindeer on Greenland was too high."

"Again in Qaanaaq species not previously observed now appear during some parts of the year, for example the first minke whale was caught in Qaanaaq 2013. Minke whales are regurlarly caught in south Greenland, with an annual quota of 179 animals set by IWC. Another example is the mackerel, the first fishery off East Greenland started in 2011, and now the annual quota is 85.000 tons."

"The most striking environmental changes are the increased temperature and decrease of the sea ice: the area with sea ice is smaller, the season with sea ice is shorter and sea ice is thinner and of poorer quality for safe travel during winter.

The number of observed polar bears, humpback whales, bowheads and geese, especially snow geese, has increased during the last decades.

The increased temperature and declining sea ice are probably driven by the global climatic changes, which are human induced (pollution).

The increased number of whales is due to population recoveries from past unsustainable commercial hunting. The snow geese are expanding their range from Arctic Canada due to increasing numbers, linked to more winter habitat in USA, as more land has been cleared for agriculture. We still need an explanation to the increased number of polar bear sighting, which could be driven either by increased numbers or by reduced habitat size on the sea ice."

There are also observations of the negative effects of increasing pressures on the use of natural resources (similar situation as in other parts of the Nordic countries, often based on fragmentation and/or degradation of the landscape due to competing interests):

More and more people go to the same spots to collect wild herbs, berries and plants (some for tea, some for food spices,

The Qaasuitsup municipality on Greenland is larger than France so it could make sense in using schemes for community-based monitoring of biodiversity and ecosystem functioning. Photo. Susanne Fahlén.

some as woodfuel when cooking in the wild), and that as a result there are fewer and fewer of the desirable plants in the popular areas each year. Many people experience the same and share their observations in informal discussions on facebook about this problem, and in an acknowledgement that there is too much pressure in certain areas. There are even suggestions that people could somehow organize their collecting in zones, where areas are left in peace for some period to recover before it is used again for collection. The Big question seems to be who should take up such an initiative to organize, and how to get everybody to follow the rules. Before, when there were fewer people living in e.g. Nuuk, certain areas where used by certain families, and in this way it was easier to take care of the resources in an area. Now there are too many people, and the "ownership" of the management is lost. People seem to lack the tools for management on their own under these changed circumstances.

From Iceland the following reflections were made:

"Fish populations in Iceland are moving, and there is a strong consensus among local fishermen and scientists that higher water temperatures are the major cause (some populations are moving away, but others are moving into Icelandic waters). This has a related effect on the puffin population, as puffin hunters have noticed a rapid decline in puffin egg laying as a consequence of poor diet—their major food items have moved (although fishing pressure is also certainly part of the story).

Local salmon fishermen say the ban on seal hunting has increased seal populations which has in turn lead to more seals eating salmon at the base of the river. Scientists are exploring these relationships more in depth.

Increased storms in the winter and spring are drastically altering small boat fishing activities—small-scale fishermen and changing fishing grounds and techniques in response to the weather."

The drivers behind the observed changes, apart from climate change, are described by one respondent as:

Actively forced changes: mines, windpower, roads, outlets, construction sites, power lines, new railroads with large rail embankments in sensitive areas, construction works destroying the living and recreational environment; often not according to current legislation or regulations, but none the less with building permits. Clear-cutting of forests, forest soil scarification, and forest driving paths. Industrial sites. I guess the reasons

Photo: Ólavur Sjúrðarberg

primarily are based on an unfortunate development of society where no proper, long-term environmental impact assessment has been made. Multi-national cooperations and relatively incompetent politicians (possibly also generally terrified). Greed is often the basic reason in many contexts.

But there are also more gliding changes, like abandoned fields, pastures or meadows. Remains of forest grazing gradually overgrown. There is a green monster wave of overgrowth in large parts of Sweden. Partly due to laws, regulations and EU-directives, not too seldom over-interpreted, and partly due to the market forces.

4. Can you give examples of impacts that existing policies and interventions have on biodiversity and ecosystem services, and as a result on the wellbeing of Indigenous peoples and local communities?

"It is important that authorities and politicians acknowledge the values that local communities and Indigenous peoples are bearers of. The political system has a responsibility to create congruence between the different legislations, societal goals and financing measures. I believe many people feel that there are political statements and responsibilities that are in direct or indirect conflict with each other and the financial means available. Such experiences contribute to undermining the confidence in the political system."

Public funding of customary sustainable land management and support for relevant work is sometimes necessary in order to create a continuation of relevant activities when the market economy is acting in the other direction. The EU Leader-programme has been important for many relevant local initatives, but:

"Local groups that want to work with local natural resource management and biodiversity often feel that authorities and bureaucrates actively restrain their action space with reference to their governmental mandate or the Public Procurement Act."

It is repeatedly stated that officials at different authorities have a lack of understanding and knowledge about the realities of customary use:

"When it comes to the summer pastoralism there are several doctoral thesis and reports about the difficulties created by laws and regulations, showing that there is an immense ignorance regarding the reality of summer pastoralists and their conditions. For instance the infamous example of authorities demanding digital receipts at a summer farm without electricity and mobile phone coverage. (It is not valid only there – the tax authority demands electronic handling of receipts in all businesses, disregarding the fact that no machines work when it is cold outside. The Swedish National Electrical Safety Board prohibits the use of the available machines in cold weather as it might harm the users. And the Ministry of Finance is refusing to deal with this issue.)"

Many respondents have concerns over political decisions that they mean are affecting biodiversity as well as livelihoods negatively in rural areas; this is visible over the whole Nordic area. The frequent changes of the political and financial systems also create difficulties for the local users of biological resources and therefore also the biodiversity it self:

"Constant shifts in the EU and national agricultural policies have negative consequences for the conservation of biodiversity and for the farmers' economy. Probably it is the same for reindeer husbandry. These businesses are contributing to ecosystem services that are about to disappear if nothing is done. The situation is urgent."

"Changes in agricultural policy always have great impact on nature in Denmark. One example: Fallow fields have been compensated for many years and many areas developed a rich biodiversity. When compensation stopped, most of these fields were turned into arable land again and biodiversity was lost. The result was certainly a loss in wellbeing for local people although hardly led to any economic loss."

One of many summer farms with solar cells – a way to get electricity. The issue on how to get mobile phone coverage is however another story. Phot: Håkan Tunón.

"The Environmental Act, the Minerals Act, the Reindeer Husbandry Act and related legislation put the socio-economic interests in the first place. They do not take environmental and cultural perspectives into account."

The globalization has led to societal changes among the people and social structures:

"Import of "cheap", food and other products – in monetary terms – where our "needs" create environmental problems/ catastrophes in other, often developing, countries. Their living space is destroyed to allow us a "good, or even excessive life" and to be kept happy??!! In our rural areas, our food production is "unprofitable" within the predominant monetary system that we worship, and consequently the shops close down and we move into cities – the highest urbanization rate in Europe or the World?"

The agricultural policy is according to the respondents still – or again strongly focused on largescale industrial production:

"The minister of agriculture in Norway today is strongly pushing the development towards large scale farming, i.e. the kind of farming that maintain a biodiversity rich cultural landscape will be closed down and we will see the same situation as in Sweden, i.e. more urbanization, centralization, disappearance of most of the agriculture and rural communities all over the country. «Climate mitigation » with tree planting on open, semi-natural farmland is an immense threat to biodiversity! In addition to this there is an increasing problem with large carnivores in Norway that will create problem for farmers using the outlying land, and consequently the biodiversity."

In Sweden the changes of the agricultural landscape has been more extreme than in Norway and this has been commented by respondents:

"Historically it was crucial with biodiversity in agricultural landscapes, no matter where, to be able to survive. Today there is a small part of the traditional summer farm pastoralism that still remains, which endures in a totally different society. But the access to diverse forest grazing, fresh water in natural springs, good opportunities for the animals to rest, protected from large carnivores and more, things that are unconditional prerequisites to meet the animals' and peoples' needs for life and food security, as well as the quality of life of the farmers."

Within the EU there is also a discussion regarding genetic diversity in farming which was highlighted by one respondent:

"The discussions withing the EU when it comes to production of material for plant propagation might have far reaching consequences for the cultivated biodiversity. The proposed legislations that has been withdrawn, were jeopardizing the supply of available seed material."

Wolf excrement in the winter close to a summer farm in Dalarna, Sweden. In Sweden and partially in Norway the distribution of large carnivores coincide with the remaining free-ranging summer farm pastoralism. Photo: Håkan Tunón.

The respondents also commented on the EU-subsidiaries that were considered to be too general and too much top-down:

"The EU subsidies are sweeping, static and "top-down". ILK is place-bound, constantly changing and bottom-up, with animals, plants and people in interacting processes. This discrepancy means that the EU subsidies constitute one of the main threats to both ILK and biodiversity. It is not wrong to pay compensations for added values, but the directives must be designed differently. One could learn from the way the forest subsidies were designed.

Another threat of an authoritarian and static bureaucracy is that one of our most important drivers, our autonomy, disappears with the constant controls by an agency as "policing" as the county administration (and the Swedish Board of Agriculture). The lack of interest in our own knowledge leads to the loss of our self-confidence and the disappearance of pleasure in our work."

In spite of this the subsidiaries are extremely importat, since there are higher costs in the smallscale farming for instance. EU has also contributed with money for Leader-projects and thus given some ILK-representatives opportunities to restore biodiversity etc., that otherwise wouldn't have existed. The challenge appears to be linked to the way subsidies are designed, and how

its administration is implemented and perceived. This is of course crucial for achieving the expected positive effect of subsidies from targeted policies towards environment, biodiversity conservation and different forms of support to rural development and entrepeneurship. There appears to be a conflict in values between the way of living well as perceived by many groups of holders of knowlege on customary pracises related to biocultural diversity, and the way society is practising its natural resource management at large. It seems to be difficult to overcome this value conflict with directed policies of support that do not necessarily imply that the actitude to the customary governance systems needed to maintain the supported activities is perceived as respectful.

One respondent reflected on the negative effects:
"from a lack of acknowledgement from official circles" and also on the problem of "conflicting ideals and poor quality management within the present wildlife reintroduction policies".

The present policies seem to focus on partial sections of the biodiversity without regarding the impacts on others, rather than seeing the areas within our region as ... depending on each other with a holistic view on the conditions for co-existance. ... Our low input grazing regimes have a large potential to be restored to an historical size, thereby increasing the economy for individuals and wider society in marginalised rural and remote areas as well as safeguarding the biodiversity at the same time.

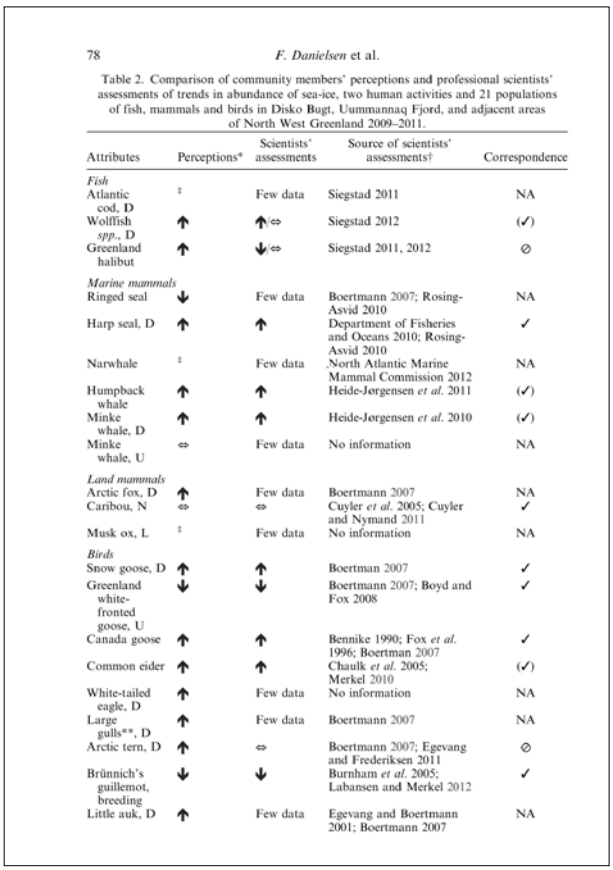


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Table 2. Comparison of community members' perceptions and professional scientists' assessments of trends in abundance of sea-ice, two human activities and 21 populations of fish, mammals and birds in Disko Bugt, Uummannaq Fjord, and adjacent areas of North West Greenland 2009–2011.

Attributes	Perceptions*	Scientists' assessments	Source of scientists' assessments†	Correspondence
Fish				
Atlantic cod, D	‡	Few data	Siegstad 2011	NA
Wolffish *spp.*, D	↑	↑/⇔	Siegstad 2012	(✓)
Greenland halibut	↑	↓/⇔	Siegstad 2011, 2012	⊘
Marine mammals				
Ringed seal	↓	Few data	Boertmann 2007; Rosing-Asvid 2010	NA
Harp seal, D	↑	↑	Department of Fisheries and Oceans 2010; Rosing-Asvid 2010	✓
Narwhale	‡	Few data	North Atlantic Marine Mammal Commission 2012	NA
Humpback whale	↑	↑	Heide-Jørgensen *et al.* 2011	(✓)
Minke whale, D	↑	↑	Heide-Jørgensen *et al.* 2010	(✓)
Minke whale, U	⇔	Few data	No information	NA
Land mammals				
Arctic fox, D	↑	Few data	Boertmann 2007	NA
Caribou, N	⇔	⇔	Cuyler *et al.* 2005; Cuyler and Nymand 2011	✓
Musk ox, L	‡	Few data	No information	NA
Birds				
Snow goose, D	↑	↑	Boertman 2007	✓
Greenland white-fronted goose, U	↓	↓	Boertmann 2007; Boyd and Fox 2008	✓
Canada goose	↑	↑	Bennike 1990; Fox *et al.* 1996; Boertman 2007	✓
Common eider	↑	↑	Chaulk *et al.* 2005; Merkel 2010	(✓)
White-tailed eagle, D	↑	Few data	No information	NA
Large gulls**, D	↑	Few data	Boertmann 2007	NA
Arctic tern, D	↑	⇔	Boertmann 2007; Egevang and Frederiksen 2011	⊘
Brünnich's guillemot, breeding	↓	↓	Burnham *et al.* 2005; Labansen and Merkel 2012	✓
Little auk, D	↑	Few data	Egevang and Boertmann 2001; Boertmann 2007	NA

There is a need for a general policy to recognize the transhumance pastoralists' activities and for support and safeguard in law, to make it doable to continue the practices.

There is a need to facilitate holders of traditional knowledge and their organisations to participate in policy processes not only by name but also as properly shared and integrated recognized holders of knowledge.

It is important to fully trace the historical level of co-existence between wildlife and domesticated livestock regimes and related human activities to safeguard the biodiversity on a larger scale. We need to understand and recognize how it was managed to co-exist without modern miss-interpretations.

We need to learn from history and clarify why different eras came up with different policies, to serve what were the agendas of these times, to enable us to make better decisions for the future.

The Swedish farmers practicing transhumance are spread over vast areas ranging from the big lakes up to Torne älv at the border to Finland, and along the whole mountain range between Sweden and Norway. There is greater resemblance in practices from the west-east rather than south-north, and regional differences in the practices carried out, mainly due to the level above sea rather than physical distances. Thus we consider our regimes of transhumance pastoralists within the Nordic context to be as one.

Summer farm pastoralists have negative experiences of when authorities appoint individual practitioners as experts. Established representative organisations are the relevant for accurate exchange of knowledge. They will appoint appropriate expertise in each field.

Some of the respondents from Greenland claim that the politicians in Nuuk are seldom of rural origin, and this affects the politics and consequently the situation and co-existence for biodiversity, ecosystems and livelihoods. The populations of eider and Canada goose is estimated to be abundant, nevertheless the local communitites are not allowed to collect egg from them, since the researchers say the bird popoluations are too low or the birds can't be disturbed while moulting. The situation at the islands of Grønne Ejlande and the problems with foxes among the arctic terns has been mentioned above (see e.g. under question 2).

Greenland's Ministry of Fisheries, Hunting and Agriculture together with the Nordic Foundation for Development and Ecology point out in their response that:

Part of a table comparing the knowledge from local communities and scientific data from *Polar Geography* 2014, 37:69–91.

"Many species of fish, seabirds and mammals are regulated by the Greenland Government. These regulations influence what hunters and fishers can legally hunt and fish, as well as when and where.

We have previously assessed the current regulatory framework in order to identify potential decisions that local authorities could take for natural resource management. We found that, for fish, seals, cetaceans, musk ox, caribou, and birds, the local government authority could take only a few decisions independently of the central government, namely (Polar Geography 37: 69–91; 2014):

1. Reducing the time or area and adjusting the methods and gear used to fish and hunt and

2. Sub-dividing the nationally set quotas and bag limits into smaller units specific to, e.g., the sex and age of animals, the hunting area, the hunting community, or the individual hunters' registration as either a full- or a parttime hunter.

Within the Nordic Council of Ministers project "Nordic Resource Management", we are currently pilot testing new formats and approaches for locally-based documentation and management of populations of musk ox and caribou in Southern Greenland.

Examples of impacts of existing policies on biodiversity and the wellbeing of local communities in Greenland and elsewhere in the Nordic and Arctic are provided in the publication Local knowledge and resource management (2015)[4]."

On Greenland, a participatory monitoring system, PISUNA (www.pisuna.org) was designed to build upon and strengthen such existing informal community-based observation and management systems (*Polar Geography* 37: 69–91; 2014):

"The background to PISUNA is that scientific knowledge of the environment is incomplete and conventional scientific monitoring is logistically difficult. The fishers and hunters observe the environment all year-round. Their observations and knowledge are, however, not consistently quantified, analyzed, or used for resource management. PISUNA is a simple, field-based system for monitoring and managing resources which was developed specifically to enable Greenlandic fishers and hunters to document trends in living resources and to propose management decisions themselves. This system was designed to build upon existing informal observing methods. The experiences from PISUNA show that community-based documentation can pinpoint particular species and areas that are in need of attention. At the same time, it can help link observed environmental changes to management action. The first phase of PISUNA ran from 2009–2011, the second is running from 2013–2016."

4 *available at the link: http://norden.diva-portal.org/smash/record.jsf;jsessionid=JepZqTC_da_370NkuSZkX3A_ZqSp-CB_iceCOoXc3.diva2-search3-vm?pid=diva2%3A791816&dswid=-5685*

PISUNA[5] has contributed to 14 management recommendations, including: setting quotas (2 proposals), changing hunting seasons (5), identifying research needs (3), altering fishery bylaws (2), and others (2). The local municipal authority has so far responded to 11 of these 14 proposals.

In the PISUNA project a comparison has been made between estimations made by members of local communities and researchers regarding population trends and changes in a total of 24 different items (fish, bird and mammal species, winter sea ice, offshore ships and trawling). Of these the local communities and researchers agreed on 12 and disagreed on 2, and for the remaining 10 the researchers did not have enough data draw any conclusions. This is a concrete and interesting example of how experiences and observations from different knowldege systems can support one another for better understanding of biodiversity, with the aim of better informed decisions and policies.

Regarding external factors like the international market etc. that affects the local use of biological resources, other respondents from Greenland say:

"Allowing bottom trawling in fjords and close to spawning grounds decreases inshore biodiversity and threatens local fish stocks accessed by part time fishers."

"In Greenland, new fisheries are being started, for example for mackerel inshore in Western Greenland, encouraged by the government. Also trade of seal fur is being subsidized by the government, supporting the sale of 52.000 skins annually, where a sustainable harvest could be up to 500.000 animals. The high population of seals can have an impact on fisheries."

"Greenland has signed several bilateral and international agreements for the management of shared populations, these includes the large whales, walrus seal commercial important fishes. (E.G. IWC, NAMMCO, NAFO, CITES and ICES). Hunting restrictions have resulted in documented increase for several populations, which in turn has given the possibility of larger quotas."

A more general reflection, with value from the Nordic persepctive:

"It is important that our authorities and politicians highlights and give recognition to the values created by local communities and indigenous peoples. The politics also have a responsibility to synchronise and create congruence between different legal systems, goals and financing measures."

From a Saami (as well as an Inuit) perspective it is stated that:

5 *Polar Geography* 37: 69–91; 2014.

The national legislation system is unable to protect our rights as indigenous peoples, and resource extracting has an influence on us and our way of life. For example, the forestry, mining and gold digging are affecting our life, and traditional livelihoods.

5. Can you give examples of benefits connected to the inclusion of ILK in different contexts, for example in the IPBES Nordic assessment, but also elsewhere, such as in environmental impact assessments?

The purpose of this question was to highlight what could be gained in the decisive process by including ILK. What benefits are there for the society including for ILK and the knowledgeholders? Interestingly enough, at least five respondents that have delivered responses on most of the other questions, remarked that they just didn't understand or would not answer this question. This could perhaps be seen as a sign of the complexity of the subject that is expected to be covered in an IPBES assessment, and that inclusion of ILK in IPBES being seen as a general opportunity to get attention and recognition for the ILK as such, rather than the importance of IPBEs per se being the reason to take part in the scoping of ILK in a Nordic IPBES assessment. However, in order to make the complex simple and the global local there is a need to realize that:

"The local people living of the land are those that first notice and feel any changes, and thus are those that provide better and more uptodate suggestions for changes in the legislation, when it comes to for instance issues related to the environment."

The joint response from the Greenland's Ministry of Fisheries, Hunting and Agriculture, and the Nordic Foundation for Development and Ecology focus on an important aspect:

"We believe that a major challenge for delivering international environmental agreements is that of linking the agreements to decision-making on the management of natural resources in the "real world". Involving local stakeholders in monitoring the environment can not only raise awareness among the public and policy makers about the environment but also crucially enhance management responses and improve the speed of decision-making to tackle environmental trends at operational levels of resource management. We have written extensively on this in the scientific literature, kindly see our papers in Cons. Lett. 7: 12–24; 2013 and J. Appl. Ecology 47: 1166–1168; 2010. In other words, if the IPBES Nordic assessment is to lead to changes in the "real world", it is crucially important to involve local stakeholders in the assessment." [our underlining]

However, even if there are good intentions and examples when the local influence is valued and local perceptions are listen to, there are also cases where the authorities just don't want to leave the power:

One can have different opinions concerning the traditional Faroese pilot whale harvesting and people do. It is considered to be a traditional hunt and has been on-going in a similar manner for more than a thousand years. The annual harvesting is in average 800 whales of an estimated population of 780 000 and the meat is divided among the inhabitants of the islands. Photo: Nazuna Nakao.

A local example is Kustringen in Kalix, which is a sad story, the local people had the Ministry of Environment and the municipality behind them, but the Swedish Environmental Protection Agency and the county administration was strongly opposing any local management ideas. I overheard when the representatives privately were explaining that one need to understand that you can't let the local people get a right to govern an area. "What if the Saami would claim the same rights"…!"

Dialogues with local communities are perceived as important by the respondents respresenting holders of knowledge, but they also present some doubts regarding the seriousness from the authorities to actually involve them:

If authorities have a good communication with the local communities, everyone gains. But one shouldn't pretend to listen and then anyway continue in another direction than agreed. Mutuality is crucial and dialogues can't be just a public relation-thing. There are many people that want to decide regarding the development of the archipelago, and have fine ideas on what to do, but very few realize that the islands actually belongs to farms. It makes sense to actually include people living in an area in the work of monitoring it! It is important that local people are participating in the process. ...All too often things are done over the heads of landowners and those who live and work in the area. Nobody is more caring about local nature and its long term sustainable use than those who are there all year round. It is in our hearts. Trust this more! … There is an enormous amount of knowledge among both the old and the young who have seen changes over the years, perhaps during a long life. If that knowledge is respected, researchers and authorities can find a treasure to draw from. But acknowledge who shared this knowledge. Show the everyday knowledge of ordinary people. … When decisions are made we don't really count. The regional authority knows best…"

Another respondent writes:

"Since it is about specific groups it is important to consider and take care of their knowledge, often based on years of experiences, sometimes generations. They can contribute with important aspects regarding their traditional areas, and it could in this context be crucial that these are considered, both for the local people, but also for the society as a whole."

An important perspective is that the local people often have a fairly holistic view on how the landscape is goverened, while political decisions or those regarding management issues do not necessarily take the whole picture into consideration:

"Economy, activity and a sustainable future are the direct drivers with indirect effects from a lack of acknowledgement from official circles with another large factor of conflicting ideals and poor quality management within the present wildlife reintroduction policies. The present policies seems to focus on partial sections of the biodiversity without regarding the impacts on others, rather than seeing the areas within our region as intergrated and depending on each other with an holistic view on the conditions for co-existance. When conflicts are spotted the system tends to act on the most known factor as if it does not depend on the others."

Another constraint in this context is the issue of time and resources:

"When it comes to cultural environments, local actors' perspectives of the value and importance of places have been highlighted since the Australia ICOMOS published the Burra Charter in 1999. However, so far no one has found a method that can collate the views from all the different actors. Questionnaires and dialogue documentation have been tested in Sweden. The precondition to include ILK in for instance an EIA is that the local knowledge, as well as local buildings, gardens, natural values, etc., is already documented and thouroughly described before the EIA work starts. In most cases this work will be procured with competitive bidding and there won't be any time (or economy) to start any collection of new knowledge."

This reflection is at the heart of what IPBES are struggling to tackle in its development of procedures and approaches for dealing with ILK. The dialogue concept, where specificed topics are to be discussed with holders of knowledge, and the dialogue being documented, is an example of what is being piloted.

To find ways to allow a slow process and avoid time constraints and pressure towards a fixed tight deadline directed from above might actually be a success factor:

"Local water boards are great examples of how to take advantage of the local knowledge that exists. Also to take in opinions and information from local NGO's in specific issues or projects. Several such examples exist from Gotland. However, the processes are often slow and filled with administrative obstacles in the way of progress."

Many conflicts are springing out of not being aware of and taken into account secondary effects on customary use that is dependent on access to natural resources such as access to grazing areas and sertain amount of water, in infracstructure development, tourist establishment etc when providing permissions. The effect of many "minor" decisions in the same direction, might cause severe constraint for e.g. customary cattle rearing dependent on grazing areas

The knowledge from ILK is important in many cases. A common situation in the mountain is building hotels and holiday

houses in the best grazing areas, or on the track between one grazing area and another. The hotel and house owners will have trouble with grazing animals and keeping fences. A lot of conflicts could be avoided if this was taken into account in early planning stage.

The value of the indigenous peoples' knowledges and perspective not only for their own furture, but for the sustainablility of society at large was highlighted:
"Indigenous peoples have so much knowledge about nature and its diversity, that could help the whole society if used correctly, if there is a willingness to listen. For example reindeer herders are still with the herd in the forest most of the time, and see all of the changes.

Saami who live close to nature holds much knowledge, including field knowledge of the landscape. The Saami language holds much knowledge. The Saami have a long-term knowledge of sustainable use of nature."

From Greenland the responses from the authority and a local community representatives showed slightly different perspectives on how knowledge are included in the management and governance systems and decisions:
"Greenland is unique in the management of the living resources, since there is a high proportion of ILK holders among the decision makers, including the Greenland Parliament, the Cabinet and the Municipalities, which include the Settlement Councils. The Naalakkersuisut Siulittaasuat and Naalakkersuisoq for Fisheries Hunting and Agriculture (respectively Prime minister and Minister) are both full time hunters and several other members of the Government are directly linked to hunting and fishing.
A hearing system secures that the fishermen and hunters are consulted in connection with the regulation of the use of the different living resources. On top of that, the Hunters and Fishermen have a strong organization, KNAPK founded in the 1950-ies, and which are often included as observers in the international management fora."

"In Greenland there is not much resource management based on ILK, most areas are internationally managed, and also some nationally managed, species are managed based on scientific data, which is required by most international bodies. Even around Qaanaaq where there have been long traditions of locally managing the harvests of marine mammals, presently quotas are set by the national government.
Some new project have been started to include local indigenous knowledge and observations, like PISUNA."

Another Greenlandic respondent reflects that:
"Only the last few old hunters in Greenland actually know about the environmental fluctuations and the characteristic changes."

When is "traditional" traditional and when has it turned to a large-scale industrial enterprise? Icelandic whalers in the harbour of Reykjavik with strong engines and harpoon cannons as well as modern navigation equipment. Photo: Håkan Tunón.

6. Can you give some key elements and good examples for the full and effective participation of Indigenous peoples and local communities in processes regarding biodiversity and ecosystem functions and services? Think about some processes where you have been involved.

This question received a lot of attention from the respondents and we start with an extensive and detailed reply from one respondent:

"It is absolutely crucial that the decision-making authorities respect and listen to the ILK-groups. It is important to be receptive and not try to take shortcuts and neglect the knowledge and the demands these groups represent. I can give a multitude of examples when central authorities and sometimes also the academia simply overrun the ILK-representatives. There are several things that can be done to strengthen the position and possibilities of ILK, e.g.:

a) There ought to be some kind of ombudsman that can watch and actively push the ILK-questions forward, regarding needs, demands and requests. This should be done in a greater context and continuous assessment and development,

b) Extraction companies should not be allowed to do their own environmental impact assessments, these should be done by an external actor. It could be done as with archaeological investigations – let the county administration decide who or what company that should do the work, and at what level it should be done, i.e. how much should the EIA-cost, costs that the company should finance. A presentation of ILK representatives views should always be compulsory.

c) revise the appeal process, so that an appeal should be submitted directly to the relevant court and not indirectly through the authority whose decision is being appealed. The court ought first to take the decision and the appeal under consideration and only thereafter request the reflections from the authority concerning the appeal.

d) strengthen the universities' third assignment – collaboration with society - and provide resources for research especially in this area.

e) create routines for increased cooperation between the research society, authorities and NGO:s / ILK:s representatives. And develop a research and experience bank were facts about ongoing projects and research is documented.

f) programme to maintain the tactile and traditional knowledge

g) every ILK-community should define who they really are, as Gudrun Kuhmunen has done when it comes to the Saami[6].

Definitely not allow the method used by the county administration in Dalarna that stubbornly denies the summer pastoralists their right to decide for themselves who they are and what that means.

It is also important to bear in mind that a person from a local community or an indigenous people can have different roles and have somewhat different opinions dependent on the context. I believe this is well described in Karin Beland Lindahls doctoral thesis regarding forest conflicts in northern Sweden, the Jokkmokk area[7].

The issue of successful processes was a difficult question! At first I couldn't think of any, then I realized I have taken part in many during the past decades, e.g.

- *Intryck Hälsinglands report "Manual för levande landsbygd" (Manual for a living countryside)*
- *Nordic Joint Committee for Agricultural and Food Research (NKJ) has had a working group regarding the correlation betweenagriculture, cultural landscape and rural development*
- *the Nordic-Baltic ManTra-project (MANagement and conservation of TRAditional landscapes in the Nordic and Baltic countries, 2004–2007. Council of Nordic Ministries)*
- *Nordic Association for Cultural Landscape as well as the "Agrarian historical Association.*
- *the EU-project CULT-RURAL – Promotion of a Cultural Area Common to European Rural Communities within the Culture 2000.*

Most of these "projects" have worked well, however, they have had their flaws. Much work has been done within this field and is stacked away in report piles, which could be properly used. It ought to be forbidden to use public funding and not in anyway use the results!"

There are at least two levels in processes related to biodiversity and ecosystem services, with regard to the participation of indigenous peoples and local communities. The first is to ensure the indigenous and local knowledge is asked for and taken into account as a useful and valid contribution to an IPBES assessment, EIA or any other process. The next issue is whether the contributed ILK holders' policy views will be taken into account in the decisions, based on the facts presented in the assessment. Decision makers may maintain that they have taken on board the knowledge, but still make decisions in a direction other than the one ILK holders feel would be the best for them. This is issue, which is beyond the assessment as such to deal with. It is an issue of power

6 Balto, A.M. & Kuhmunen, G. 2014. *Máhttáhit – re-educate them and us!: Saami self-determination, nation-building and leadership.* CállidLágádus, Kárásjohka-Karasjok.

7 Beland Lindahl, K. 2008. *Frame analysis, place perceptions and the politics of natural resource management.* Uppsala. (http://pub.epsilon.slu.se/1810/1/Karins_Acta_Thesis_080829_slutversion.pdf)

balance and the weight of different values in decision-making. It will not be possible for an ILK component in an IPBES assessment to foresee or guarantee how the knowledge compiled in an IPBES assessment will finally be used by decision-makers, regardless of whether the ILK is clearly used and visible. However, if the ILK is clearly visible this is a starting point and hopefully it will strengthen the weight of ILK and indigenous peoples and local communitites in the polictical process. But it is important that all involved in the process are aware of what we are dealing with in each part of the process.

The normative perspective on our society was raised by one respondent:

"Rural areas, i.e. the RESOURCE-areas, have to at least get some space to exist in the present societal development, the urban area can't be the only norm. Rural people have participated in different "projects", which have led to what? But we have at least been included. Maybe we're wrong, and resource governance (economy) does not seem to exist in its true context. Everything is measured from shortsighted profits in money or time, if there is any profit at all in the long run. Globalization is a factor negatively influencing the scene. In what way will a Canadian multinational company care about the environment and people's living conditions, or how a sustainable society is formed in the inner areas of Scandinavia? Isn't it just the quarterly gain that counts? I do not think they understand, or want to understand, the effect of lost biodiversity, the ecosystem services are "free" anyway??!!"

Another respondent, from a Saami perspective, points out that:

"The "Laponia process" is a good example and unfortunately the only example of full and effective participation."

From a Finnish respondent the work with a national implementation of the Akwé: Kon guidelines (developed within the CBD) is taken as an example of effective participation:

The key would be the successful implantation of the UNDRIP[8] and especially the FPIC[9]. The indigenous peoples should always be involved as soon as the project starts up to the decision making, and not only to negotiate, but also to give their consent. In Finland, the Application of Akwé: Kon Guidelines *in the Management and Land Use Plan for the* ***Hammastunturi*** *Wilderness Area is a good example.*

Yet another reflects that there are:

"many ongoing processes and dialogues, within the present theme, but there are many people that experience that they in many cases don't lead to any practical improvements. A good example, that often is highlighted, is the restauration of Säveån. The National Board of Forestry has for a couple of years initiated dialogue processes regarding environmental caution within forestry. Within the Rural Developmnet Programme, the Leader-programme, etc. there are many networks, project and other initiatives that are related to these questions. Within the Transition movement there is a diversity of local environmental initatives covering anything from art exhibitions and practical issues of cultivation to political activism. In general there is knowledge about changes in the local environment among the members of local historical societies (hembygdsföreningar) and huge documentation in the shape of photos, letters, articles, etc."

Regarding participation on equal terms one respondent mentioned that:

"The village group in Svartådalen has been restoring the cultural landscape and tried to make it accessible. One of the keys to success was that the local enthusiasts in the project had good local connections, but also good contacts within the hierarchy of the authorities. It is a shame that you have to have "the right contacts" in order to succeed, since this means that development processes aren't on equal terms and include a certain amount of corruption."

From a authority official with extensive practical experience from projects regarding farmers' partipation:

"I have during my years at the county administration worked in several project dealing with councelling viz-á-viz farmers in the area. My contribution has mainly been related to the preservation of cultural values. The focus of my councelling has always been to fulfil an actual need of the farmers. What is the level of ambition, what tools are available, what are the time limits, financial resources, etc.? I believe these things are important to consider in order not to miss the target. If the participants from local communities and indigenous peoples are to participate in different processes it has to be on the same terms as researchers and officials. This is unfortunately very seldom the case. We can't expect them to do the job for free! Some of the projects performed to develop the summer farm pastoralism have been aiming to increase the participation from the summer pastoralists. This is a perspective that should be more common."

The Norwegian work with cultural landscape has resulted in several interesting pilot projects that is mentioned as examples of effective participation:

"A part from the Utvalgte kulturlandskap i jordbruket and Handlingsplanene for semi-naturlige naturtyper (Action plans for selected cultural landscapes in agriculture and Action plans for semi-natural biotopes), Storfjordprosjektet (Norderhaug et al. 2004) was a successful project. Cultural

8 United Nation's Declaration of the Rights of Indigenous Peoples

9 Free and Prior Informed Consent.

values in three different municipalities was documented and presented on a digital map with extra information, which was easily available for the county administration. Action plans for different levels were developed (from cultivated land to landscape) and such plans can be used to support good cultural landscape management. The report is thus a practical tool from regional to local level. The project was developed in cooperation between the cultural landscape groups at county level, a local working group, the municipalities and the people from the project. The project was followed by several local development projects. Cultural landscape centre in Telemark (www.kulturlandskapssenteret.no) is another project that is worth highlighting. It was built on result from processes in the two neighbouring areas Hjartdal and Svartdal. In these areas many cultural landscape projects have been implemented during the past decades (research projects, development projects, etc.). This has led to the development of local interest and engagement, such as the Cultural Landscape Centre and an annual mowing festival. Countless volunteer work days have shown what you can achieve if you work together. Old meadows and patures have been cleared and managed, pollard trees have been pollarded again, houses and fences have been restored and roadsides cleared and signposted, for local people and tourists.

The key elements in such process are the involvement and cooperation between various levels of governance, i.e. it is important to include the knowledge and the ideas of the farmers. Economic support for work-intensive and otherwise demanding projects is really important."

The responses from Greenland related to examples of effective participation were both extensive and diverse. Several of them deal with how processes regarding local influence on the governance of wild game have been evolving:

"In the Disko Bay there is a group of islands called Grønne Ejlande, on these islands people used to live or move there in the spring. When people stopped going there foxes moved in and are now terrorizing the nesting of the arctic tern. The researchers claim that it is the local community that is about to eradicate the arctic tern through egging. This is just one example of the weight of the statements from researchers. The local community has requested other regulations than those of the central government but has not been heard. However, when it comes to the hunt of Canada goose the hunting has been changed somewhat according to the requests of the local community[10]. Recommendations regarding the management of certain species are still being processed in the Self-Government."

"There are not many examples of inclusive management actions initiated by local communities. Although the government is trying to implement a program for increased participation of local communities, in the management of local and regional resources (Open Doors to Local Knowledge). A locally based initiative that can be mentioned is a survey for muskoxen organized by the municipalities of Naternaq area in 2008, which resulted in a minimum count that allowed for an increase of the quotas. The Hunters and Fishermen's Association, (KNAPK), The Inuit Circumpolar Council, (ICC), The Association for the Municipalities, (KANUKOKA), Institute of Natural Resources and Climate Center, as well as the Governmental Departments has been actors with interest regarding the issue."

PISUNA[11], is a project that is "Opening Doors to Local Knowledge" and testing locally-based monitoring of living resources. In their respons to the questionnaire they:

"suggest the setting up of local documentation and management systems in other Nordic countries. In Greenland, PISUNA is such a programme. In the other Nordic countries, there are other existing local documentation and management systems that could be expanded and scaled up. An overview of Arctic community based monitoring schemes is available at: www.arcticcbm.org.

The US and several other countries are at the moment developing strategies for how to incorporate the use of "community-based" and "citizen science" approaches for improving their management of natural resources. Developing such strategies is equally relevant and important in the Nordic countries.

Professional scientists have been skeptical about the results of participatory schemes. However, in recent years many studies have shown that, if properly designed, participatory monitoring can provide reliable results for low costs; it is rapid, locally relevant, and capable of building capacity among the local constituents.[12]"

A possibility for full and effective contributions that really reach and include the local level in assessments proposed by another respondent would be to go to communities and interact.

"it would be possible to go to communities and conduct interviews and questionnaires, or to do telephone questionnaires, or social media campaigns (primarily facebook) that try to

10 Another respondent mentions: "During the past years the canada goose has invaded Greenland every summer and it was the local communities that first submitted the suggestion on changes in hunting season. Also other birds are being closely monitored by the local community."

11 http://www.pisuna.org/uk_index.html

12 See for example the papers in *Polar Geography*, *BioScience* 64: 236-251 (2014) and *Cons. Lett.* 7: 380–389 (2014).

engage people to share their experiences, maybe even with a competition element in it."
From following people on facebook the respondent has noticed that more and more people around Nuuk:
"go to the same spots to collect wild herbs, berries and plants (some for tea, some for food spices, some for burning when cooking in the wild), and that as a result there are fewer and fewer of the desirable plants in the popular areas for each year. Several people have experienced the same, and share their observations in informal discussions on facebook about this problem, and in an acknowledgement that there is too much pressure on certain areas there are even suggestions if people could somehow organize zoning, where areas are left in peace for some time period to recover, before it is used again for collection.The big question seems to be who should take up such an initiative to organize, and how to get everybody to follow the rules. Before when there was fewer people living in e.g. Nuuk, certain areas where used by certain families, and in this way it was easier to take care of the resources in an area. Now there are too many people, and the oversight and "ownership" of the management is lost. People seem to lack the tools for management on their own under these changed circumstances."

Reflecting from work in Denmark and other countries one respondent discussed:
"how one could obtain relevant local community member information on biodiversity and ecosystem functions and services in Denmark.We think such information is mainly available with three different groups of people:
(1) Users of the natural resources in Denmark,
(2) Amateur nature-interested people, and
(3) Researchers.
The information that each of these groups of people possess will vary from each other.
At the moment, the easiest way to quickly obtain access to local community member information would be by contacting the existing organisations and institutions (like sportfishers and ornithologists) that possess this knowledge. In recent years, various types of digital technology have been introduced to quickly record environmental data and to potentially mobilize many community members to take joint action on e.g. environmental issues.
In the future, these nascent approaches may provide an important opportunity for accessing further local community member information on the environment and for mobilizing community actions on the environment.At the moment, these approaches are however generally only at the piloting stage in Denmark.
There is an urgent need to find suitable ways for how one can realistically and meaningfully involve local community members and local community-based organisations and the information on biodiversity and ecosystem functions and services they possess in the actual monitoring and management of natural resources in Denmark. Such approaches could for instance be very important in the terrestrial and marine Natura-2000 areas, which comprise a substantial proportion of the Danish territory, see: http://naturstyrelsen.dk/naturbeskyttelse/natura-2000/natura-2000-omraaderne/fakta-om-omraaderne/. *Aside from generating important biodiversity information and mobilizing community action on the environment, such approaches would enhance the local ownership and responsibility to manage and conserve the areas and their biodiversity. In Nordisk Fond for Miljø og Udvikling, we have spearheaded such new approaches to environmental management internationally, and we would be pleased to work with you and others to develop, test and implement solutions to this challenge in Denmark and elsewhere in the Nordic countries."*

Additional reflections from several different respondents related to full and efficient participation merged together show the need for:
- respect for the ILK and its contribution
- arenas to meet on equal terms
- full information, clear definitions and full transparency in each project
- participation of indigenous and local representatives as full members in the project, already from the start – that ILK representatives are also part of development of the methodology, interpretation of results and follow up
- suitable incentives for participation

7. Suggest groups in the Nordic countries possessing Indigenous and local knowledge, which are relevant to be consulted in an IPBES Nordic assessment (according to you)? Include suggested contact points, if possible.

Since the text referrers to "indigenous and local knowledge", the immediate interpretation at least includes the indigenous peoples within the Nordic countries and consequently the Saami people and the Inuits are to be included. This is something that repeatedly is mentioned by several of the respondets, as well as the necessity to include the official bodies:
"Saami are obvious because it is indigenous. Saami Parliaments in the three Nordic countries are the natural focal point for the Saami interests."
Furthermore additional Saami actors are suggested as very relevant: Saami villages, the Saami Council, the Saami reindeer herder's associations in the different

The indigenous peoples of the Nordic countries, the Saami people and their different land use, e.g. reindeer husbandry, hunting and fishing, and Inuit, mainly hunting and fishing, are important in a Nordic IPBES assessment since they have a close relationship to local biological resources and their land use is influencing vast land areas. Photo: Tero Mustonen.

countries, and the reindeerherding cooperatives operating in the Saami homeland (Sápmi).

From Greenland the suggestions are very concrete and organized:

a) Department of Fisheries, Hunting and Agriculture: Amalie Jessen, Nette Levermann, Øystein Slettemark, Nuka Møller
b) Department of Nature, Energy and Climate, Martin Schiøtz
c) KANUKOKA, Zenica G. Larsen
d) KNAPK, Bjarne Lyberth
e) Grønlands Naturinstitut, Christine Cuyler og Lene K. Holm
f) Qaasuitsup Municipality, Paviarak Jakobsen, Adam Hansen
g) Inuit Circumpolar Council, Parnuna Egede
h) Nordisk Fond for Miljø og Udvikling, F. Danielsen, M. Enghoff, M. K. Poulsen, S. Brofeldt
i) Aarhus University, E. Topp-Jørgensen, F. Merkel
Arctic Council's Circumpolar Biodiversity Monitoring Programme (including community based monitoring) and the Arctic Local Based Monitoring Network (PISUNA),

Furthermore, also other non-indigenous academic initatives within the indigenous interests were highlighted as relevant to be included.

When it comes to the interpretation of local communities it tends to get less obvious, however, most focus on a broad and inclusive interpretation. We let three different respondents contribute to the general idea:

"There are so many self-evident groups/representatives, that it feels presumptuous to suggest a few."

"one could easily submit thousands of suggestions – if one only had the time to prioritise this. And consider to what extent the small and weak actors may participate."

"… and local communities include associations or groups with common interests, e.g. allotment growers and beekeepers."

Many responses also highlight the importance of including:

"The summer pastoralists and their association, farmers, Saami villages, and local historical associations, as well as other non-profitable organizations."

"The summer pastoralist, naturally! And all those that in one way or another still is working on the land."

Summer farm pastoralists as well as other small-scale farmers in other marginal areas, like out in the Baltic Sea archipelago, play an important role in both biodiversity conservation and maintaining local cultural identity. Photo: Håkan Tunón.

Organizations or actors like The Norwegian Association for Transhumance and Pastoralism (Norsk Seterkultur), The Swedish Association for transhumance and Pastoralism (Föreningen Sveriges Fäbodbrukare), Valdres Natur- og Kulturpark, Norsk Sau og Geit (Norwegian sheep and goats), small-scale farmers association in Sweden and Norway, Swedish Archepelago Farmers, and coastal fishermen were mentioned, but:

"We do not advocate individual practitioners as appointed experts as it has been wellknown misuse by authorities. Known representative organisations are better for accurate exchange of knowledge as they will appoint appropriate expertise in each field".

It is also important to combine rural development, cultural landscapes and its values. For instance, people with experiences from the World Heritage Site work in Helgeland and Vega with a focus on cultural history, biodiversity, and local economy issues, are relevant to include. Which is also the case with people that previously have been involved with different relevant projects regarding local communities and cultural landscapes and their natural and cultural values, e.g. ManTra (MANagement and conservation of TRAditional landscapes in the Nordic and Baltic countries, 2004–2007. Council of Nordic Ministries) and the NKJ-report "Maintenance of the cultural landscape as a resource for sustainable agricultural development" (Norderhaug et al., *Bioforsk Report*, Vol. 1, No. 117, 2006).

Other groups mentioned in this context is:

- "*Hela Sverige ska leva* [the whole Sweden should live] consists of approximately 5.000 local development groups (village or parish councils, community associations) organized in 24 county departments. These local groups are the first societal level and are to promote public interests. When speaking about "local communities" in a Swedish context it is suggested that these 5.000 groups are highly relevant."
- allotment growers' associations (www.kolonitradgardsforbundet.se,
- local historical societies and individual members
- old people in small fishing villages, old type hunters / farmers, some old rangers / artists attached to their childhoods local areas, old farmers attached to local museums

- Nordic Association for Cultural Landscapes and individual members (http://kulturlandskab.org/)
- Groups dealing with genetic heritage. Associations for local breeds and local plant varieties, and individual members (e.g. Föreningen Sesam www.foreningensesam.se, Allkorn http://www.allkorn.se)
- associations with interests in landscaping and cultural landscapes
- the Transition movement
- the network in connection with the journal Åter and the homepage alternativ.nu is an important way to reach many people with an interest in biodiversity and ecosystem services
- The Swedish Programme on Plant-Genetic Resources (POM) and other comparable national programmes
- The Swedish Craft Laboratory – National centre for crats in conservation in Mariestad, University of Gothenburg, an attempt to integrate traditional knowledge and academic methodologies.
- Some of the rural historians are devoted people within a diversity of disciplines, that may prove useful for such an assessment.
- Local museums, their backing groups and local archives, as well as National museum, dep. of Ethnology

Most respondents made suggestions from their national situation, but this can be used to inspire their national actors to look for comparable bodies in their coutry. From Denmark it was suggested to include:

a) *Danmarks Naturfredningsforenings lokalkomiteer* (associations for nature conservation, all over the country)
b) *Private skovejere* (private forest owners)
c) *Landmænd* (farmers)
d) *Jægere* (hunter associations, *e.g. Danmarks Jægerforbund*)
e) *Fiskere i Danmarks Sportsfiskerforbund* (anglers)
f) *Ornitologer i lokalafdelinger af Dansk Ornitologisk Forening* (bird watchers)
g) *Nationalparkernes komiteer af lokale frivillige naturinteresserede, bl.a. i Kongernes Nordsjælland Nationalparken* (national park's committees consistin of local nature interested volunteers)

As well as importat databases, like "DOFbasen", and "Fugle og Naturbasen". Finally there are also different citizen science initiatives, performed by birdwatchers, anglers, hunters, WWF and the Danish Association for Nature Conservation, e.g. the newly established projects NaturNu, HavNu, NaturCheck, and BioWide. Furthermore, there are important statistics on fishing and hunting."

One respondent highligths another important question:

"What examples or case reports can inspire governmental agencies to respect the role of ILK in their work and in society as a whole?"

and mentions for instance the Tarfala Research Station (University of Stockholm):

"who is developing close research and monitoring cooperation with the local Saami community.This is one of many station in an arctic research station network (INTERACT) that works closely with local communities and in the future we hope the be able to develop local monitoring strategies that provide all relevant information to local communities facilitating adaptation to climate change by combining information from different knowledge sources."

Furthermore, the respondents have additionally suggested many individuals, both researchers and ILK-knowledge holders, which will be listed separately.

A final reflection from one of our respondens illustrates the finetuned balance between on the one hand the will and desire of believing in the future, take part and act based on the ILK and local identity, and a certain amount of resignation on the other. This is a message that we have observed in different expressions all through this questionaire:

"Think global act local! Sometimes I lose faith and this leaves me with the feeling that no matter what «the one who is richest when it all goes to hell, has won»"

Conclusion

"IPBES – that is a good word … Or is it just another case of a cosmetic change, bread and circuses to the people to keep them calm?"

Reflections by a respondent

There is a challenge for the IPBES as a process to actually manage to at first raise and then meet the expectations of the ILK-representants. It is important in this respect to distinguish between the mobilization of knowledge and its presentation in the Nordic IPBES assessment, and the final use of this knowledge. Through the present scoping study and in a possible future Nordic IPBES assessment, we can hope tohave impact on the IPBES process and to some extent on the understanding in academia and among scientists of the importance of indigenous and local knowledge. How the conclutions and recommendations from the assessment will be further used as a base for informed decisions and policymaking is something we cannot directly influence. However, an inclusive process with contributions from a diversity of knowledge systems is a prerequisite for a good process that leads to actions at the next stage.

The answers submitted by respondents reflect many different dimensions and aspects of social-ecological systems, and human relation to nature, as well as issues of power balances, differences and similarities, in cultures across communities in the Nordic countries. The respondents express a clear wish to reflect and communicate their knowledge, experiences and views related to these matters, even if all respondents haven't shared their views on all questions. Many times there is a frustration over what they perceive as power imbalances, and for not being recognized for the values and knowledges they embraces. It is clear that intercultural spaces are needed for sharing and learning and making knowledge about biodiversity visible. This is a unified and most important message from the respondents generally, far beyond the issue of how to include ILK in a Nordic assessment.

General summary of the answers:

1. Can you give examples of how biodiversity contributes to the livelihoods, food security, and quality of life of Indigenous peoples and local communities in the Nordic countries?

Naturally, indigenous peoples and local communities give many examples of connections and dependencies on biodiversity both as a resource for survival and income, and for human wellbeing and different values that relates to quality of life. However, we are all ultimately wholly dependent on biodiversity and ecosystem services. The rural people, living closer to the natural resources, are more directly dependent, while the urban population still purchase most of what is needed from the global (and local) market (an indirect dependence). Dependency on biodiversity for a good quality of life was emphasised. "To hear the skylarks drill, the lapwings meow, the cranes trumpet is our reward. Without them and all their sisters and brothers, there is simply no life for us."

One reflection put forward in the answers was that ILK in the Nordic countries mainly remains in the rural areas and the same goes with the continuation of customary use. However, allotment growers are according to several answers a good example of an urban continuation of ILK, where important observations are made and knowledge is maintained and transferred in pockets of biocultural memory in areas that are critical for human wellbeing, since so many of us live in urban areas. Biodiversity and ecosystem services, and knowledge about their functions and values are of critical importance there, and thus of strong relevance for a Nordic assessment. Otherwise examples of ILK activities, and consequently relevant "communities" for a future Nordic assessment, involve animal husbandry, agriculture, fishing, hunting and many other direct uses of biological diversity and ecosystem services.

2. Can you give examples of how Indigenous peoples and local communities in the Nordic countries conserve, manage and create biological diversity?

The answers to the second question follow in the same line. For instance small-scale cultivation and the grazing of semi-natural grasslands contribute to a certain and specific biodiversity, based on ILK. Customary use of biodiversity as such also strengthen a local awareness of the values and links between culture and biodiversity, and the need to maintain local biodiversity and thus indirectly contributes to conservation activities.

3. Can you give examples of changes in the natural environment, which are being observed by Indigenous peoples and local communities and what is driving those changes?

Different signs of climate change are frequently mentioned by the respondents, as well as changes in po-

pulation structures of different species. People working on the land, no matter if it is at the fields in southern Scandinavia or the coast of northern Greenland, collect huge amounts of observations and experiences related to biodiversity and ecosystems during each year, by living in the area and see what's going on every day, that ought to be reflected in an IPBES assessment.

4. Can you give examples of impacts that existing policies and interventions have on biodiversity and ecosystem services, and as a result on the wellbeing of Indigenous peoples and local communities?

When it comes to impacts from existing policies and interventions many respondents have concerns over political decisions that they mean are affecting biodiversity and livelihoods negatively in rural areas; this is visible over the whole Nordic area. Urbanisation, centralisation, changing from small-scale customary use to large-scale industrial production, global trade, climate mitigating activities with tree planting on meadows were seen as problems. The success in re-establishing populations of the large carnivores, including seals, is a repeated concern and seen to severely threaten local customary use of biodiversity. The EU subsidiary system as implemented today was pointed out as many times having negative impact on the possibility to continuation of customary use and the conservation of biodiversity. Responses also highlighted that there are incongruences in the national policies, legal systems, etc. that will lead to a decrease in biodiversity and ecosystem services, and many of the values connected to a rich biodiversity.

5. Can you give examples of benefits connected to the inclusion of ILK in different contexts, for example in the IPBES Nordic assessment, but also elsewhere, such as in environmental impact assessments?

The general reflection is that ILK-holders possess valuable knowledge which is different from the other kinds of knowledge which a Nordic assessment will be able to collect, analyse and present; knowledge that is both general and local in its applicability and based on experience gathered over a very long time.

6. Can you give some key elements and good examples for the full and effective participation of Indigenous peoples and Local Communities in processes regarding biodiversity and ecosystem functions and services? Think about some processes where you have been involved.

Full and effective participation of ILK holder in the Nordic IPBES assessment will have to be based on mutual respect and a serious ability to listen. Free and prior informed consent as well as a full membership in the process is needed. It is also important not to try and take shortcuts in order to reach a result in a short time. Furthermore, it is important to actually go to the local

Animal husbandry with local summer grazing and collection of winter fodder has been repeatedly stated as positive from a biodiversity as well as a sustainable development perspective. Photo: Håkan Tunón.

place and talk to the people, as a centralized process in a foreign language will generally not result in a true participation of the local community. Interesting experiences are being generated by innovative programs like PISUNA. Likewise, the Laponia process was highlighted as a good example of full and effective participation of indigenous peoples and local communities in processes regarding biodiversity and ecosystem functions and services, but it was according to the respondent the only one when it came to Saami conditions.

7. Suggest groups in the Nordic countries possessing Indigenous and local knowledge, which are relevant to be consulted in an IPBES Nordic assessment (according to you)? Include suggested contact points, if possible.

Groups that were pointed out as relevant for possessing ILK of value for a Nordic IPBES assessment, in addition to Indigenous peoples, included amongst others hunters, small-scale fishermen, small-scale farmers (e.g. summer pastoralists, archipelago farmers), allotment growers, associations for local breeds or local varieties, local history societies, associations with interests in cultural landscapes, the Transition movement, and people involved in traditional agricultural techniques like hay-cutting, grazing, and pollarding for conservation biology. Museums, outdoors museums and especially museum farms are also important actors and play an important role in public awareness and in linking present day traditional knowledge to the historic past. From a citizen science point of view groups like bird watchers, amateur botanists and entomologists, environmental NGO:s and similar are highly relevant. Finally, there are particular individuals that based on their own capacity could make essential contributions. During the project, many holders of indigenous and local knowledge in the Nordic countries have confirmed their interest to share and exchange their knowledge with others.

Replies to the questionnaire were submitted (individually/jointly) by:

Anna-Karin Utbult, farmer in the Swedish Baltic sea archipelago
Ann Norderhaug, former head of cultural landscape research, Bioforsk, Norway
Benny Gäfvert, forest ranger, De 5 stora, Sweden
Bjørn Pedersen, Nordisk KulturlandskapForbund, Denmark (Nordic countries)
Calle Höglund, Gävleborgs fäbodförening, Sweden
Catherine Chambers, Hólar University College, Iceland
Elmer Topp Jørgensen, Aarhus University, Denmark
Kristina Belfrage, farmer & researcher, Swedish University of Agricultural Sciences
Eva Karlsson, County administration of Jämtland, Sweden
Finnish Saami Parliament
Fredriksdals museums and gardens, Helsingborg, Sweden
Greenland's Ministry of Fisheries, Hunting and Agriculture, together with the Nordic Foundation for Development and Ecology
Viktoria Hallberg, Sveriges Hembygdsförbund
Ylva Lundqvist Fridh, Hela Sverige ska leva
Björn Hjernquist, Föreningen GutefårAkademin and Naturskyddsföreningen Gotland
Sameslöjdstiftelsen, Saami Duodji, Sweden
Maria Flinck, Garden Historian, Sweden
Joakim Lilja, Hantverkslaboratoriet, University of Gothenburg
Koloniträdgårdsförbundet
Lena Bergils, NGO representative for summer pastoralist as well as local historical societies, rural development issues, former museum official
The Hunters and Fishermen's Association, (KNAPK),
The Inuit Circumpolar Council, (ICC),
The Association for the Municipalities, (KANUKOKA),
Institute of Natural Resources and Climate Center, Greenland
Parnuna Egede, Inuit Circumpolar Council, Greenland
Pauline Palmcrantz, Föreningen Sveriges Fäbodbrukare
PåviåraK Jakobsen, Qaasuitsup municipality, Greenland
Finn Danielsen, Martin Enghoff, Michael K. Poulsen and Søren Brofeldt, Nordisk Fond for Miljø og Udvikling
Ronny Pettersson, small-scale farmer
Swedish Saami Parliament
Katarina Sparstad, Norsk Seterkultur and Valdres Natur- og Kulturpark, Norway
Søren Espersen, Kulturlandskab.dk
Nina Söderlund, Skärgårdsinstitutet at Åbo Akademi and Ramsö in the city of Pargas, Finland (Skärgårdshavets biosfärområde)

Snowchange ILK Nordic IPBES Report – 2015

Tero Mustonen, PhD, Snowchange Cooperative, August 2015

1. Background

The questions of Indigenous and local knowledge (ILK) in Finland are in a state of flux. This work report documents four workshops and reviews a case of mining exploration in the North Saami community of Utsjoki to provide leads and discussion points on the role, relevance and next steps of local and Indigenous knowledge.

In Spring 2015 NAPTEK and the Swedish Biodiversity Centre (CBM), through Swedish specialists and coordinators, requested Snowchange Co-op, a non-profit, independent organisation to organise workshops on the local and Indigenous and local knowledge to explore the situation in Finland. Snowchange has been working for 16 years on the questions of traditional knowledge, land use, climate change, livelihoods and other relevant spheres internationally, in the Arctic, and domestically both in the Finnish villages and in the Saami areas of Finland.

For the sake of clarity for this report, two knowledge categories are explored – the Saami Indigenous knowledge and what can be broadly categorized as "Finnish traditional local knowledge", manifesting in the rural, often peripheral, areas of the country. Therefore issues of Roma, Finnish-Swedish and other local knowledge discussions are omitted to focus on the themes and geographical directions of the workshops and materials.

In general tension and analytical frame of Indigenous and local-traditional knowledge exists along generic – specific horizon. Institutions, such as the Arctic Council, have for years sought blanket definitions of traditional, Indigenous, local and ecological knowledge (including 'citizen science'). This is often explained on the need for access and usability of such knowledge in monitoring, science and documentation of change. Indigenous discourses on the same issue stresses the specific, unique, explicit role and beings this knowledge may have.

Differences, flowing from this tense arrangement, emerge also on the contents of what is seen to constitute the knowledge – institutions, and 'outsider' definitions may satisfy themselves with documented texts, photos, artwork, statements, videos, audio, maps or other accessible expressions of Indigenous and traditional knowledge. People with close relations to ecosystems, such as fishermen, as well as many Indigenous authors stress often that a documented view on 'knowledge' is not the same as the 'real thing' – rather, the knowledge has to be 'lived, experienced' – it is situated and cannot be removed or separated from the place or ecosystem where it is.

Here, the author has on purpose omitted the academic materials and referencing, for the most part, from the report to allow further space on the voices of the people from the workshops and meetings. Similarly, as IPBES is only emerging in Finland and not all people were sure what it might imply, participants are quoted, for the most part, anonymously, from the workshops. Notes and individual details are in the possession of the author to maintain high-end methodology and quality of the work.

1.1. Finns

In Finland, outside the Saami area, the Finnish local, traditional knowledge has no legal or official status. It is often referred to in various colloquial terms, such as examples:

- *perinne* = 'tradition'
- *perinnetieto, -taito* = 'traditional knowledge, -skills'
- *paikallinen tieto* = 'local knowledge'

- *kokemus, käytänne* = 'experience, practice'
- *vanhat asiat, tavat* = 'old things, habits'
- *kalassa, mettällä, sienessä, marjassa* = 'in fishing, in forest hunting, in berry-picking, in mushroom picking', i.e. the local-traditional knowledge is embedded in practice-linguistic expressions and actions

The traditions of Finnish territories of Finland are also varied and distinct. In general a major difference in dialects, mind set and approach to these themes runs across the East – West divide of the country. Due to socio-historical reasons, such as preservation of Russian Orthodox Church in Kainuu and North Karelia and extreme poverty, which was more tolerant to local traditions than the Protestant Lutheran Church from Sweden, the eastern parts of the country have been seen to 'preserve' older aspects of traditions to do with hunting-fishing-cosmology-forests.

Temporally the scope of traditions, including formation of new traditions, can be divided, for the sake of argument for this report, into four major timelines:

- Until 1939: Finnish rural areas are fully dependent and retain strong aspects of traditional livelihoods, community cohesion and soft ecological footprint, meaning that the boreal ecosystems, which are the source of the endemic traditions of the Finns, are more preserved. This marks already the large-scale uses of forests for slash-and-burn farming and early industrial logging. Alternate date could be established at 1860s, when literacy and schooling emerge, and slowly start to penetrate to the community life guided by local cosmologies, practices and oral histories, for example the 'Kalevala' songs of the east
- 1945–1990: Period of heavy-handed modernisation and industrialisation of the country, combined with severe damages to marsh mires, lakes, forests, rivers, and other habitats. Major demographic changes in rural areas due to losses of people in the war, and immigration to industrial centres and Sweden for work. Politically semi-closed society with bilateral trade with Soviet Union, self-censorship in press, limited public society.
- 1990-2003: Opening of the country to West, joining EU, multilateral trade, and development of NGOs and establishment of Green Party, various UN, EU and other international arrangements on bioculturral and heritage issues, introduction of Environmental Impact Assessment. Regionalisation and partial federalisation, Natura 2000.
- 2003-2015: Divergence. Finland keeps many of its international ecological and socio-cultural initiatives in place, such as in UN. The Saami rights and discussions continue. Internally there is a growing shift back towards heavy-handed natural resources economy, in 2009 the independent Environmental Centres are destroyed / amalgamated with business and transport. In late 2000s Finland seen internationally as the 'Golden Land' of mining, as the permit process is quick and effective and monitoring-permitting is at all time low. Spring 2015 sees the new Government to proclaim the Age of Bio-Economy (of natural resources), where the 'bureaucratic obstacles', such as the right to appeal to Supreme Administrative Court for environmental reasons will be limited. Further reductions in the environmental monitoring capacity, and possible merger of ministries to produce 'Ministry of Natural Resources' in late 2010s.

1.2. Saami

Finland, as defined in the constitution has three Indigenous Saami peoples – Inari, Skolt and North Saami. The "Saami Home Area", as a part of *Sápmi*, the homeland, is often seen to include territories of Enontekiö, Inari and Utsjoki municipalities and the area of Lapin paliskunta reindeer co-op in Sodankylä. The Saami have their own parliament, the *Saamidiggi*, located in Inari. This Saami Parliament is defined under the Ministry of Justice, and is a part of the Finnish state structure.

The Saami livelihoods come in many forms. Of these the reindeer herding is the best known in Finland. The modern reindeer year revolves around the following cycles:

A *Calving*: The young calves are born between late April/early May and June. The majority of the calves are born in the 'wild' in the calving areas. After that the reindeer are released to the summer pastures to roam freely.

B In mid to late June the reindeer are gathered for *calf marking*. Round ups are carried out in specific reindeer cooperative locations, where the herds are counted, the new calves marked with ear marks and then the reindeer are released to roam freely until autumn in small herds ranging in size from a few animals to dozens at a time.

C In the autumn the reindeer mate, after which they are collected into *reindeer, corrals* and separated – the respective owners determine what animals will be butchered, ownerships are re-affirmed and the animals to be kept are counted. The work at the corrals often involves extended families and networks; whole villages can be involved.

D After separating the animals, they move to *winter*

pastures. Over the past five years, after mass deaths of reindeer in winter due to thick ice layer between pasture and snow all reindeer cooperatives have begun to use artificial fodder in addition to the natural lichen pastures.

E After possible further separations for slaughter, additional corrals are organised to determine the ownership and group attachment of each reindeer. After that the animals are moved to *spring pastures*, and the reindeer year begins anew.

Other Saami livelihoods and occupations relevant to the IPBES include, but are not limited to; fishing, hunting, berry picking and other forms of subsistence activities, as well as handicrafts.

Members of the Saami Parliament are voted in public elections every four years. The current President is Mrs. Tiina Sanila-Aikio, who replaced Mr. Klemetti Näkkäläjärvi in Spring 2015 when he resigned as a protest to actions of the Finnish state. In addition to Saami Parliament, there are several Saami organisations dealing with the Indigenous knowledge, including the reindeer herding cooperatives, Saami reindeer herding organisations and other public and private associations.

In the years of 1917-1990 Saami knowledge, as seen by the mainstream society, mainly manifested in ethnographic and folkloristic interests where the research, directions were often defined by the universities and outside experts participating in the work. Much like other Indigenous peoples around the world, the research pressure on Saami traditions was immense – the local joke in the Saami home area concluded that a Saami family is mother, father, ten children and a researcher.

1990s enabled the discussion of Saami knowledge as a cultural-political concept to emerge in Finland as elsewhere. Towards 2008 the relations with the state, in tandem with UN and international developments, opened the door to define the Convention on Biological Diversity, Article 8(j) in a national context.

The Saami Parliament and the state agreed that in Finland the 8(j) definitions of local and /or indigenous knowledge refer to Saami knowledge exclusively. According to this agreement other Finnish citizens are not considered to possess such knowledge.

The Agreement on the Article 8(j) led to some practical 'rights' or privileges in the Saami home area, including, but not limited to access to timber and other small-scale natural resources in 'state lands', development of management plan in Hammastunturi wilderness area which is more inclusive of the international standards and the spirit and intent of the Article 8j. This includes also the principles of free and prior informed consent (FPIC). The Saami have been active participants in the United Nations discussions on Indigenous knowledge, for example as seen in the outcome document of the World Conference on Indigenous Peoples 2014 (http://www.un.org/en/ga/search/view_doc.asp?symbol=A/69/L.1)

The Article 8(j) work was related to the attempt to ratify the International Labour Organisation Agreement 169 on the Indigenous rights in Finland. It has been on the table and in demand in the country since early 1990s. Despite years of negotiations, on the final days of the parliamentary season 2014-2015, the Finnish Parliament, in the preparatory committee meetings, prevented the Agreement from proceeding. This was a major disappointment to the Saami, and led to the Saami Parliament's President Klemetti Näkkäläjärvi resigning from his post.

The civil and academic society discussions of Saami knowledge have come to life especially in the 2010s. The Saami themselves, led by world-known scholars like Elina Helander-Renvall and Rauna Kuokkanen, have argued for the explicit, culturally-specific, 'owned' nature of Saami knowledge, that at the same time is Indigenous knowledge as with many other such nations, and yet, specific, unique and culturally rooted in the homelands of the Saami. Interfaces and juxtapositions have emerged on the questions of 'can knowledge be blanketed and owned', 'who is Saami', 'what implications for rights and responsibilities Saami knowledge has' and so on. Artists like Wimme Saari, Nils-Aslak Valkeapää and more recently directors like Pauliina Feodoroff have offered interpretations of Saami knowledge through their art.

Despite the varied and rich academic and social materials that Saami themselves and others have provided and continue to provide on the question of Indigenous knowledge in Finland, relatively few grounded and ecosystem-focused examples have emerged. The Saami have shared their knowledge for various Arctic Council reports, such as the Arctic Climate Impact Assessment, Arctic Biodiversity Assessment and regional initiatives. Science papers and monographs have emerged that touch on the topic. The national decisions on Article 8(j) are amongst the first to try to produce management and resource-use implications. Nevertheless it is still a field much in emergence.

If we investigate how the political leadership discusses the current moment in time, we can review recent statements by President of the Finnish Saami Parliament, Skolt Saami Tiina Sanila-Aikio who worked

as the Vice-President until Spring 2015, when Klemetti Näkkäläjärvi resigned. As she is involved in both worlds, the reindeer herding and Saami politics, she feels "torn" (Kärki 2015) between these realms.

Sanila-Aikio sees the current leadership of the Saami in Finland to consist of many young people, which is a very positive step: *"We young people have now been given a lot of responsibility in the Saami society and community. I am happy and grateful for that. People trust and believe in us."* (Kärki 2015)

President Sanila-Aikio as *"a situation of no progress frames non-ratifying of ILO 169 and problems in relationships with the state. For example the ratification of the ILO 169 Agreement, which in principle guarantees Indigenous rights, has been on the table now for 25 years and people have worked hard to achieve that. Still the Agreement has not been ratified in Finland. I feel we were betrayed. Everything had been agreed on beforehand with the state [before it was put before the state committees]. Yet the proposal was amended and changed so that it was no longer what we agreed to initially."* (Kärki 2015)

President Sanila-Aikio feels that *"the juridical position of the Saami would have greatly benefitted from an approach where the Saami Parliament would be a partner in preparatory processes from the beginning with state officials."* (Kärki 2015)

In another recent statement President Sanila-Aikio summarized the basis of Saami life: *"Traditional Saami occupations and life ways [reindeer herding, fishing, hunting, handicrafts] maintain and uphold Saami languages and culture. Threats to these activities come in many forms, from pollution, climate change, other forms of land use and other occupations."* (Niemi 2015b)

1.2.1. Case of Mining Law and Gold Digging: Summer 2015

The Mining Act of Finland (10.6.2011/621) was reformed in 2011. It provides the Saami Parliament to issue binding statements on the professional gold mining conducted within the Saami home area. Flashpoint territories for this practice the Lemmenjoki National Park in the municipality of Inari where the gold mining is conducted professionally.

A recent exchange of views in national press provides a window to how the local practitioners of mining and the Saami see the situation differently. Niemi (2015a) quotes Antti Peronius, the Head of the Gold Diggers of Lapland: *"The new Mining Act is very bureaucratic and allows all sorts of troublemaking."* This refers to the right of the Saami Parliament to issue statements regarding harvesting of gold inside the Lemmenjoki Park.

President of the Saami Parliament Tiina Sanila-Aikio responded to these statements in the same paper (Niemi 2015b). According to her: *"One single permit for gold digging is not causing major damages, but the cumulative impacts of many operations within a single area cause impacts which cannot be considered minor. The current starting point where TUKES [national mining authority] provides the licences for digging without any consultations with the Saami status as indigenous peoples of the region is unbearable."* President Sanila-Aikio justifies this approach on the difference of how culture is understood: *"Unlike the majority populations, the Saami understand culture to be a vast concept. It contains, amongst other things, language, traditional occupations, material and spiritual heritage and a special connection to nature."* (Niemi 2015b).

She sees the possibility to address both the needs of the gold mining and Saami culture jointly, when the Saami occupations are seen to be equal in permit process as the industrial activities Niemi 2015b). This would require a study of the *"real consequences"* of gold mining towards Saami occupations and use this inquiry as a basis of decisions (Niemi 2015b).

While the gold mining issue is a regional and local land use confrontation (the mining plots are small and cannot be compared with open cast mines), it contains some of the most clear examples and real experiences of Saami rights in relationship to industrial land use. The practitioners, the miners wish to see the business as usual to continue. The opposition and statements of the Saami parliament are seen as 'troublemaking'. Accordingly, the Saami have used the right to issue statements, as one of the first forms of recognized mechanism to argue for their side of things. The justification for opposition to the gold mining rests, in major terms, on:

a) Difference the Saami have in their relationship with nature
b) Understanding of culture in a more vast concept as the mainstream populations, so that it includes occupations and life ways, language and connections to the home areas

2. Method: Workshops and processes

The Snowchange Co-op was in Spring 2015 asked to investigate various aspects of a Nordic methodology on how ILK could be included in the future IPBES assessment. After many consultations, the Finnish situation was solved in a two-way approach:

Pilot workshops in the villages of Selkie-Alavi, Kesälahti and Kerimäki as mechanisms to portray and discuss Finnish local traditional knowledge issues

Some of the residents of Sevettijärvi, seining

a) Pilot workshops and a review of role of Saami Indigenous knowledge in the case of diamond mine proposal to Utsjoki municipality 2014-2015 and the first collaborative management project of Finland, the Näätämö watershed activities with the Skolt Saami
b) This approach was felt to be an effective mechanism to convey cultural, socio-economic and other differences in the Finnish and Saami knowledge discussions in the frame of IPBES.

2.1. Finnish workshops:

The first Finnish local traditional knowledge Workshop was organised in the village of Alavi, North Karelia (with participants from the village of Selkie) as the monthly event of the Jukajoki Catchment Area Restoration Project. It was held on the 23rd, May 2015. All together 10 people participated in the event. The objective was to discuss and review the role and success of including local knowledge of aquatic ecosystems, fisheries and ecosystem restoration of the Jukajoki catchment area 2010-2015, including a dialogue with limnologists.

The second and third workshops on Finnish local traditional knowledge were held in different parts of the world-famous lake Puruvesi. On 24th May 2015 the first event took place at the Kesälahti Fish Base on the shores of Puruvesi, and altogether eight professional winter seiners, participated. As a part of the workshop aftermath, local school children were taken on lake to measure water visibility of this high biodiversity lake. Eight people took part.

The second workshop was organised in the village of Kerimäki on the Savo region, on the Western side of the lake Puruvesi. Kerimäki event was co-organized with the Finnish Foundation for Water and Lake Fisheries. On the Savo side of lake Puruvesi a high-level event was organised with the foundation to discuss the historical events, state views and future steps of local knowledge, and management into consideration.

2.2. Saami Approach and Workshops:

The situation of Utsjoki differed from other events. After consultations with the community members and Snowchange Saami coordinators it was decided to inform the key actors in Utsjoki. Then Swedish partners and Snowchange agreed on an approach where no community workshops would be organised (yet). Rather, the divisive and relevant diamond mine development in Kevo, Utsjoki, would be analyzed and discussed, due to the fact that Indigenous Saami knowledge and land use played a major part.

For the second pilot area of Saami territories in Finland, the Skolt Saami watershed of Näätämö River, a similar workshop approach was initiated as with North Karelia and Savo regions in the Finnish 'heartland'. Two workshops were held. First one took part as an all-Saami event in mid-July on the river Näätämö and in the village of Sevettijärvi. A second Workshop, organised by Snowchange Co-op researchers met with Saami in the village of Keväjärvi, Sevettijärvi and Kirakkajärvi between 24th and 26th July 2015. Due to a high-season

limitations in organisation and availability of all-village meetings, individual visits to Elders were conducted in their private homes to have them involved as well. Site-specific field visits complemented the approach, to review the ecological-climate changes taking place in the Näätämö catchment area. All together about 15 people took part in the Sevettijärvi events and meetings.

Detailed reports with outcomes from all the workshops, as well as a review of the case of ILK in mining prospecting process, are presented in chapter 4 in this report.

3. General Results and Recommendations from the workshops

The Workshops and case analysis provided rich materials of both Saami and Finnish discourses on Indigenous and local-traditional knowledge. They also captured the vastly different IPBES issues and Indigenous–local –traditional-matrix of our country.

3.1. Finnish Results

In Jukajoki restoration activities partly similar voices emerged as in the Saami situation in Näätämö. 'Real' ecosystem restoration is underway, driven by local traditional knowledge and science. Primary wader habitat has been established in the catchment area due to the actions of the villagers. International recognition, such as the UNEP Best Practice stresses the need to include, work together and seek new avenues, innovations that build on local traditions, land uses and culture. Jukajoki can therefore seen as a top-end, multi-million euro attempt to put to practice and communicate, and receive the IPBES approach.

In Puruvesi lake, in North Karelia and Savo, typical Finnish context emerges. A communal use of an ecosystem was first replaced with demarcated territorial use, and then subjected to heavy-handed top-down governance, whether for natural resources or conservation action. This leaves the local communities, families and councils in a limbo. There are no mechanisms of including traditional knowledge and / or observations in management or governance at all. Instead the 'status quo' continues, while the lake contains remarkable examples of traditional-cultural practices such as the winter seiners of Kesälahti.

3.2. Saami Results

As a result from the Saami workshops and experiences for this report, a mixed message emerges. In mid- to late -2000s the Saami invested heavily in securing their official status in the national implementation of Article 8(j) and then moved on to try to get the ILO 169 ratified. This implies that the strategic vision of Saami Parliament approached the solutions of knowledge, rights and culture as an agreement with(in) the Finnish state.

Parts of the approach succeeded and parts of it failed. The effort within a national interpretation of CBD:s Article 8(j) work did produce 'real, concrete' rights on uses of the land, and first and foremost, some awareness to a vacuum of public debate on the issue. It also heightened the latent conflict into a simmering conflict of Saaminess, identities and rights. The Saami managed to exclude the Finns and minorities, such as Karelians, from the official Article 8(j) definition in Finland.

On the questions of rights, the ILO 169 ratification ended, for now, to the failure of the Finnish state to move on the compromise that the Saami Parliament had agreed to. This has had severe blowout throughout the Finnish Saami villages, society and peoples. The current situation is adversial and in conflict.

What emerged also from the workshops is that the North Saami argue for the *unique* status and being of their knowledge. They claim they possess knowledge, laws and ways of human organisation fully independent from the definitions provided by national or international means, as is clear from the materials that can be seen in the Utsjoki diamond mining and the discourses Saami employ in that.

Second realization from the Utsjoki materials is that despite the achievements of Article 8(j) and Saami Parliament, the other agencies of Finnish state, such as TUKES, dismiss these as mostly irrelevant when making their decisions. Additionally, Metsähallitus and ELY, the official actors in the Utsjoki case, did not at all argue *for* Saami impacts in their complaints, rather the *general harm* was the main justification for their actions. This would imply that while Saami themselves have moved ahead, and achieved much in restoring and creating new in Indigenous knowledge (and rights), the institutions and agencies of the state-business world are far behind. Consequently, little is changed in reality when it comes to the right issues.

On the case of the Sevettijärvi materials, a rare positive development can be seen. It has some characteristics of more international approach to management and governance of waters and lands. The Workshop participants identified various steps, where first the invisible Saami land use and observations are made visible, then visualized in maps which outsiders can understand, moving to a dialogue with scientists, and lastly into discussions of ecological and cultural restoration have value as a 'first experience'.

The Näätämö materials and workshop voices seem to indicate that if / when the legal status of lands is even partially guaranteed, as through the Skolt Saami Act, the Indigenous community people are willing to partner, and work towards commonly-defined, positive aims, in this case, addressing the climate change and habitat issues of Näätämö watershed. The Workshop also stressed the *practical* aspect of Saami knowledge – it is very hands on, while contains the links to the millennia of living in the North boreal ecosystems and nature. The Näätämö project implies to support local biodiversity (Atlantic Salmon) and freshwater mussels as key species, seeks to restore habitats to increase biodiversity and does it in ways that combine Saami knowledge and science, each in their own terms.

3.3. Specific recommendations from this report based on the workshops outcomes

Summary recommendations from Finnish Workshops and materials to look how ILK can be included in a full Nordic IPBES assessment:

- Potential usefulness of IPBES for the different groups of knowledge holders depends on the position of the observer and individuals. Saami have tried to secure such usefulness through previous work with Article 8(j) and other examples in the past years. They continue to maintain an active presence and rhetorics in the international spheres, such as the UN. To what extent these translate into domestic change and reform is another story. The Lemmenjoki gold digging, reviewed in the background section, provides some small-scale examples of where it works to address Saami needs. Otherwise the examples remain few and far in between.
- Expectations from knowledge holders on the Nordic IPBES assessment remain vague. To the rooted villagers, such as in Jukajoki and in Sevettijärvi, the IPBES process is seen as 'international', remote, 'in Helsinki' and so forth. To the trained experts in Inari and academic realm, they can be viewed either with positive next steps or with criticisms, as the Utsjoki Saami argue, justifying the 'unique knowledge' they have, as opposed to some joint Nordic or even pan-Saami categories. This argument links the best with the questions of "*the Questionnaire for Scoping study for Nordic assessment to feed into IPBES*" and on the Questionnaire *"How to include people's knowledge on biodiversity"*. The summary from both Saami and Finnish workshops seemed to stress the qualitative nature of traditional knowledge. The winter seiners even went further and said that people '*need to be on the ice to understand it*'. This would speak against the use of multi-question forms *as a starting point*. The forms might have a role to play, if a certain group or community has been convinced of the need, relevance and role of IPBES work, and forms are collected then to document various opinions of the situation that has been contextualized.
- Risks of participation as viewed by different knowledge holders emerged in many forms. The workshop participants, with the exception of public people, like cabinet ministers, agreed to participate on the questions of anonymity. Risks emerge from Saami areas where they may see the 'stealing' of Saami knowledge and territorial assets as one threat. In the Finnish cases, for example in Puruvesi, the winter seiners did not want to reveal exact locations of harvest due to their 'private' nature.
- Both Finnish and Saami are non-Indo-European cultures and languages. This will provide challenges in translation and meaning of terminologies. What is meant with 'paikallinen tieto', 'perinne' and so forth and in what significance? To what extent it will be 'allowed' to claim for unique, distinct knowledge, in a demarcated and separate form from some Nordic approach?

What then constitute conditions for full and active participation with reciprocity, including FPIC in Finland? How should the Nordic IPBES assessment be designed for full and active participation of Saami communities and other local knowledge holders?

Based on the Workshops and review of Utsjoki Diamond case, divisions are needed. The legal frame of Finland is clear – only the Saami (whatever the implications will be), are considered to "possess" Indigenous knowledge as seen in the Article 8(j) of the CBD.

Politically, the situation is more complex. Those populations within Finland, such as the national minority, Karelians, can clearly demonstrate cultural-traditional knowledge, even their own language, related to biodiversity and specific land use areas. Perhaps the answer lies in amending, at some point, the national Article 8(j) definitions, to keep and make sure the Saami definitions of Indigenous knowledge are in place and supported, but also to include local-traditional knowledge of other populations. IPBES approach is also broader than the legal framework of CBD.

Participation in a Nordic IPBES work needs to include and meaningfully partner with the Saami Parliaments on the international – Nordic exchanges. A question of interest and contested content remains, to what extent Saami Parliament will be seen as a gatekeeper of

knowledge and how it is discussed. Some early experiences from this have been seen, but they are also tied to certain people and moments in time.

Secondly, any action of IPBES that affects Saami localities needs to happen in the full participation and consultation with the affected individuals, their families, villages and the specific community reality. It might be relevant to further utilize already documented materials, from archives and public / academic sources initially, to illustrate the specific dynamics of Finnish Saami situation and relevance, rather than launching new field work or public gathering of materials, but this is a question of decisions to the Saami themselves.

The Finnish situation is more versatile and mixed. One direction where local-traditional knowledge emerges as a relevant and interesting theme is the relationships Finns have with their sea, lakes and rivers. This can be justified on the other hand on the active presence many people still have on the waters and on the biological status of lakes, sea and rivers. This preliminary inquiry to the themes has stressed such connection, favoring the hunting-fisheries lifestyles and traditions of Eastern Finland.

A National Review of Indigenous and Local-Traditional Knowledge may be in order;

- For the forest ecosystems, it may have a role in those areas of Finland, where biological diversity of forests has been at least to certain extent been maintained, such as in Häme, Kainuu area and in the Vaara Karelia range, including the Koli region. Other sites can be added as needed.
- For cultural landscapes of mixed farmlands and fields, the South-Southwest (Porvoo, Turku, Uusimaa) is a good place to begin to explore such relations and knowledge.
- National peripheries, such as the Archipelago and coastal zones between Sweden and Finland, and Russia and Finland on the Baltic, is a crucial region of traditions, livelihoods and cultural landscapes where the local knowledge abounds. It is recommended that the special biocultural situation of the islands of Kalla should be included into such inquiry.

As the cultural-social dimensions of villages and communities are so very different across the non-Saami territories, it is recommended that any future IPBES steps avoid the troubles of the past, that emerged from the Kerimäki Workshop: centralized 'definitions' from Helsinki on 'national IPBES' and local knowledge approaches. They will fail and they have failed for decades.

The Finnish knowledge, with all of its beauty and richness, emerges best through local village and stakeholder interactions in the form of culturally relevant case studies conducted in full partnership with the women and men of our lakes and rivers. Documentation of this traditional knowledge has been successful for example using oral history work, mapping, photographic and artistic renderings and community workshops for those aspects of the knowledge that will be shared publicly.

The Puruvesi and Jukajoki years and materials can already point to strong directions where positive steps can be taken to make these hidden relationships and knowledge visible, locally and nationally as well as on the Nordic and international level. Similar approach is then possible in the coastal areas, in other lake districts and carefully selected focal points, from where this work can start. Special attention should be paid to gender-specific knowledge and women's rights and participation.

Outside ethnic composition of villages, in both Saami and Finnish case, the knowledge holders are often very different people who come to public meetings or workshops. They carry, for various reasons, the 'hidden knowledge' and deep relations with the waters and lands of our home. The main reason why they will never fill forms or blankets about 'traditional knowledge' is that they live it. And they are in the bush, on the fish traps, at the reindeer corrals.

Therefore the IPBES work and any work that tries to address the loss of traditions, increased awareness, rights and responsibilities to nature and resilience, needs also people who mitigate between the general-global world of today and the rooted, place-based realities of 'the other Finland' so few people know about.

4. Detailed reports and outcomes from each workshop and from ILK in mining process

4.1.1. Finnish Knowledge: Jukajoki

The first Finnish local traditional knowledge Workshop was organised in the village of Alavi, North Karelia (with participants from the village of Selkie) as the monthly event of the *Jukajoki Catchment Area Restoration Project.* The workshop took place on the 23rd, May 2015 with ten participants (8 villagers and 2 scientists).

The Jukajoki watershed has captured a lot of attention in the past five years, due to two fish deaths that took place, first in the summer of 2010 and then they repeated in June 2011. Reason for the fish deaths was an extremely acidic discharge of water (pH 2,77, iron 330,000 mg/l) from the peat production site Linnunsuo, owned by the state company VAPO.

Members of a previous Jukajoki community meeting.

Jukajoki catchment area can be described as a heavily damaged aquatic ecosystem due to human land use. Main human large-scale activities in the watershed include farming, forestry and associated ditching of wetlands to increase productivity and peat production. Some gravel production and planned mining activities affect potentially the catchment area in addition to infrastructure development, such as roads, construction of buildings and pipelines for municipal purposes. All together the watershed is 9,000 hectares, and has a special, acidic soil containing iron sulphides, as a result of the last Ice Age. When this acidic soil is ditched and water table changes, the iron dries up and interacts with air. Once re-connected with water from example due to spring run-off, the result is essentially comparable to battery acid running in the ditches.

In the summer 2010 a local fisherman Heikki Roivas, from the village of Selkie, spotted the dead fish floating belly up in the river. This alarmed the village, and subsequently the neighbouring village of Alavi, to join forces in trying to initiate the largest catchment area restoration project in Eastern Finland. The fish deaths went initially unnoticed by the VAPO Company and the state environmental monitoring agencies – it was brought forward only after that local fishermen had observed it, made the correct interpretations and acted upon the severe ecological event that killed the fish.

Between 2010-2015 on Jukajoki catchment area the project has risen to national attention due to the fact that for the first time officially in the rural Finnish peripheries, the local traditional knowledge of the villagers is seen as an equally valid source of information as science in restoration and ecological work.

Key characteristics for the local traditional knowledge & science interaction and IPBES issues on Jukajoki River so far include:

- In total 2,7 million € has been spent in research, collection of traditional knowledge, restoration and prevention of further damages
- Several peer-reviewed papers and science monographs (see references) have been produced about the project, framing and establishing the role of traditional knowledge in detecting ecological change, using oral histories as a basis of ecological restoration and lastly, cutting-edge methodologies of visual-optic histories to detect environmental changes
- Over 40 local people have been interviewed, their land use and aquatic uses documented in maps and their oral histories recorded on a) observations of change from 1910 to 2015 b) reasons why the damages are here c) sites of restoration which have been overlooked by the scientific data and fieldwork
- Creation of Linnunsuo wetland unit, 120 hectares which has emerged as top 1 wader habitat in Finland, is nominated to be "Wetland of the Year 2015" in Europe
- VAPO was 'driven out' from Selkie and the village and fishermen are in a landmark, multi-year court case domestically, heading to the Supreme Administrational Court, on the role of restoration VAPO company has to conduct for damages inflicted on nature 1985-2015, with the key driver local knowledge and oral histories
- UNEP 2014 Yearbook recognized Jukajoki activities as a best practice to engage with 'citizen science' because local people have initiated collaborative management, used traditional knowledge to identify sites of ecological damage and worked to introduce community-based ecological restoration
- Jukajoki project won the 2015 'Energy Globe' Award for best National Project in Finland
- The project is to be featured in two U.S. major international films in 2015-2016 – "Jukajoki" and "Our Place on Earth"

Therefore the Workshop on boreal ecosystems, lakes and marshlands in the frame of IPBES was chosen to be organised on the Jukajoki basin, in the Alavi village. The event 23rd May 2015 was advertised beforehand in the local paper "Karjalainen". Selkie has about 300 people and Alavi village 250, and the event took place at the end of the spring, so many people were out in their cabins in the forest and by the lakes. Nevertheless, 10 people came, including 2 scientists to the event at the Alavi village house.

The event coincided with the news that the local municipalities and state authorities had provided a further 200,000 € in funding between 2015-2017 to restore the catchment area. So the mood was jubilant and positive in the meeting.


Renewing and understanding traditional knowledge

Snowchange Cooperative

Photo: UNEP Recognition

The Workshop lasted three hours. The central question for the participants was – what is the best method of including traditional knowledge into dialogue with science and what can we learn from the work in Jukajoki for a possible IPBES assessment. Village participants felt that the concept of IPBES is quite remote and vague, and they do not feel familiar with such international concepts, "*It is mostly Helsinki that will deal with them*".

However, when the question was proposed on the inclusion of traditional knowledge and engagement with it, several conclusions emerged, summarized below:

- The local people in North Karelia and along Jukajoki have a very intimate connection with their rivers and lakes.
- The 'drivers' of this local knowledge are the on-going presences on the area, such as cultural fishery, swimming, berry picking, hunting, other uses and family histories, some of which date back to 1600s.
- Villagers felt, as they have publicly indicated also in the past, that their knowledge, opinions and experiences have been ignored, for the most part, in the period of rapid industrialisation of the watershed between 1940s and 1980s. This project has changed the situation so that local people can better share their observations, opinions and restoration ideas.
- Generally people felt the way to capture observations had been successfully done using mapping of land and water uses on large-scale topographic maps. Photographs, also from the early 1900s, were a useful mechanism to determine how and where

things had changed. Then the family land uses, experiences, 'cultural and deep' knowledge had been best documented using oral histories, catch diaries and diary entries. Personal visits, over large amounts of time, had been essential.

- Participants had accustomed to the method where they had received the draft transcripts of their interviews for approval and correction prior to any other uses, and this had felt a positive step to make sure their rights had been supported. For example on the mapping of fishing and berry-picking areas, the exact locations were sometimes removed from the final public data, even though they appeared in the raw field materials.
- The limnological scientist, who took part in the Alavi workshop, conducting extensive all-year science measurements throughout the catchment area, said it was the largest inclusion of local knowledge and had been an eye-opening experience as a scientist. Secondly, he felt that in the past in Finland the scientific work had been seen as a top-down process, where the localities had been quite ignored. On the Jukajoki process this had turned to cooperation and a dialogue about the ways of restoring and detecting change and damages.

In summary, the local villagers in Alavi felt that there is no going back – local knowledge is a central and positive experience and a new style of working with the communities. It has attracted new thinking and attention also internationally. The focus has shifted from 'time of troubles' with the fish deaths to the largest, multi-million euro restoration model for catchment areas in Eastern Finland, and villagers were proud of their accomplishments.

4.1.2. Finnish Knowledge: Puruvesi

After the preliminary discussions with the IPBES team, lake Puruvesi was chosen as the second site of an investigation on how the Finnish local, traditional knowledge manifests and what are 'best practices' of inclusion. Puruvesi will be a target of a major EU LIFE restoration project over 2015-2021, and therefore the ways local knowledge can be included will be essential this decade on the lake (Silvennoinen 2015).

Lake Puruvesi can be characterized to be a pristine, in excellent ecological condition. It is located at the Eastern edge of the large Saimaa system; it is also a part of the Vuoksi watershed. It is located at the border between North Karelia and Savo regions. The territory of the lake is 420, 86 km^2 and it has 720 islands. It is possible to drink the water of Puruvesi.

Photo 7: Lake Puruvesi

On the lake there is a traditional-cultural professional fishery, the (winter) seiners of Puruvesi, who catch mainly vendace (*Coregonus albula*). Vendace is considered to be a "holy fish" in the communities of Puruvesi. Annual catch fluctuates between 500 and 1000 tons. In December 2013, due to the initiative of the professional fishermen, the vendace received the Geographical Indicator status from the EU Commission, both for the characteristics of the fish and the way it is harvested, with a seine and fish trap.

4.1.3. Winter Seiners of Lake Puruvesi

The first workshop was held on 24th, May 2015 at the Kesälahti Fish Base, located on Mäntyranta, on the eastern shore of lake Puruvesi. Eight professional fishermen, ages ranging from 38 to 68, participated in the workshop. All were male. Afterwards the fishermen cooperated with the NGO Pro Puruvesi to take the local school children on the lake, where traditional knowledge, and methods of monitoring water quality took place.

The seining culture and community of Puruvesi has national significance. First records start at 1300 AD. It remains essentially a *community,* as opposed to a professional fishery conducted by individuals. The fishermen are in a very strong position, as they know, due to the long socio-historical reasons, that they have a long-lasting relationship with Puruvesi that is well known and has never broken down.

Scientifically the Puruvesi has been investigated relatively little. There are some articles and monographs from 1970s, with another 'wave' of a few publications, including a monograph, in mid-2000s to 2015. Generally the winter seining and summer fish trap fishery is seen to be a stable and sustainable practice.

During the workshop, the professional fishermen of Kesälahti identified the IPBES to be a potentially important action, and indicated the inclusion of their uses and knowledge of the lake using oral history documentation, mapping of water uses, catch diaries and trips to the lake. Out of these, the trips on the ice are seen to be most relevant.

Photo 8: Some of the winter seiners of the Puruvesi

Photo 9: Winter seining

In the past they have decided not to publish the exact locations of their over 150 *apaja* catch sites in public, even though they are in the private records and maps. Many of the participants felt that the seiners need to be active, as otherwise their role in removal of biomass (over 500 tons annually) from lake Puruvesi will be ignored. The upcoming LIFE project from EU may provide mechanisms in that, such as in removal of 'coarce' fish from the shallow bay areas, which are euthrophicated.

While the fishermen are active and see the IPBES issues, currently distant, but still positive potentials, they also feel their realities are not well known. Very few people come to the ice to observe and witness the seining. Therefore there are steps that need to be taken locally, nationally and internationally to convey the traditions, practices and relationships of seining.

The fishermen pull over 120 catches through the winter. Climate change is now changing the ice conditions and safety and the amount the fishermen re-

Photo 10: Children arriving at the base

Photo 11: On lake Puruvesi with the children

ceive from vendace in wholesale has dropped to 1,20 € / kg, when at the same time the same fish can be sold in Helsinki at 19,95 € / kg. So the local knowledge they have about the lake, the environment and the weather is often ignored, the representation of fishermen is not good enough and the fish markets collapse and / or are not profitable, when they have to compete with cheap Norwegian farmed salmon in open markets. The EU Geographical Indicator, which recognized both the practice and the fish, might offer potential remedies in the future.

Most importantly, the children need to know and be involved. Therefore it was a very positive ending to the visit to Kesälahti Fish Base when the local school children were taken to the lake in cooperation with NGO Pro Puruvesi the next morning.

4.1.4. Local People of Kerimäki, Puruvesi

The second Puruvesi workshop was organised in the village of Kerimäki on the Savo region, on the Western side of the lake Puruvesi. It took place on 25th, May 2015. All in all 12 people took part. Participants came from many walks of life, including summer cabin owners, NGO people, former cabinet minister (Environment), fishermen and so on. The Savo region is, according to the socio-historical reasons, seen as a distinct area apart from North Karelia, and as Puruvesi is situated on both regions, the emphasis was different accordingly.

The Kerimäki event was co-organized with the Finnish Foundation for Water and Lake Fisheries. Aim was to discuss the historical and state views and future steps of local knowledge, and management into consideration in the IPBES frame.

Generally, during the workshop Finland was seen as a unique cultural area with socio-historical reasons of why local participation and knowledge has been excluded from decision-making and power in the past. The non-Indo-European language, history as a part of

Photo 12: Kerimäki event was held at the traditional fisherman's house

Photo 13: Participants of the workshop

Russian and Sweden empires and then as a semi-closed society in the post-WW2 years all had left their marks. Participants felt that there is a distinct Finnish tradition and knowledge, rooted in practice, dialects and regionality.

During the workshop then more specific aspects of including local knowledge and past experiences emerged. They can be summarized:

- On practical level the encouragement of people around Puruvesi to come forward and share their local knowledge is limited by the rural lifestyles – great efforts should be taken to promote the idea(s) in local media, newspapers and other media.
- As a rare example, the Pro Puruvesi NGO which strives to improve the water quality of the lake was seen to have succeeded, due to a twin strategy of organising village events one after another, combined with local land owner visits in homes and lake-side properties.
- Top-down governance of Puruvesi had discouraged local participation or sharing of traditional knowledge in the past and in the present. Many local fisheries councils (osakas- or kalastuskunta) on the Savo side have created a 'mosaic' of actors, each with their own agendas, that makes the unity of decisions hard. All in all there are over 300 Councils on lake Puruvesi. Secondly, state (Metsähallitus) owns large water territories of Puruvesi on the North Karelian side. So far it has been passive, but there are rumours that state will actively 'manage' now its assets, meaning, for example the non-sustainable trawling that might be introduced on Puruvesi, repeating the top-down natural resources governance of Finland as in the past.
- Maintaining and protecting water quality and ecology is often mixed with nature conservation and in the Savo region this has had negative connotations in the past, including the Natura 2000 experience (another top-down event) of the 1990s. The extremely endangered Saimaa freshwater seal and the lake salmon are both on Puruvesi, and the local people sometimes fear more conservation actions and limits, without consultation, from Helsinki.
- Jouni Backman, a former Minister of the Environment, assessed the IPBES and the local knowledge issues from the viewpoint of a politician and legislator. He said that, especially regarding water issues, the regulatory actions of the state have been the only effective mechanism to improve the situation of problems in Finland. The actions and voices of the citizens did not cause major changes in practice in the 1970s and 1980s; it was the parliamentary action that finally solved for example the water problems of the pulp factories and mills that were polluting the lake. The major outside pressure to foster any change was the international paper markets, which were concerned about the ecological qualities of pulp production then. Over the past 30 years

Minister Backman felt that the world has changed so nowadays companies are concerned about their PR images. Therefore social pressure, building on local observations and knowledge, can work, if it is framed as a problem-and-solution focused dialogue in the 2010s. Lastly, the local knowledge is tied with the 'mosaic' of water ownership issues in Puruvesi, and the large number of local actors produces problems too.

- Other participants identified, as the Workshop progressed, the question of water ownership to be essential. After the war, local fisheries' councils (kalastuskunnat) emerged as a state mechanism to allow local people to 'manage' and 'improve' fisheries production. On a lake, such as Puruvesi, there can be dozens of small councils, each with 10-20 people, designated territory and the same rights. In order to work and include local knowledge, each council needs to be included.
- One of the state mechanisms in the post-war Finland was the establishment of fish stocking enterprise, meaning that stock enterprises farmed certain species (which depended on a given 'trend or fashion') and the local fisheries councils across Finland purchased these fish and stocked, without any limitations, millions of non-endemic fish to various lakes through the decades – it meant a market for the stocking companies and a major top-down resource intervention in the form of introduced fish to lakes of Finland.
- One participant of the Workshop said that in 1898-1910, when the borders of the water areas were finally defined, the communal uses of the lake were disrupted. It meant that decisions building on local knowledge that was still able to use the seasons and full territory of the lake as a basis, was also disrupted. Now these local 300 Councils have no funds, and no unity to share, and pinpoint relevance in local knowledge discussions that would point to good ecological decisions. The question of rights and ownership that has been now fixed as a part of modernity cannot allow the old, endemic ways of being with the lake to emerge anymore, not at least in public. One female participant stressed the everyman's rights that exist in Nordic countries as a unique mechanism where exclusivity and openness are still addressed using customary ways. This collective right should be maintained and should not be given to lawyers to determine.
- One participant also said that Savo people and Finns in general are so accustomed, by history and culture, to live with their lakes and nature, in nature, that it is hard for the older generation to think in new concepts like "traditional knowledge" or "local knowledge". They just do what they have always been doing, and therefore the academic distinctions are not valid in the lakes and on water.
- Workshop participants felt that only ecological catastrophe will eventually launch unity and action in the local people and knowledge inclusion. Now responsibility of problems gets shifted from one body to the next and nobody takes responsibility. Perhaps also some kind of national strategy of uses of water might be needed.

The two events on Puruvesi lake were a success, and they also brought forwards the issues of IPBES in the Finnish 'heartland' of the lake country. Winter seiners were very sure of their knowledge and relationships with the lake, but felt excluded for the most part. On the other hand, they do not crave for much, as they always have been marginalized and still in any case continue to do what they used to do.

The public Workshop in Kerimäki produced different discourses of local knowledge, governance of the lakes, unity and ecological problems. Participants identified a shift at the end of the 19th and early 20th Centuries, when the lake areas were demarcated and then in mid-1900s fisheries councils established. This prevented the endemic, collective beings and uses of the lake from surviving, except in some families and practices (such as seining). Top-down governance has been very heavy-handed, whether for natural resources or conservation. The concept of local, traditional knowledge does not exist officially within the administration, and therefore continues to be ignored or at its best, there is a polite nod to the 'old ways' or 'citizen science'. Some participants identified, especially with the older generations, that they cannot understand concepts that define or try to demarcate 'local, traditional knowledge' from the all-encompassing relations and experience people have with the lake, which is endemic, intimate and experience- and locality-based.

Minister Backman reviewed the effectiveness of local action and issues from 1970s to 2015 on ecological problems of lakes. His key message was that real, meaningful change happened only through legislative action, pressure from international paper markets in Europe and perhaps today, through a sustained and solution-focused dialogue. Pro Puruvesi NGO, established in 2010, was referred to as a rare success, which has bridged many of these gaps, by employing a twin strategy of public events and media with village and

even private land owner visits to improve and maintain ecology and water quality of Puruvesi lake.

4.2.1. Voices from the Näätämö Workshops

The Skolt Saami arrived in Finland due to the Peace Treaty of 1920 with Russia and Finland. Their traditional homelands are located in the North-eastern corner of the region, in the area known internationally as 'Petsamo/Pechenka'. The Skolt Saami have many different sub-groups or tribes, such as Suonikylä, Petsamo, Hirvasjärvi and other distinct family-clan orientations. They are often seen as the 'most traditional' of the Saami in preserving their traditions.

In 1944 at the end of the Continuation War, the Skolts were settled in the area of Sevettijärvi – Näätämö, with some families also in Keväjärvi area close to Ivalo. What is essential for the IPBES view is that the Finnish state enacted the only Saami specific-legislation, the 'Skolt Act' to support their ways of life, including financial aid to housing, fisheries and reindeer herding, uses of the wilderness cabins and other measures. The Skolt Home Region is, to this day, the only area of Finland where a certain Saami group has been able to secure legal rights to life, culture and livelihoods. The Skolt Saami have also, albeit transformed, been able to preserve their endemic, Indigenous Skolt Saami Village Council, *siidsåabbar*.

The Snowchange Co-op has worked with the Skolts since 2007. For the purposes of IPBES, two Workshops were organised. First was with key knowledge holders, as all-Saami event. It took place from 17th to 19th, July 2015 on the river Näätämö and in the village of Sevettijärvi.

A second Workshop, organised by Snowchange Co-op researchers met with Saami in the village of Keväjärvi, Sevettijärvi and Kirakkajärvi between 24th and 26th July 2015. Due to a high-season limitations in organisation and availability of all-village meetings, individual visits to Elders were conducted in their private homes to have them involved as well. Site-specific field visits complemented the approach, to review the ecological-climate changes taking place in the Näätämö catchment area. All together about 15 people took part in the Sevettijärvi events and meetings.

The Skolt Saami who participated in the Workshops identified the following answers to the questions of IPBES, Saami knowledge and local priorities:

- In general, the Skolt Saami felt their status, having the special legal recognition with the Skolt Act, puts them apart from rest of the Saami in Finland and guarantees certain steps of recognizing their knowledge and issues while improvements are naturally needed.
- The political situation both with Saami-state and Skolt Saami internal politics is currently unclear and in a flux and therefore it is hard to assess the future and development of Saami knowledge. In general participants of the workshops stressed that the Skolt Saami need to be the actors and participants of *how* their knowledge is thought about, and contextualized. The old outsider-researcher –approach is no longer possible.
- In terms of priorities, over the 2011-2013 period many Skolt Saami felt their reindeer herding economy is quite secure, even in the impacts of climate

Photo 2: Skolt Saami knowledge holder

Photo 4: Erosion on the lake Sevettijärvi

Photo 5: Traditional Skolt Saami house in the village outdoor exhibit

change. However, the Skolt Saami River, Näätämö and its Atlantic Salmon stocks, flowing from Finland to Norway, is an issue in the weather changes. Therefore the Skolt Saami partnered with the Nordic Council of Ministers, United Nations and other organisations to develop the *Näätämö River Collaborative Management Project* to address the impacts of changes and need to include and actively influence the governance of the river.

- The Näätämö co-management project is seen as a success. Workshop participants identified the positive steps that have allowed the Saami knowledge to be included. The work began by allowing the Saami themselves to document, using oral histories, digital cameras and field visits, the major observations of impacts 2011-2013 along the watershed. Then a land use map, first of its kind in Finland, was produced. This map could then be used to work with the state agencies, researchers and other parties to show *how* and *where* Skolts are along the river and maintain their culture, harvest and presence.
- After the initial documentation, a key selected group of Skolt Saami was and continue to be hired to monitor changes along the river. Scientists were invited from Canada, Finland, USA and other countries to discuss and compare limnological, plant, weather, fisheries and other data with the Saami knowledge to seek best solutions to maintain resilience and health of the salmon and river.
- On the third stage, the *Skolts approved the Näätämö River Collaborative Management Project* officially in the Spring 2015 as their tool to secure their voices and rights, and knowledge in management of the river. The work expanded to cover sites of ecological restoration, where either climate change or human-induced changes had caused troubles. These sites include restoration of sub-catchment area of river Vainosjoki, the erosion sites of lake Sevettijärvi, investigation into the nutrient and solid discharges along the Näätämö River and status of rapids of Opukasköngäs and Kolttaköngäs.

In conclusion, the Workshop participants on both events felt that a direct approach, where the responsible Saami organisations, such as cultural associations (Saa'mi Nue'tt), or the Skolt Village Council, and their partners, works best to define and develop IPBES and Saami knowledge. The sustained and focused, grassroots orientation of the *Näätämö River Collaborative Management Project* has produced, over the past five years, a wealth of materials and vast range of experiences that can be already included in next steps of IPBES work as one of the most advanced practical forms of joint governance, monitoring and restoration of habitats, culture and rights in the Finnish Saami areas.

4.2.2. Case of Diamond Mining in the Saami Terrories of Utsjoki

On 8th May 2014 the mining company Karelian Diamond Resources Plc. applied for a permission to reserve 9 square kilometres of territory, partially in the strict IUCN nature reserve Kevo and partially outside it, for the purposes of diamond mining (TUKES 2014). The area is located in the municipality of Utsjoki, which is the only Saami-majority administrational unit in Finland. TUKES, the national mining authority approved the reserve application (TUKES 2014). The reserve area contained a pristine lake of Stuorra Balddotjavri.

Various Saami and non-Saami actors contested the permission for the reservation of this territory. The company actions initiated a public movement called "Anti-Mining Coalition of Deatnu Valley". The potential mining plans were seen as having direct, negative impacts on the local Saami culture and on the Atlantic Salmon –spawning river of Teno/Deatnu, including cross-border impacts to Norway.

Deatnu watershed is a crucial home region of the Saami and an active area of both reindeer herding and cultural fisheries, such as salmon dams and net harvest of Atlantic Salmon, in Finland and in Norway. A unique example of such fishery is the *kulkutus,* or drift net for salmon, which takes place early in the summer.

According to local Saami who spoke to media in summer 2015, it is ancient Saami tradition (Inarilainen 2015). It has been passed on for many generations. Around 200 families use the right to practice traditional dam and net fishery on river Deatnu at the moment (Inarilainen 2015). The drift net fishery lasts only six days.

This case study reviews the steps between April 2014 and May 2015, with the coordination and permission of the leaders of the Coalition against the mine. The Snowchange Cooperative provided technical assistance to the opposition of the mine, but was not an active stakeholder or participant in any of the stages of the process.

The Administrational Court of Northern Finland received a few complaints of the reservation decision (YLE 2014a). The state officials issuing complaints were ELY-keskus, the Center of Commerce, Transport and Environment (the state monitoring official for the region) and Metsähallitus (the state forestry agency, who also 'owns' and manages the state lands of Lapland, including conservation areas). The Foundation for Saami Museum, Saamelaismuseosäätiö also issued a statement against the mine (Yle 2014a).

ELY and Metsähallitus asked TUKES to correct the issued permit so that the territories that are within the strict nature reserve of Kevo should be omitted from the permit. This argument was based on the idea that the company has not adhered to the legislation of nature conservation well enough in its application (YLE 2014a). ELY went further and said that the exploration of diamonds inside the Kevo Park is "illegal" (YLE 2014f). The decision, according to ELY, did not take any of the special land use restrictions of the Park into consideration. According to ELY the new Mining Act 2011, §7 the possibility to collect small-scale core samples cannot be adhered to inside the Kevo Park (YLE 2014f).

Saamelaismuseo justified their opposition to the exploration on three premises: the company has not addressed the archaeological findings of the area, it has dismissed the role of the territory as a nationally relevant landscape –status and lastly, the foundation argues that the exploration reservation will impact on the nationally important culture environments (YLE 2014a).

In addition to the state actors, the Anti-Mining Coalition of Deatnu Valley issued a complaint of the permit. The Coalition consisted of Nordic Saami Council, municipality of Utsjoki, local fisheries and hunting bodies, reindeer cooperatives, land owners, cabin owners and several private individuals (YLE 2014b). Municipality of Utsjoki agreed to support the complaint unanimously (YLE 2014c). The Coalition organised two community meetings about the strategy, tactical steps and aims of the opposition to the plan in early summer 2014.

Complaints in mining permits follow three steps. Initially the complaint is made to the Regional Administrative Agency – AVI. Its decision can then be, as needed, further taken to the regional administrative court. Ultimately, the Supreme Administrative Court will be the place where the legal problems and contested interpretations of the mining issues may be solved.

Anti-Mining Coalition of Deatnu Valley was aware of the resistance of the administrative courts to possible complaints, but their aim was to get the issue all the way there. In previous cases both regional administrative court and the Supreme Administrative Court have defined the complaints from reindeer herders and cooperatives, Saami Parliament and individual land owners as void (YLE 2014c). Justification for this is that a simple exploration licence for minerals does not provide the company with special rights, which would differ from local rights. Therefore the Anti-Mining Coalition of Deatnu Valley was forced to issue their complaint based on this rather bizarre technical aspect of complaint, where the company's actions were seen to infringe on local rights to explore minerals (YLE 2014c).

Photo 1: Lake Pulmanki järvi on the Deatnu watershed

In early August 2014 the Regional Administrative Court dismissed the complaint against the company that the Saamelaismuseosäätiö had issued (YLE 2014d). The decision rested, in line with the previous experiences, with the fact that the Saamelaismuseosäätiö Foundation has no right in this matter to issue a complaint – simple exploration does not constitute an infringement of Saami culture, rights or cultural heritage. This was an important indication of the other complaints too and how the regional court sees the role of Saami culture and livelihoods.

On the other hand the Supreme Administrative Court outlined in general in June 2014 that TUKES, the national mining authority, needs to "take responsibility" of mining activities in the Saami home area (YLE 2014e). The Court stressed the need of a "joint" and "coordinated" approach in mining issues to do with the Saami land and culture area, regardless of the participation of the Saami Parliament. This provides the Saami Parliament with new access to more accurate documents of permitting already during the granting a possible licence. Saami Parliament had the aim of organising better negotiations with TUKES, reindeer herders and other actors to improve communications and better coordination of mining activities as a result of the Supreme Administrative Court decision (YLe 2014e).

Esko Aikio, the Saami spokesperson of the Coalition, warned in public from pursuing the mining plans: "*It is important to make the company realize, that there is no point to come here. We hope the company understands the message and withdraws before they invest too much in the exploration activities. The longer our appeals process is prolonged, the harder it will be to convince the company to withdraw from this*." (YLE 2014b)

The strategic aim of the Anti-Mining Coalition of Deatnu Valley was defined by the spokesperson Esko Aikio: "*We wish to demonstrate, that all of us together, you can say all of the Deatnu valley, are opposed to mining in the area. We wish to demonstrate that it will not be possible to start exploration or mining activities in Utsjoki. Many laws protect us, of course at the moment the most significant reasons for our defence rest on the Saami culture and the salmon of Teno/Deatnu"* (YLE 2014b).

The strategy of the Anti-Mining Coalition of Deatnu Valley can be summarized into two approaches. First, as described above, the Coalition took the Company to the Regional Administrative Agency and planned to move further into the administrational court with their complaints.

Secondly, they took direct contact with the company. Spokesperson Esko Aikio framed the direct contact to be even more effective than the national permits and complaints (YLE 2014b, 2014c).

The 21st February, 2015 letter, sent to both the Karelian Diamond Resources Ltd and an affiliated company, the Rio Tinto mining corporation stated the two points of demands of the Coalition:

1. *Demands that all planned exploration activities in our Saami Indigenous home area of Ohcejohka (Finnish: Utsjoki), Geavvu (Kevo) and the Deatnu (Teno) Watershed, occupied since time immemorial and in full possession of our people, have to be halted immediately. The planned exploration site is vital to local livelihood practices, and is of key national importance for its ecological and landscape values. Your activities will also impact the Norwegian Saami as the catchment area of the Deatnu is a transboundary river and cross-border region.*
2. *Declares your presence in our Saami area to be illegal under national and international law, and unsustainable from a scientific and traditional knowledge viewpoint. Therefore all your present and future activities will be met with resistance, including an international high-profile campaign, legal and social actions and appeals to the United Nations and the national governments of Finland and Norway.* (Anti-Mining Coalition of Deatnu Valley 2015)

Further, the Coalition went on to frame the mining exploration to be problematic because:

- claim area is situated partly within the strictly protected nature reserve park.
- claim is inside EU Natura 2000 wilderness area of Báišduottar.
- claim area contains recently discovered endangered (EN) (e.g. osprey nest) and critically endangered (CR) (e.g. *Rhizomnium gracile*) species.
- exploration license has been given without any consultation with Saami communities.
- Coalition is highly troubled by the fact that the company clearly does not follow its own policy in Sápmi to deal with Indigenous peoples.
- The areas to which company's exploration license applies are in the heart of traditional Saami territories.
- This territory is a homeland, which contains Saami relics and pre-historic and archaeological sites that are also protected by National Laws.
- The Deatnu River is currently the most important spawning area for wild Atlantic salmon in all of Europe.
- The Deatnu catchment area where the impacts of activities will take place is a cross-border river. Therefore any action here requires an assessment of such activities in the national laws of both Finland and Norway, as well as in International Law and Saami traditional laws. (Anti-Mining Coalition of Deatnu Valley 2015)

Anti-Mining Coalition of Deatnu Valley (2015) concluded their decision to oppose the plan by framing the issue into multiple drivers that are affecting the region and their home: "*We are confronting issues such as climate change, invasive species, new diseases, rapid loss of Arctic species, and other drivers. We are addressing these changes while maintaining our culture and societies. Your activities threaten to further upset the delicate situation of our home… The only way we can survive these multiple changes under way is to keep our homelands intact, free from industries and outside presence. In the past, we have successfully opposed projects that threaten our cultural identity and survival, and we advise you strongly to withdraw from our lands now to save yourselves from lengthy legal processes and public relations costs… The coalition signing this letter demands your companies to halt all activities in our areas. Given the illegality of your presence here, we expect you to withdraw from Sápmi immediately, once and for all… To make our position clear, we are not interested in any present or future consultations or negotiations; we firmly stand by our opposition against any and all mining exploration on our lands*."

In the Winter 2014-2015 the Coalition further consulted different parties about the situation as the Saami waited for the various Court decisions and further news about the company development. Towards the Spring the Saami also sent a delegation to Ireland to meet with the company, but this did not produce any major results as the company could not be reached.

Then, in early April 2015, the news arrived, that the Karelian Diamond Resources Ltd is pulling out of Utsjoki (Yle 2015a). Anti-Mining Coalition of Deatnu Valley determined that it was their direct actions and further pressure also domestically that led the company to come to this decision (YLE 2015a). On the 7th May 2015 it became official – the TUKES mining authority confirmed that they have approved of a decision by the company to drop the exploration licence (TUKES 2015, YLE 2015b, BarentsObserver 2015).

The diamond exploration case in Utsjoki is a crucial litmus test for Indigenous knowledge, rights and knowledge in the present-day Saami situation in Finland. Why so?

First, it demonstrates a case of 'hard' land use, an industrial company looking for minerals in the Saami

proper, for the first time. Second, it allows us to see how the national licensing, administrative and monitoring agencies react when the global mining exploration and development, for the first time in this capacity, tries to enter the Saami home area in Finland. Thirdly, it provides us with a set of experiences on how the national, international and local Saami organisations framed and responded to the intrusion.

The company was given the research and exploration license in the frame of 'business as usual' by TUKES. Here TUKES did not adhere to the Supreme Administrative Court decision from June 2014 (which came some months later than the permit, initially) – namely to consult and coordinate with the Saami Parliament regarding such activity. TUKES also ignored, in full prior knowledge, legal decisions regarding strict nature preserve of Kevo and the EU Natura 2000 wilderness area of Báišduottar, which, in theory, should protect areas from mining activities.

We cannot see much evidence of how the regulatory courts and agencies responded to this pilot case. We are left with the Regional Administrative Court dismissal of the Saamelaismuseosäätiö Foundation complaint, seemingly on a technical note, in other words justifying the dismissal as a non-infringement of special rights, *at this stage of mining process.*

Lastly the Saami responses provide us with surprising unity, even though the different actors seem to have different tactical approaches. Saami Parliament at the time tried to seek and partially won a decision from the Supreme Administrative Court on the principles of how mining should be conducted in the Saami home area. It had been initiated prior to the Karelian Diamond Resources case. So the Saami Parliament decided to seek definitions and guidelines to the systematic rules of how mining issues happen in the Saami area.

Anti-Mining Coalition of Deatnu Valley decided on a two-tiered approach. First, they took the decision to courts. Second, they decided on a frontal approach direct to the company, justifying both ecological, but first and foremost, Saami rights, culture and livelihoods to be the reason why they oppose this: "*we firmly stand by our opposition against any and all mining exploration on our lands".*

Esko Aikio also publicly announced that they are seeking an example of resistance. To stop development now in Utsjoki means that Anti-Mining Coalition of Deatnu Valley can demonstrate to all future actors the same case – there would be no business to come to the region to conduct this in the future either.

For the IPBES, it seems most of the action and framing of the situation happened so that the local Saami and other actors were the primary drivers of framing Saami knowledge, presence on the land and rights. This implies two important realizations.

First, the international concepts and frames of Indigenous rights to their lands were of crucial importance in the Utsjoki case, especially due to its cross-border nature. Secondly, and even more importantly, the Saami, explicitly and clearly, indicated the existence of Saami laws and Saami knowledge, and an agency based on those endemic, independent entities in the mining.

This means that the Saami involved claimed to control, possess and define themselves the extent, meaning of Saami knowledge and agency. This means that the global-international approach and concept of "Indigenous knowledge" as a general term comes into contact and possible conflict with the endemic, Saami-authored definitions of those concepts.

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Citizen science, community based monitoring and ILK – What is "citizen science"?

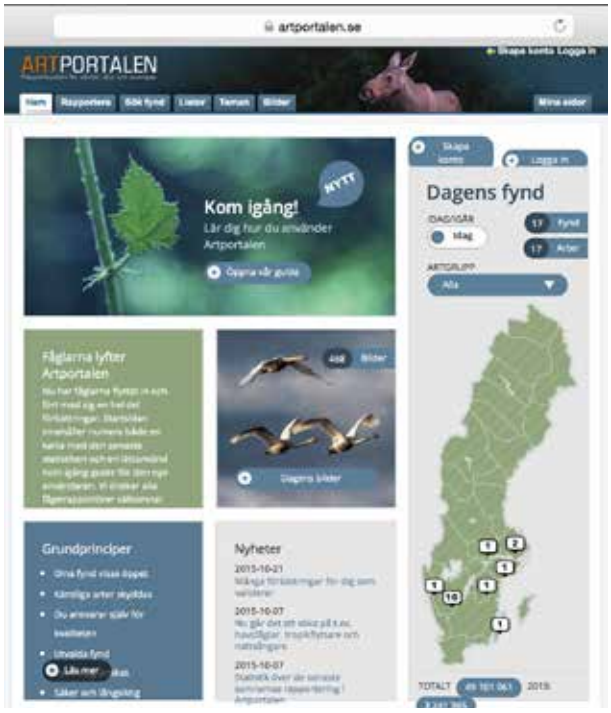
Citizen science has historical roots that date back centuries, to a time when most natural scientists were unpaid enthusiasts (works on citizen science often refer to Charles Darwin, who sailed on the Beagle as an unpaid companion to the ship's captain). However, citizen science of today is a relatively new approach of connecting people´s nature observations with centralized collection of data, and initiatives have multiplied greatly over the last decades, as the new possibilities provided by Internet and smartphones have opened new potentials for collection and sharing of data. There are citizen science projects in e.g. astronomy, computer science, genetics, geographical information, neuroscience and air pollution, but the majority of initiatives are focusing on monitoring of biodiversity and ecosystems. Examples of initiatives promoting citizen science can be found in associations like the Citizen Science Association[1], Earthwatch,[2] the Australian Citizen Science Association[3] and the Citizen Science Central of the Cornell Lab of Ornithology[4], and examples of active citizen science projects are the Audubon Christmas Bird Count (run since 1900)[5],Instant Wild[6] and eOceans[7] globally, and Artportalen[8], Artsportalen[9] and Fugle og Natur[10]in the Nordic countries. An overview of citizen science is provided by Jonathan Silvertown in "A new Dawn for Science"[11].

Citizen science is defined in the Oxford English Dictionary as "*scientific work undertaken by members of the general public, often in collaboration with or under the direction of professional scientists and scientific institutions*". The California Academy of Sciences offers the following definition: "*Citizen science is a global movement through which scientists and non-scientists alike make observations, collect data, and help answer some of our planet's most pressing questions.*"

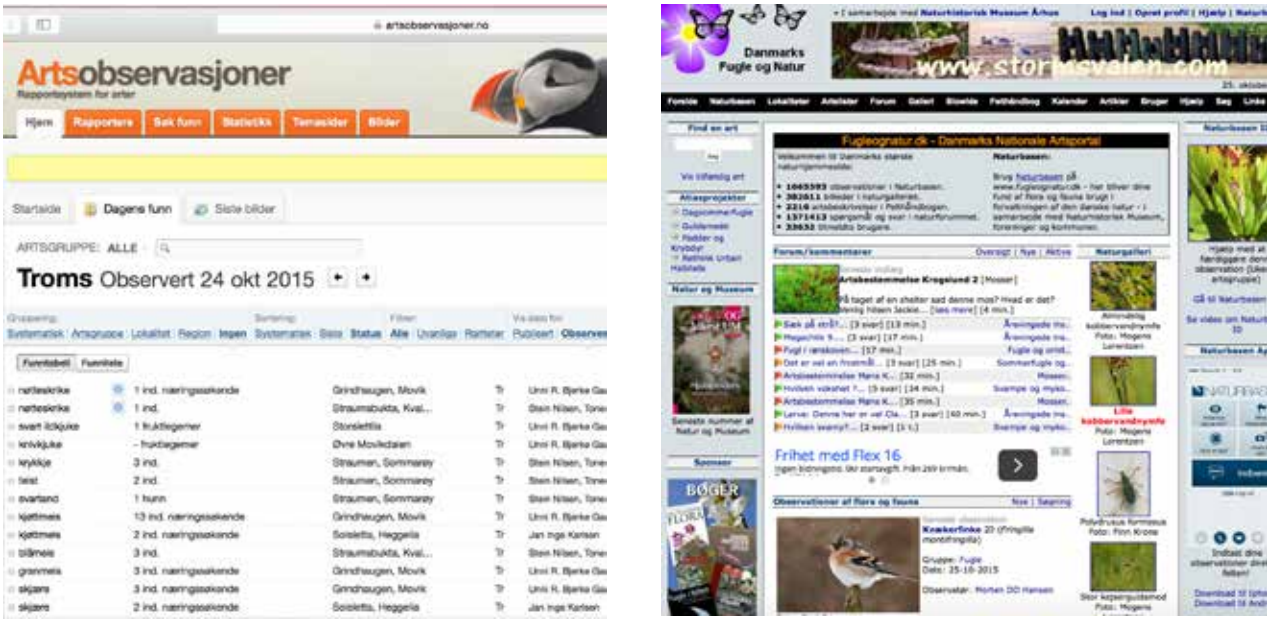
The definitions above show aspirations of collaboration between the general public and researchers. In reality, most initiatives that are termed citizen science have fairly limited communication links between these groups. Some initiatives are centrally designed by researchers or government officials, and the role of the citizens is that of collecting data to be analysed by others. Others have grown from naturalists, and in particular bird watchers, sharing species sightings with each other, into large data bases with information of sightings which serve different purposes for different user groups. One of the greatest use of the bird data in e.g. the Swedish Artportalen is by bird watchers as a source for:

1) finding the best spots for their coming field visit, with the highest probability of seeing rare or otherwise interesting birds, and

The web-page of the Swedish Artportalen.



1 http://citizenscienceassociation.org/
2 http://eu.earthwatch.org/
3 http://csna.gaiaresources.com.au/wordpress/
4 http://www.birds.cornell.edu/citscitoolkit/news/citizenscience-org-redesign
5 http://www.audubon.org/conservation/science/christmas-bird-count
6 http://www.edgeofexistence.org/instantwild/
7 http://www.eoceans.org/
8 https://www.artportalen.se/
9 http://artsobservasjoner.no/
10 http://www.fugleognatur.dk/
11 http://www.sciencedirect.com/science/article/pii/S016953470900175X



The web-pages of the Norwegian and Danish species report systems.

2) showing other bird watchers their activity and findings.

These kinds of biodiversity data bases can be very useful for monitoring of threatened biodiversity and ecosystems and for guiding action to diminish threats, and for this to happen it is important that available resources at the data management/-analysis end are wisely used and that time and funds are set aside in a proactive way. Also, the information which these data bases provide for bird watchers and other "naturalists" may inform their greater life values and choices in ways which may contribute towards more sustainable societies (although this is hardly possible to evaluate).

Some initiatives, like Floraväktarna (the Flora Guardians), have the expressed purpose of monitoring threatened species and contribute more directly to action plans for protection and improved land management.

What kind of citizen science can be found in the Nordic countries?

In Europe, there is a long tradition of voluntary collection of information on local biodiversity. This is true also in the Nordic countries, where naturalists for centuries have observed and recorded data on the distribution and abundance of birds, plants, fungi, insects, etc. Today there are a number of citizen science projects and initiatives in all Nordic countries. The most comprehensive in terms of biodiversity coverage are Artportalen[12] in Sweden, Artsobservasjoner[13] in Norway (the two are developed in collaboration) and "Fugle og Naturbasen"[14] in Denmark. In these three databases, vascular plants, mosses, lichens, fungi, algae, evertebrates, birds, mammals, amphibians, reptiles and fish are reported by local citizens.

In Iceland, after the 2008 financial crash, city councilors had hard choices to make about how to spend their limited budgets. The initiative "Better Reykjavik" was set up to enable citizens to debate innovative ideas to improve their communities. They posted potential projects, prioritized them and together decided what budgets to allocate. This initiative thus exemplifies a step further, where citizens are not only involved in collecting data, but also take part in analysis and decision-making.

The following presentation of how people´s involvement in the data contribution is having an impact on planning of conservation and awareness about biodiversity is provided on Artportalen's website: "With a large amount of sightings of both common and rare species collated in one place it will be easier to carry out conservation measures. Future threats can be revealed by studying a species' changes over time. The Reporting System helps to stimulate increased interest towards species, and often increases the user's species knowledge, which in turn can lead to increased interest in, and understanding of, conservation and species protection. By making it a pleasure to share one's observations, we hope that more people make a trip into the countryside to search for, to find, and to report their sightings to the Reporting System - and thus contribute to better nature conservation. Citizen science at its best!"

12 https://www.artportalen.se/

13 http://artsobservasjoner.no/

14 http://www.fugleognatur.dk/

The data from Artportalen is used *inter alia* for action plans (Åtgärdsprogram) for strengthened protection of threatened species, such as tailored land management for improving the species habitats. This link between citizen-based reporting, analysis and action plans is developing in the different Nordic countries.

The action plans bring the results to the land users. In most cases, the local land users will most likely not have been part of the citizen science reporting, although many may have good knowledge about their local habitats. Efforts to involve local land users and land owner in the reporting could strengthen the system – it might raise the interest of land owners/land users in conservation of the targeted species, and it would provide a much needed space for dialogue between researchers and land owners/land users.

In addition to Artportalen, Sweden has two separate but connected monitoring programs, Floraväktarna, the Flora Guardians, and the Swedish Butterfly Monitoring Scheme, which are partnerships between NGOs, government departments and universities. Norway has a similar flora guardian program. The Swedish Flora Guardians program is also linked to the species action plans.

The Nordic concept works well and is recognized as a model and an example internationally. The collaboration between citizens, NGOs, researchers, universities and government departments from data collection to action plans is particularly strong in the Nordic region.

Web-information about the Flora Guardians - a botanical monitoring program.

Citizen science and other kinds of community based monitoring

Citizen science and ILK are different entities. Indigenous and local knowledge, according to UNESCOs definition, "refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For rural and indigenous peoples, local knowledge informs decision-making about fundamental aspects of day-to-day life. This knowledge is integral to a cultural complex that also encompasses language, systems of classification, resource use practices, social interactions, ritual and spirituality." The knowledge documented through citizen science, on the other hand, is typically in the form of distinct, closely defined data, from individual observations by interested citizens who have little or no connection with land management, which are then merged and analyzed within a scientific framework.

In recent years, a number of community based monitoring initiatives have emerged, where indigenous and local communities have themselves designed and coordinated monitoring schemes as a basis for land management for community and ecosystem wellbeing. These community based monitoring systems are based on local knowledge but also use and adapt new technologies, such as digital data bases and GIS[15]. There are also community based monitoring initiatives aiming at contributing to collective aims at higher scales. These are often developed in collaboration between local and indigenous organizations, government departments, universities and others, like the Community Based Monitoring of the Conservation of Arctic Flora and Fauna (CAFF) working group of the Arctic Council, and the Participatory Monitoring and Management Partnership (PMMP). The CAFF working group states that it "has a longstanding recognition of the importance of Traditional Knowledge (TK) and Community Based Monitoring (CBM) and has endeavoured to incorporate them into its work plans. This includes in particular, the Circumpolar Biodiversity Monitoring Programme (CBMP) and the Arctic Biodiversity Assessment (ABA). *TK and CBM are often discussed together, however, CAFF recognizes them as distinct, understanding that TK is a systematic way of knowing and CBM is a tool used to collect observation data.*" (our italics)

The Participatory Monitoring and Management Partnership (PMMP) is an international collaborative network for local leaders and communities working

15 Stankovich, M., C. Cariño, M.E. Regpala, J.A. Guillao, and G. Balawag. 2013. Developing and implementing community-based monitoring and information systems: The global workshop and the Philippine workshop reports. Baggio City: Tebtebba Foundation.

with community based monitoring and management of natural resources[16]. The partnership explains that "In recent years, several pilot initiatives have developed and tested simple tools for local documentation and management of resources, so that the people who live from natural resources can themselves systematically track trends in natural resources and take more decisions as to how these should be protected and used. The new methods provide a forum for dialogue on natural resources between local communities and authorities. They prevent conflicts over limited resources. Local knowledge becomes accessible to municipal and national authorities and this shortens the time between observed changes and management actions. Local monitoring cannot replace conventional scientific monitoring but local and conventional scientific knowledge can complement each other." Recently, PMMP published a a policy brief called *Manaus Letter*. It contains recommendations for the participatory monitoring of biodiversity and was elaborated by more than 220 people from 18 countries during an international seminar in Manaus/Brazil last year. The document is also listed as an INF DOC for the next SBSTTA meetings in the context of the CBD[17].

Within the CBD, a bottom up initiative promoting "Community Based Monitoring and Information Systems" (CBMIS) has been developed by the International Indigenous Forum on Biodiversity, which is a network of indigenous peoples' organizations active in relation to the CBD[18]. CBMIS has been welcomed by the Parties to the CBD as a successful way to encourage bottom up approaches to monitor the CBD Aichi Biodiversity Targets. This initiative has also influenced the IPBES ILK Task force.

There are community based monitoring projects also in the Nordic countries. Two of these are the PISUNA project in Greenland, designed to build upon and strengthen existing informal community-based observation and management systems[19], and the Snowchange Deatnu Oral History Project, where "all work is guided by the communities, and they own all of their materials at all times, and they are co-researchers"[20].A new Political Priority Initiative of the Nordic Council of Ministers called "Nordic Resource Management" is initiating a common Nordic – Arctic cooperation to enhance democratic citizen participation in decision-making regarding the use of natural resources[21]. The project will further develop the new tools into standard templates, test them in Finland, Norway and South Greenland, and build capacity and raise awareness on the use of citizen knowledge among government authorities and civil society organizations. Institutions from all of the Arctic countries participate in the new project, which is funded with DKK 2 million during 2015–2017. Increased use of citizen knowledge has potential to help small communities survive within environmentally sustainable limits.

In "Conservation management: Citizen science is not enough on its own", the authors maintain that citizen science is constrained by the focus on data collection and public outreach to the wealthy. They argue that community based monitoring could benefit from the large-scale databases developed by citizen science, and that citizen science could benefit from the community-based monitoring practices being developed[22]. In reality, there seems to be no clear border between citizen science and (CS) and community based monitoring (CBM). CBM may or may not be a form of CS, depending on the way it is organized and used.

Danielsen et al. (2013) suggest that promoting "community-based" and "citizen science" approaches

16 http://www.pmmpartnership.com

17 available at http://media.wix.com/ugd/8d7574_869904b775da441896aa91d49d28daad.pdf

18 "The IIFB is a collection of representatives from indigenous governments, indigenous non-governmental organizations and indigenous scholars and activists that organize around the Convention on Biological Diversity (CBD) and other important international environmental meetings to help coordinate indigenous strategies at these meetings, provide advice to the government parties, and influence the interpretations of government obligations to recognize and respect indigenous rights to the knowledge and resources."

19 Danielsen, Finn et al. Counting what counts: using local knowledge to improve Arctic resource management. In *Polar Geography*, 2014 Vol. 37, No. 1, 69–91, http://dx.doi.org/10.1080/1088937X.2014.890960 and (in Greenlandic) http://naalakkersuisut.gl/kl-GL/Naalakkersuisut/Pisut/2015/06/290615-Pisuna-Projektet, and (in Danish) http://naalakkersuisut.gl/~/media/Nanoq/Files/Lydfiler/Juni%202015/Nette%20L%20om%20Pisuna.mp3

20 http://www.arcticcbm.org/index.html#eyJ0IjoieCIsImkiOiJkYjA2ZTExYzMzZDIzNTIzOTBjOGZkM2VkZDIwNDcxMCJ9

21 See further http://norden.diva-portal.org/smash/record.jsf?http://norden.diva-portal.org/smash/record.jsf;jsessionid=JepZqTC_da_370NKuSZkX3A_ZqSpCB_iceCO0Xc3.diva2-search3-vm&pid=diva2%3A791816&dswid=5380

22 http://www.nature.com/nature/journal/v521/n7551/full/521161d.html; http://www.monitoringmatters.org/articles/Kennett2015.pdf

A large number of citizens' eyes can observe more than a smaller number of scientists, but if one also could include farmers, fishermen, hunters, and animal herders in monitoring changes in biodiversity and ecosystem services the data would be enormous. This is an important aspect of IPBES assessments. Phot: Håkan Tunón.

could link environmental monitoring to awareness raising and enhanced decision-making at all levels of resource management. [23] The authors stress that not only data gathering, but also analysis can be contributed by communities. In some cases, such as PISUNA, also the methods for gathering data are designed and initiated by the community and they decide themselves on the attributes (species and resource uses) that they would like to monitor based on their own needs.

In what situations CBM and CS are useful tools for indigenous peoples and local communities, and for improved biodiversity and ecosystem management, depends on many factors. For example, fishers and hunters are unlikely to be keen on participating in CBM initiatives if they don't see that their effort in sharing knowledge and observations are used in practice for improving decision-making by the local municipal or national authorities. A Swedish researcher in the biodiversity working group of the Arctic Council, Conservation of Arctic Flora and Fauna (CAFF) remarked that "whatever we researchers can prove about the local environment, the local communities already know"[24]. He also remarked on differences between ILK ways of knowing and scientific ways of knowing. In natural science, data is recorded in numbers, percentages, degrees, dates, etc., whereas the knowledge of local hunters, fishers and gatherers may be more direct and precise but is normally not presented in numbers, tables or diagrams. It may also not always be easy to insert into scientific hypotheses. Government departments and politicians may feel they need "hard facts" for decision-making. At the same time, it may be precisely because our present day societies have left holistic thinking and valuation that we are in a situation with alarming rates of biodiversity loss and climate change.

In IPBES and in other initiatives, where efforts are made to combine different kinds of knowledge, it may be necessary to develop strategies for evaluation of knowledge within rather than across the contributing knowledge systems, as outlined in "the Multiple Evidence Base approach"[25]. The idea behind this approach

23 Danielsen, F. et al. 2013. Linking public participation in scientific research to the indicators and needs of international environmental agreements; http://www.monitoringmatters.org/articles/linking_public_participation.pdf

24 Mora Aronsson, personal communication 26 June 2015.

25 http://www.stockholmresilience.org/21/policy--practice/swedbio/dialogues/guna-yala-dialogue/multiple-evidence-base.html

is that it can create an enriched picture of understanding for triangulation and joint assessment of knowledge by holders of knowledge from diverse knowledge systems. Thus, results may contribute to better understanding also when views are diverging between different knowledge systems. Knowledge generated from a MEB process can serve as a base for policy decisions or a starting point for joint problem formulation and further knowledge generation. In an inclusive and iterative process, a MEB approach can enhance the legitimacy and relevance of the assessment outcomes for a wide range of actors.

We need to find ways to collaborate between researchers and indigenous and local knowledge holders that can assist in formulating bases for decision making which will guide our societies towards "conservation and sustainable use of biodiversity, long-term human well-being and sustainable development"[26]. The current and future developments in citizen science and community based monitoring, as well as a Nordic sub-regional IPBES assessment with ILK fully integrated can hopefully contribute toward this grand but necessary goal.

26 IPBES, from goals.

Recommendations for CS, CBM and its relations to ILK in a Nordic IPBES assessment

- Community Based Monitoring has a huge and largely unexplored potential to contribute not only data, but also interpretation/analysis and conclusions. Ongoing community based monitoring initiatives in the Nordic countries should be further piloted, supported and institutionalized.
- Within the Nordic countries, there are several databases built from citizens observations, that could 1) contribute biodiversity and ecosystem services data of highly relevance for a Nordic IPBES assessment 2) contribute a space for engaging with a group in society which has expertise and commitment about biodiversity and ecosystem services, for its outreach activities. A Nordic IPBES should take advantages of these, both for its data gathering, and for capacity building, communication and outreach activities.
- Always apply free, prior and informed consent when ILK holders and other citizens are involved in knowledge mobilization for a Nordic IPBES assessment.
- Promote a Multiple Evidence Base approach in a future Nordic IPBES assessment and work towards reciprocity and equity between different kinds of knowledge.

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Naptek – traditional knowledge and biodiversity

Since a governmental decision in December 2005, the Swedish Biodicersity Centre is coordinating Naptek – the Swedish National Programme for Local and Traditional Knowledge related to Conservation and Sustainable Use of Biological Diversity. The programme was launched in January 2006 and is a part of Sweden's national implementation of the UN Convention on Biological Diversity.

Traditional knowledge or silent knowledge is local people's experience based knowledge that is transferred from generation to generation through customary use of nature and the biological resources. For example traditional food production, the Saami reindeer husbandry, handicraft, hunting and fishing, the artisinal coastal fishermen and their experiences related to the see as well as the knowledge of summer pastoralists regarding the grazing animal and management of semi-natural grasslands in the outlying lands. All of these are diminished in today's society. According to the Convention on Biological Diversity this is knowledge that might be proven to be useful for the future.

Naptek's assignment is to contribute to the use, preserve, maintain and promote the wider use of local and traditional knowledge related to conservation and sustainable use of biological diversity. The programme should also have a certain emphasis regardning the local and traditional knowledge of the indigenous people of Sweden, the Saami people.

The purpose is that Naptek should facilitate the work:

- to map and document local and traditional knowledge,
- to preserve and maintain local and traditional knowledge,
- to promote the wider application of local and traditional knowledge to other knowledge holders and governmental agencies,
- to stimulate research regarding traditional knowledge

People's experience based knowledge that has been passed through generations though practical use of nature and the biological resources could possibly contribute to help us find answers for the challenges that our society is facing today. This knowledge originates from a time of efficient production without fossil energy.

To preserve local and traditional knowledge in its own context, there is also a need to acknowledge its value and respect it for its possible contribution for a future sustainable society. It is therefore necessary also to respect and value the knowledge holders among indigenous peoples and local communities and their possible contribution towards sustainable development. It is important to realise that the researchers or the governmental officals do not have all the answers, and that there is other forms of knowledge that might be found equally important.

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Traditional knowledge in an IPBES assessment

The recently established international body, IPBES (Intergovernmental Science-Policy Platform on Biological Diversity and Ecosystem Services) is in the next few years planning on doing regional assessments regarding the status and trends of biological diversity and ecosystem services. The purpose is to create the best possible conditions for future decision-making and in that context to involve different kinds of knowledge, also traditional knowledge.

Traditional knowledge (indigenous and local knowledge), i.e. people's practical, experience-based knowledge transferred from generation to generation, is considered to be an important prerequisite in conservation and sustainable use of biological diversity as well as in the development of a sustainable society.

This report is the result of a study in order to develop a methodology regarding how a full and effective participation of traditional knowledge holders in a Nordic IPBES assessment ought to be achieved.

NAPTEK – National Programme on Local and Traditional Knowledge related to Conservation and Sustainable Use of Biological Diversity. A programme at the Swedish Biodiversity Centre.

www.naptek.se

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2015-03-31

Ärendenr: NV-01400-15
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Terms of Reference

Indigenous and Local Knowledge in Scoping Study for the Nordic IPBES Assessment

1. Background

Recognizing that there is a need for strengthening the dialogue between the scientific community, governments, other holders of knowledge and stakeholders on biodiversity and ecosystem services, the development of Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) started in 2005 through the Millennium Ecosystem Assessment (MA) follow-up process and the consultative process on an International Mechanism of Scientific Expertise on Biodiversity (IMoSEB). The first session of the Plenary of IPBES met 2013 in Bonn, Germany. Delegates elected the IPBES Chair, the Bureau and the Multidisciplinary Expert Panel (MEP). IPBES now counts 123 Members.

In the context of IPBES, multilevel governance and associated policy tools and methodologies constitute key means for the effective stewardship of biodiversity and ecosystem services while securing peoples' benefits from them.

Box. 1 IPBES goals, functions, objectives and deliverables

IPBES goals: strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development

IPBES functional approach: strengthen the science-policy interface at all levels through:

- Knowledge generation
- Assessments of various geographic and thematic scope
- Identified policy support tools
- Addressing identified capacity building and catalysing financial support

The Objectives (and deliverables) of IPBES are:
Objective 1 - Strengthen the capacity and knowledge foundations of the science-policy interface to implement key functions of the Platform
- Deliverable 1(a): Priority capacity-building-needs to implement the Platform's work programme matched with resources through catalysing financial and in-kind support
- Deliverable 1(b): Capacities needed to implement the Platform's work programme developed

- Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems
- Deliverable 1(d): Priority knowledge and data needs for policymaking addressed through catalysing efforts to generate new knowledge and networking

Objective 2 - Strengthen the science-policy interface on biodiversity and ecosystem services at and across subregional, regional and global levels

- Deliverable 2(a): Guide on production and integration of assessments from and across all scales
- Deliverable 2(b): Regional/subregional assessments on biodiversity and ecosystem services
- Deliverable 2(c): Global assessment on biodiversity and ecosystem services

Objective 3 - Strengthen the science-policy interface on biodiversity and ecosystem services with regard to thematic and methodological issues

- Deliverable 3(a): Thematic assessment of pollinators, pollination and food production
- Deliverable 3(b): Thematic assessments: (i). Thematic assessment on land degradation and restoration(ii). Thematic assessment on invasive alien species and their control(iii). Thematic assessment on sustainable use and conservation of biodiversity and strengthening capacities and tools
- Deliverable 3(c): Policy support tools and methodologies for scenario analysis and modelling of biodiversity and ecosystem services based on a fast track assessment and a guide (by August 2015)
- Deliverable 3(d): Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature's benefits to people including ecosystem services based on an assessment and a guide

Objective 4 - Communicate and evaluate Platform activities, deliverables and findings

- Deliverable 4(a): Catalogue of relevant assessments
- Deliverable 4(b): Development of an information and data management plan
- Deliverable 4(c): Catalogue of policy support tools and methodologies
- Deliverable 4(d): Set of communication, outreach and engagement strategies, products and processes
- Deliverable 4(e): Reviews of the effectiveness of guidance, procedures, methods and approaches to inform future development of the Platform

See further at: http://ipbes.net/

IPBES has decided upon regional and sub-regional assessments of biodiversity and ecosystem services to feed into a global assessment by 2018. The Nordic countries have collaborated in IPBES-related work with support from the Nordic Council of Ministers and have come to the conclusion that one of the sub-regional assessments should be a Nordic assessment. Such an assessment would be valuable for the Nordic countries seeing that a Nordic assessment will benefit from being linked to a global process and science-policy platform such as IPBES. Strong sub-regional assessments performed according to IPBES standards will also benefit IPBES as a whole. In addition, a shared assessment of the Nordic region has the potential of giving issues relevant for the Nordic countries a stronger weight in IPBES. A complete assessment will probably be a substantial project, so the best way to prepare for such an assessment will be through a thorough scoping study. This will also facilitate the inclusion of all IPBES guidance and criteria as these are being developed. For further information regarding the Nordic Scoping Study, see Scoping study Nordic assessment to feed into IPBES - Draft Project Plan 2015-03-06, based on the proposal to the Nordic Council of Ministers and IPBES3 Outcomes.

During the development of IPBES the question on how Indigenous and local knowledge (ILK) and science can be connected on equal basis under the IPBES. This is considered under a special task force under Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems. For further information see http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf

In 2006 the Swedish government assigned the Swedish Biodiversity Centre (CBM) to launch a "national programme for local and traditional knowledge related to conservation and sustainable use of biological diversity" (Naptek) in order to facilitate Sweden's implementation of article 8(j) – on traditional knowledge of indigenous peoples and local communities embodying traditional lifestyles (IPLCs) – of the UN Convention on Biological Diversity (CBD), later also issues regarding article 10(c) – customary sustainable use. The work of Naptek has dealt with traditional knowledge from both the Sami community – in collaboration with the Swedish Sami Parliament – and other traditional local communities or traditional knowledge practitioners. Some activities have also involved Norwegian Nature Inspectorate (the project MONA, Mennesket og naturarven) and contacts with the Metsähallitus in Finland, which could be developed further within this context.

2. Purpose

The purpose of this assignment to Naptek/CBM is to contribute to the Nordic Scoping Study related to how to connect between Indigenous and local knowledge (ILK) and other knowledge systems in a Nordic context and assist in developing – in collaboration with indigenous peoples and local communities (IPLCs) – a Nordic methodology on how ILK can be included in a full Nordic IPBES assessment in order to fulfil the desired requirements of full and active participation, reciprocity and FPIC. This part of the Nordic Scoping Study includes interactions with IPLCs, a Nordic dialogue with IPLCs, literature reviews, and other forms of identification of data, and development of a roster of experts related to ILK and IPBES assessments, in order to suggest how ILK can be highlighted and included, on equal basis, in a full Nordic IPBES assessment. This also includes identifying relevant groups that should be included as ILK holders, and their relation to other knowledge systems, and if and how for example broader citizen science should be included. And it also includes to contribute and validate Annex 1 of the Scoping study Nordic assessment to feed into IPBES - Draft Project Plan 2015-03-06, based on the proposal to the Nordic Council of Ministers, and further developments under the full scoping exercise, and IPBES3 Outcomes, taking into account especially work under the task force under Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems. For further information see http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf .

3. Scope and Method and Time Schedule

The scope and method for the assignment is to assist the project leader and project group (of Nordic countries) regarding how to include ILK related to biodiversity and ecosystem services (issues covered in Annex 1, see above). Naptek/CBM shall:

1. Contribute with comments on the main questionnaire for the general Nordic Scoping study, and distribute it to suitable ILK contacts in Nordic countries and compile answers in order to get ILK perspectives on a Nordic assessment, under FPIC, and report the results to the project leader and project group at the end of June.

2. In the assignment Naptek has to analyse and discuss a definition related to ILK and especially "local communities", In the IPBES documents[1] there are now references to for example the Tkarihwaié:ri[2] Code of Ethical Conduct on Respect for the Cultural and Intellectual Heritage of Indigenous and Local Communities Relevant for the Conservation and Sustainable Use of Biological Diversity[3], developed under CBD. It should also be analysed how ILK relates to citizen science, such as related to data sources from bird watching etc.

3. Naptek/CBM shall also perform and facilitate a Nordic dialogue for indigenous peoples and local communities, see box 2. The aim of the dialogue should be to get the IPLC perspectives on methods for how ILK can and should be included in an full Nordic assessment, under FPIC. Together with national nodes and the involved Nordic IPLCs Naptek/CBM should gather relevant data, literature, and other sources relevant for a full assessments, including identify experts for a roster of experts, and validate Annex 1 of the Scoping study Nordic assessment to feed into IPBES - Draft Project Plan 2015-03-06, based on the proposal to the Nordic Council of Ministers and IPBES3 Outcomes, taking into account especially work under the task force under Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems. For further information see http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf .

Participants to the dialogue should be representatives from IPs, such as the Sami people and Inuits, local communities as well representatives/organisations of other local knowledge systems. Naptek/CBM has to summarise insights from the dialogue with a focus on what is Nordic specific. Project leader has to receive preliminary report from the dialogue by end of June. And the final workshop report latest 25th of August.

Box 2. The ILK dialogue within the Scoping Study for the Nordic IPBES Assessment [4]

Goal: To develop insights and methods for how ILK can be connected in a full Nordic assessment, under FPIC, for full assessments, and validate Annex 1 "Annex 1. Assignment, including Chapter outline for Full Nordic assessment to feed into IPBES process" of the Scoping study Nordic assessment to feed into IPBES - Draft Project Plan 2015-03-06, based on the proposal to the Nordic Council of Ministers and IPBES3 Outcomes, taking into account especially work under the task force under Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems.

Methods: In many processes there are, except for differences in perspectives, also specific knowledge gaps that have to be identified and understood before solutions and results can be reached. To help facilitate knowledge exchange, and also co-generation of knowledge and insights, "multi-actor dialogues" is a valid process. The purpose of this part of the Scoping Study is to get the IPLCs perspectives on how to include ILK in the IPBES process.

The multi-actor dialogue should be based on the conviction that all the participants together can craft a suite of solutions, rather than assuming there is a single answer that fits all. This approach encourages active listening with the intention to understand each other's viewpoints, find

[1] http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf
[2] Pronounced {Tga-ree-wa-yie-ree}, a Mohawk term meaning "the proper way".
[3] http://www.cbd.int/traditional/code.shtml
[4] The method is built on the SwedBio multiactor dialogues, a method that has been developed over years, see more at http://www.stockholmresilience.org/21/policy--practice/dialogues.html

meaning and agreement, rather than listening to imposed positions, finding flaws and make counterarguments. It is about revealing assumptions for re-evaluation. Three distinctive features differentiate a dialogue from a discussion, when all three are present, a conversation is transformed into a dialogue: 1. Equality and the absence of coercive influences; 2. Listening with empathy; 3. Bringing assumptions into the open. [5]

The method includes a thorough process with consultations and interviews regarding aim and agenda – the dialogue starts from day one in the planning process for ownership by the diverse actors involved. The inclusive planning process before the dialogue seminar and the planning of dissemination after the dialogue seminars are vitally important.

The dialogue should be an informal seminar, including the preparatory and follow up processes, with presentations from different views of an issue, and roundtable discussions involving key actors in a well-designed manner mixing between ideological and language barriers, and open space sessions where new ideas that has not come up during the planning process can get space. The dialogue should be held under Chatham house rule[6].

The duration of the dialogue could be 2 days, and have approximately 30-50 participants. Crucial elements of successful dialogues are professional facilitator/s, and that they are convened in a beautiful and relaxed environment that allows participants to get to know each other and build trust. Background material should be defined and distributed before the dialogue.

The dialogue seminar results should be made available through a report, reflecting on the discussion without revealing the identity of the people who expressed particular ideas.

4. The assignment also includes consulting with the Nordic country nodes, addresses provided through project leader, regarding knowledge holders that can be included, and to include a list of potential actors for the general Nordic Scoping questionnaire as well for participating in the dialogue. Each Nordic country node has been given the task to help Naptek/CBM to identify organisations relevant to be invited to the dialogue and for receiving the questionnaire. During the Scoping Study IPLCs will also be invited to suggest additional relevant contacts in order to develop a contact list for the full assessment and to contribute to the full Scoping Study, as well as the ILK-part.

5. Based on the contacts with the IPLCs and the Nordic country nodes a Nordic list of roster of ILK experts from different cultures, perspectives, customary practices, etc. will be compiled for the full assessment.

6. The assignment should have a focus on to comment on the entire scoping document for the full assessment with the perspective of ILK during the project period, up to October 14th. Furthermore, it also includes continuous feed-back to the participating IPLCs in order to make sure that the ILK perspectives are consolidated also in the report from the Scoping Study and safe-guarded for the full assessment.

[5] Literature in the field includes: The magic of dialogue; transforming conflict into cooperation, Yankelovich, D., 2001; and Solutions, Costanza, R., 2010

[6] "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed". - See more at: http://www.chathamhouse.org/about/chatham-house-rule

The activity period starts 2015-03-15 and ends 2015-10-14.

The draft ILK report has to be submitted latest 9th September and the final ILK report from this assignment latest October 14th. During the whole activity period the NAPTEK team will contribute with input to the full Nordic Scoping report.

4. Organisation, Management and Actors

Naptek/CBM has responsibility to coordinate and perform the tasks specified above and deliver results to the project leader. Håkan Tunón is the contact person at Naptek/CBM. The project leader (and Nordic project group) will be consulted on what actors to include in the assignment for both the questionnaire and the dialogue prior to the inclusion.

5. Reporting and Communication

Naptek/CBM has the responsibility to deliver in accordance with above tasks a final report that includes their reflection on the process, results from the dialogue and the questionnaire, and recommendations for the full assessment, both to be included in the scoping for the full assessment and as a separate ILK report. It is the Nordic perspective, commonalities and differences that are of specific interest to the Nordic assessment.

The report should contain an executive summary of conclusions and recommendations. The report and all other international contributions shall be written in English.

6. Resources

The budget will be agreed with SEPA in special agreement, and not exceed 1,5 MSEK.

7. References

Annex 1 “Annex 1. Assignment, including Chapter outline for Full Nordic assessment to feed into IPBES process” of the “Scoping study Nordic assessment to feed into IPBES - Draft Project Plan 2015-03-06, based on the proposal to the Nordic Council of Ministers and IPBES3 Outcomes”

Documents related to IPBES such as Deliverable 1(c): Procedures, approaches and participatory processes for working with indigenous and local knowledge systems. See for example “Update on the work of the task force on indigenous and local knowledge systems (deliverable 1 (c))“ http://ipbes.net/images/documents/plenary/third/information/INF_2/IPBES_3_INF_2.pdf but also other documents such as: Preliminary guide regarding diverse conceptualization of multiple values of nature and its benefits, including biodiversity and ecosystem functions and services (deliverable 3 (d)) http://www.ipbes.net/images/documents/plenary/third/information/INF_7/IPBES_3_INF_7.pdf

The Multiple Evidence Base approach - http://www.stockholmresilience.org/21/policy--practice/swedbio/dialogues/guna-yala-dialogue/multiple-evidence-base.html