

Study on Arctic Lay and Traditional Knowledge

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Annex I: Summary table of the identified monitoring and observing programmes

0 Task Reminder

The European Commission has commissioned EUNETMAR to conduct a study on Arctic lay and traditional knowledge. The purpose of the study is to identify community-based monitoring and observing programmes in the European Arctic and collect basic information on these.

The study feeds into the initiative currently piloted by the Inuit Circumpolar Council (ICC) and Brown University to develop an Atlas of Community-Based Monitoring in a Changing Arctic. This is a web-based platform that will map past and current community-based and traditional knowledge monitoring projects in the Arctic (arcticcbm.org).

The contents of this Report have been structured taking into account the requests specified in Ch. 3 of the Tendering Specifications and present an overview of the local and traditional knowledge harnessed from community-based monitoring and observing programmes. The information has been organised by “themes”:

1. Climate change Impacts, Mitigation and Adaptation. LTK, local adaptation and resource use
2. Tackling food security. LTK, pollution, health, and harvesting rights
3. Governance and resource rights: LTK, access issues and community viability
4. Cultural identity: LTK, endangered languages and social challenges.
5. Conservation of biodiversity and habitats including sacred sites

It should be noted that all information has been collected and processed without prejudice to the rights of indigenous populations and local communities, and a neutral approach towards the different knowledge paradigms has been maintained.

1 Background

The geographic scope of the study was agreed with DG-MARE and detailed in Report 2, which describes how information on community-based monitoring and observing programmes in the European Arctic was collected, including an overview of results and a short summary of key aspects.

Within the scope aforementioned, in order to deal with Local and Traditional Knowledge (LTK) it is useful to rely on a geographic representation of its main vehicle: the language. The following map presents the original languages of the respective Arctic indigenous peoples (even if they do not all fully speak their languages today). The map has also been used to illustrate each of the themes analysed in Section I, including communities and regional areas.

Figure 1 – Overview of Arctic original languages



Demography of indigenous peoples of the Arctic based on linguistic groups¹. Dallmann, W.K. (2004)². On the bottom left of the picture is shown the geographic scope of the study.

2 Methodology

Task 2.2 builds on the data gathered in task 2.1 (see Report 2). By combining primary and secondary sources, the report on Community-based monitoring programmes in the EU Arctic provided a general overview of 72 programmes across the European Arctic.

The output of task 2.1 has been useful for providing a general overview and for setting an updated baseline. More community-based monitoring projects were documented in the European Arctic than what has been found by a parallel effort of SAON in the North American Arctic. However, Report 2 has also evidenced a major shortcoming: the available information on community-based monitoring programmes is mainly descriptive and focused at meta-data (such as host organizations, years of operation, attributes monitored, study sites, tools used, specific role of community members, and publications produced) and rather limited in terms of LTK data content (the data sets generated by the community-based monitoring programmes). As discussed with DG-MARE³, it has therefore been a challenging endeavour for the experts to harness LTK from the community-based programmes.

Using a problem-solving approach the expert's team decided to narrow the analysis from the original 73 projects to a smaller number (30) selected using the following criteria:

- i) Overall relevance for LTK
- ii) Relevance for observations on community monitoring activities.
- iii) Linked to marine issues and fisheries, given the reliance of many Arctic communities on marine resources for subsistence and economic development defining common denominators of environment, culture and economy
- iv) Meaningful in terms of the five core themes that were used as point of departure and structural focus for the investigation.
- v) Balanced selection; both thematically (approach-wise, e.g. in terms of the attributes monitored and the role of the community members in the scheme), institutionally (with regards to what type of institution that hosted the scheme), and geographically.

The information gathered has been grouped in five main themes:

- i) Climate change Impacts, Mitigation and Adaptation. LTK, local adaptation and resource use
- ii) Tackling food security. LTK, pollution, health, and harvesting rights
- iii) Governance and resource rights: LTK, access issues and community viability
- iv) Cultural identity: LTK, endangered languages and social challenges.
- v) Conservation of biodiversity and habitats including sacred sites

¹ Overlapping populations are not shown. The map does not claim to show exact boundaries between the individual language groups. Typical colonial populations, which are not traditional Arctic populations, are not shown (Danes in Greenland, Russians in the Russian Federation, non-native Americans in North America).

² .Map courtesy of Hugo Ahlenius, UNEP/GRID-Arendal.

³ During a meeting held with DG MARE on the 12th of February 2014, it was discussed how the limited information deriving from questionnaires submitted to stakeholders could affect the quality of the rest of the study. The solution identified consisted of: (i) focusing on a shorter list of programmes for which there is good availability of information; (ii) making use of literature references to substantiate the information collected.

As stated in the inception report, the themes above (which in the real world overlap) are crucial to indigenous cultural survival as well as local community sustainability. They serve as guiding and major themes and issues where connecting LTK and Western science is put to the test. The themes refer to processes and issues that seem particularly pressing in terms of connecting LTK and Western science initiatives as a necessary endeavour in a holistic and inclusive approach to fuller, culturally sensitive understanding that can lead to a more flexible and effective way of governing natural resources as well as aid human adaptation to changes in the Arctic.

3 Main difficulties encountered

Apart from a scarce availability of information on many programmes, one of the main difficulties encountered during this study was related to the fact that many community-based programmes identified dealt with LTK only partially.

This outcome was unpredictable at the beginning of the study, and could not have been mitigated, because it reflects the organisation of the study in its various phases. In the first phase of the study it was requested to survey all current and past community-based monitoring programmes carried out in the EU Arctic. This activity produced information on a total of 72 programmes.

The second part of the study had to focus on the description of the LTK harnessed from the programmes identified as a result of the first phase. Our analysis, however, highlighted that a very limited number of this programmes deal with LTK.

Albeit discouraging, this result should not entirely come as a surprise. If we look at community-based monitoring and observing as the process of “gathering information by local residents over a period of time”⁴, it is evident that not all community-based monitoring and observing programmes necessarily make use of local and traditional knowledge per se. Indeed, many of the programmes identified aimed to collect data by relying on the observation of members of indigenous peoples and local communities, without necessarily seeking to achieve insights on LTK.

As a consequence, our analysis in the second part of the study had to cope with a relative lack of information specific to LTK in the programmes surveyed. A solution to this problem was to complement information deriving from questionnaires with literature analysis. However, in many cases, the links between LTK and community-based programmes may not appear evident or sufficiently strong. The rationale behind the programmes chosen to give insights on LTK themes is further explained in the next section (see paragraph “Harnessing LTK” under each theme).

Far from being a limit to the study, the occasionally weak link between the community-based monitoring and observing programmes and LTK can be considered as one of its major findings. It suggests that, despite the good number of community-based exercises carried so far in the EU Arctic, most of them connect with indigenous peoples mainly for data collection. This indicates that there can be increasing potential for cross-fertilization between LTK and western science, beyond simple collaboration in data collection.

4 LTK Themes

⁴ CAFF, Community Based Monitoring Handbook – Lessons from the Arctic, 2010, p. 5

4.1 General introduction

In recent years the Arctic scientific community has begun to take heed of the value of what has come to be known as “Traditional Ecological Knowledge” (TEK) or “Local and Traditional Knowledge” (LTK). These terms refer primarily to observations by indigenous peoples regarding their environment for the purpose of ascertaining the natural resources, weather and other conditions, usually in order to ensure success in hunting and fishing. Native peoples have depended on the existence of LTK for centuries, without necessarily giving it a particular name; this type of knowledge has simply been and still is an inextricable part of everyday life.

LTK may now generally be defined as a system or “cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationships of living beings (including humans) with one another and with their environment” (Berkes, 2008:7).

This definition of LTK emphasises its systemic aspects as a way of viewing the world. In other words, that it is a: “[...] system of knowledge, practice and belief acquired through interaction with the environment and transmitted across generations” (Berkes, 2008). This term is being increasingly used as a concept in Arctic governance contexts referring to the knowledge of indigenous peoples and local communities. Thus, for example, the Norwegian Nature Diversity Act includes experience-based knowledge derived from the use of nature, particularly with regard to Sámi use, as relevant in the knowledge basis for management decisions (Nature Diversity Act 2009, §8).

However, LTK is not limited to indigenous cultures but is also very much part of social and ecological realities in other natural resource-dependent cultures and communities, such as among small-scale fishers, hunters, herders and farmers (Einarsson, 2011; Kalstad *et al.*, 2011; Broderstad and Eythórsson, 2014).

A variation on the theme is the term “Traditional Indigenous Knowledge” (TIK) which is also sometimes used. TIK may be defined as knowledge that has been orally transmitted and transformed throughout history, and which is specific to a region or locality. A useful definition is: “... knowledge and values which have been acquired through experience, observation, from the land or from spiritual teachings, and handed down from one generation to another” (quoted in Abele, 1997, p.iii).

Some of this knowledge has been forgotten, but much is still in daily use and continue to develop. Some is being revitalized or re-articulated, and some has entered into the shared knowledge of wider society. The challenge for research in Arctic indigenous contexts, such as in northern Fennoscandia, Alaska, northern Canada and Russia, is to come to terms with the diversity of concepts and definitions and arrive at workable methods for the integration of LTK/TEK/TIK in their applied or theoretical research projects.

Much groundwork has been done on both sides of the Atlantic in exploring ways of connecting LTK and western science⁵. The topic has thus broadened and deepened through recent research to consider, for example, how indigenous knowledge systems use a variety of indicators to describe or predict outcomes, and has specialized terms to convey this multi-dimensional information clearly and briefly. Also, while much has been documented regarding specific observations, a promising new direction for LTK studies is to look at socio-ecological systems and systems of knowledge in which these observations are embedded. Seeing LTK as a system of knowledge suggests that it is understood as a self-contained system that is shared among its users, and that it can be accessed and connected with other knowledge systems.

⁵. See e.g. Eira *et al.* 2013. Traditional Sami snow terminology and physical snow classification: two ways of knowing. *Cold Regions Science and Technology* 85, 117-130; Sutherland *et al.* 2013. How can local and traditional knowledge be effectively incorporated into international assessments? *Oryx* 48, 1-2; Danielsen *et al.* 2014. Counting what counts: using local knowledge to improve Arctic resource management. *Polar Geography* 37, 69-91; Mustonen and Mustonen 2011. Eastern Sami Atlas (Vaasa: SnowChange) Krupnik and Jolly, 2002; Fox, 2003; Henshaw, 2003; Oozeva and Krupnik, 2004; Cruikshank, 2005; Huntington, 2005; Gearheard *et al.*, 2006; Bravo, 2010; Krupnik *et al.*, eds., 2010; Riseth and Solbakken, 2010; Andersen og Persen, 2011; Porsanger and Guttorm, 2011; Riseth *et al.*, 2011; Eythórsson and Brattland 2012; Brattland and Eythórsson, 2013).

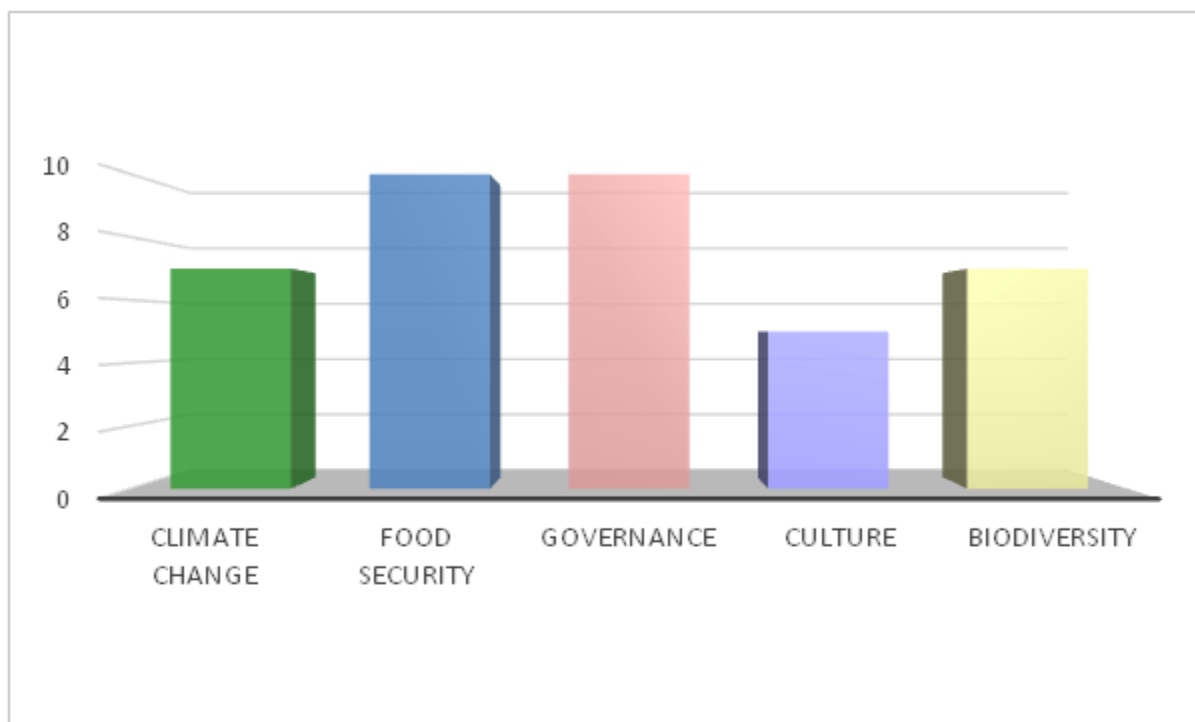
In spite of the current interest in LTK/TEK/TIK local lay and indigenous knowledge and ecological knowledge connected to pre-modern technologies is rapidly changing and/or being lost. Moreover, knowledge varies with social and ecological contexts. This means that suitable approaches to connect LTK and science still need to be developed and tested.

There are some important questions that need to be asked in terms of LTK, such as: How does LTK vary across Arctic social-ecological contexts and systems? Are there some common traits in the limitations and strengths of LTK relative to science, or in fruitfully connecting with science, in diverse Arctic social and ecological settings? What does the variation of LTK mean and how it can be usefully connected with science in different disciplines? How is LTK used in Arctic politics, policies and natural resource governance systems?

In conclusion, it may be noted that LTK may sometimes but not always be constructed as data sets that can be analysed quantitatively and directly connected with scientific records and data, and even be incorporated into modelling concepts. It can provide valuable information important to policy-making. It can also enable researchers to communicate better and to share scientific findings in a locally meaningful way.

The overview of the community-based monitoring and observing programmes (see Report 2) includes a detailed analysis of programmes objectives, location, status, data collection methodology, data availability and communities' involvement. Building on those results, the selected projects for LTK harnessing (30) address the following themes⁶.

Figure 2 - Overview of community-based monitoring and observing programmes by theme



Source: own elaboration

⁶. Note: most of the projects address several topics

4.2 Theme I. Climate change Impacts, Mitigation and Adaptation. LTK, local adaptation and resource use

4.2.1 General remarks

Climate change is having profound impacts on Arctic ecosystems and the human societies that rely on marine and other resources for survival. Although traditional societies are known for being highly adaptable (Arctic Human Development Report 2004), current changes are happening at a rate that is threatening their ways of life and economic survival, especially when combined with other complex and cumulative processes of global change⁷.

Additionally, evidence-based analysis underline that “traditions and resources are jeopardized both by direct climate change impacts and the increasing value of their resources for market purposes” (Arctic Footprint and Policy Assessment, 2010: ES-5).

However, it is worth noting that former and on-going initiatives have tried to give a positive outlook to the change based on people’s ability to influence it; the Snow-change project is an illustrative example (Gofman, 2010).

Major findings of the analysed projects have pointed out that the “timing” of many phenomena in the Arctic has been significantly altered, creating both challenges and opportunities:

- Local and traditional knowledge (LTK) has sometimes proven more difficult to use in the rapidly transforming natural settings.
- LTK is a strong observing and monitoring tool to connect with scientific knowledge regarding climate change (chronological and landscape-specific precision and details).
- LTK is a resource in itself with uses and opportunities for potential new economic sectors for the inhabitants.
- Invaluable components (investing and nurturing long-term relationships, generating grassroots support and protecting and nurturing knowledge ownership) are critical to the design and development of successful projects.
- Indigenous and local community resilience in the face of change could be a cornerstone for policy action.

Arctic inhabitants tend to be reliant on resources such as fish, marine mammals, reindeer as well as seabirds (see as an example project 16). Climate change is causing unprecedented changes in the seasonal availability, migration patterns and climate induced movements of valuable animal species. For the Inuit for example the thawing, receding and ever more unpredictable sea-ice is causing great difficulties for hunters and other people travelling on ice. This is especially so as local and traditional knowledge (LTK) about ice, which sometimes is the product of local environments adaptation that has been transferred through practise and oral knowledge for thousands of years, is proving difficult to use in transformed natural settings (see project 49). For the Inuit, sea ice has been a home and hunting ground but it is now changing its meaning and nature. Lives are being lost when travelling on weak ice and subsistence survival is proving to be more difficult than before. Changes in sea ice also affect marine organisms and threaten biodiversity (see projects 49, 40, 43, Arctic Biodiversity Assessment 2013). Thorough knowledge of local ecosystems, embedded in local cultures, has been a key to successful human adaptation at high latitudes. It has proven great value to explain and observe environmental changes and impacts when connecting with Western scientific knowledge (see projects 51-56). In spite of the threats generated by rapid climate change, local

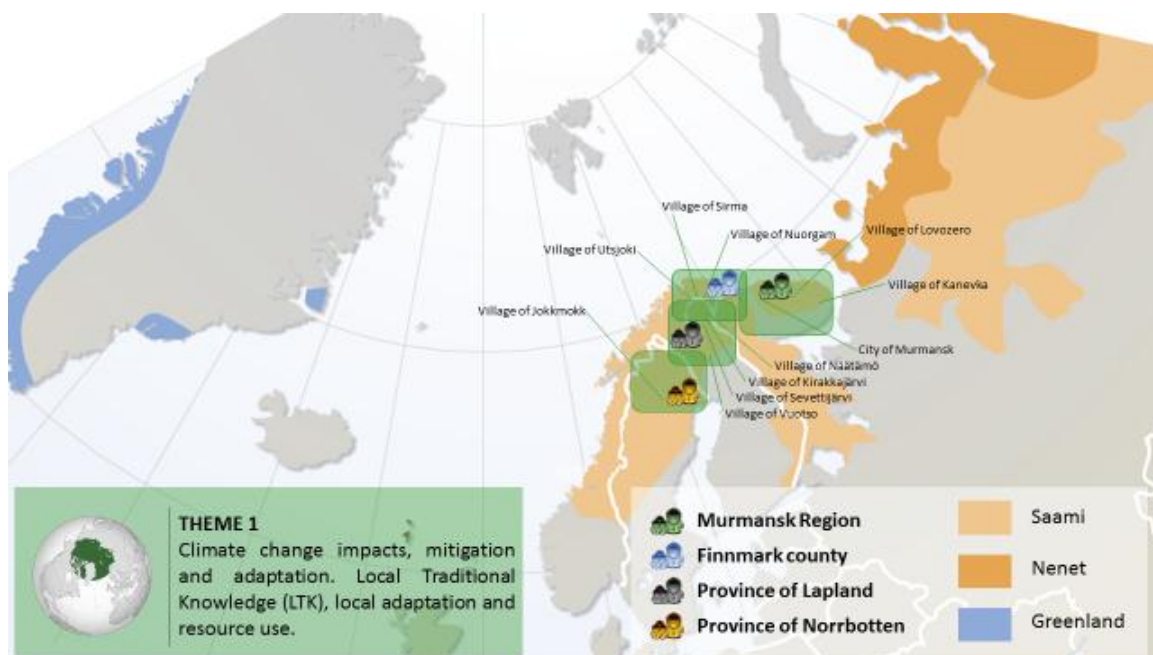
⁷. See Annex, projects 47 and 50.

and traditional knowledge, used by indigenous and other Arctic inhabitants, has proven to be a resource in itself with uses and opportunities in new economic sectors such as the tourist sector (see projects 24, 60, 62).

4.2.2 Communities and geographical areas

[Indigenous peoples...] Comprising only four per cent of the world's population, they utilize 22 percent of the world's land surface. In doing so, they maintain 80 per cent of the planet's biodiversity in, or adjacent to, 85 per cent of the world's protected areas.

Raygorodestky, 2011.



4.2.3 Harnessing LTK

LTK could contribute to:

- Creating information management and knowledge sharing systems, combining LTK with scientific research to ensure food availability
- Optimizing social networks: subsistence food sharing networks, cooperative hunting, etc.
- Monitoring changes in subsistence oriented-behaviors (harvesting, distribution and consumption) and impacts in the community food distribution networks
- Identification of factors affecting specific populations of food resources (e.g. freshwater fish).
- Improving traditional processing processes

Ten programmes were selected to offer examples of LTK applications dealing with climate change:

- Project No. 16 - Fávllis – Sámi Fishery Research Network: Local ecological knowledge on fjords
- Project No. 26 - Long term use in Sápmi – traditional knowledge and mapping of cultural heritage

- Project No. 49 - Sila-Inuk, Study of the Impacts of Climate Change
- Project No. 50 - SLiCA (Survey of Living Conditions in the Arctic)
- Project No. 51 - Snowchange Deatnu Oral History Project
- Project No. 52 - Snowchange Jokkmokk Oral History Project
- Project No. 53 - Snowchange Murmansk Oral History Project
- Project No. 54 - Snowchange Ponoï Oral History Project
- Project No. 55 - Snowchange Sevettijärvi (Näätämö) Oral History Project
- Project No. 56 - Snowchange Vuotso Oral History Project

As one may expect, LTK interacts with climate change mainly in terms of adaptation. Mitigation too should be intended as the benefits produced by indigenous peoples' and local communities' resilience to the adverse effects of climate change, the latter being such a large scale issue that cannot be fought at the local level – especially considering that indigenous people's contribution to climate change is virtually non-existent.

Nevertheless, indigenous and local communities' collective knowledge of the environment is a powerful tool to: i) deepen our understanding about climate change by combining scientific and evidence-based local and indigenous knowledge; ii) develop adaptation and mitigation strategies. Innovative responses have been reported in order to adapt to a diversified resource base, changes in the occurrence of species, in the timing of natural events, in the techniques applied to harvest resources, and in the location of human activities.

However, LTK accessibility (oral forms, grey literature) is still a major barrier for its connection with the international decision-making processes; for instance, the Intergovernmental Panel on Climate Change (IPCC) has noted in several reports (2007, 2010) that LTK is an invaluable basis for developing cost-effective adaptation strategies. And only in the 2014 report they have been able to access to this type of information. Inclusiveness and respectful knowledge connection are critical.

Our research has shown that many of the projects do not focus on LTK as such but rather on specific problems or issues of indigenous groups or other Arctic inhabitants. But even if LTK is not the project topic in itself, it is embodied in the cultures that are being dealt with. LTK always needs to be addressed in a cultural context, as it arises from specific adaptations and historical and ecological settings, in the pursuit of using environment and natural resources to make a living and nurture a way of life. LTK thus becomes part of everyday life and not a separate category of human existence. **A number of projects explicitly deal with LTK, specifically 16, 26, 50-56**, but few of them are explicitly concerned directly with adaptations and impacts on climate change. One example is **project 49**, the Greenlandic Sila-Inuk which has become a high-profile research project in academic and popular literature (see Gearhard et al. 2013), as well as a precious conceptual framework to demonstrate how two different knowledge systems can cross-fertilize and generate mutual benefits to understand the impacts of climate change.

The other projects mentioned, rather than aiming to study the impacts of climate change, can indirectly offer good examples of how climate change is modifying the perspective and lifestyle of indigenous peoples and local communities. By looking at the accounts given over time by community members, it is possible, incidentally, to gain useful insights on how and if climate change is affecting their lives.

However, LTK and its use for improving the livelihoods of the people and the governance of the resources in the Arctic continues to be a high topic on the agenda of indigenous organisations and international Arctic bodies such as the International Arctic Science Committee (IASC) and the Arctic Council. Understanding the different meanings and roles of LTK in the Arctic remains a critical issue in and for the region and in fora that have been set up to create a dialogue for different stakeholders in areas such as research, natural resource governance, and policy deliberations.

In a nutshell, LTK is the pillar to design community-based adaptation and mitigation actions that combine resilience and robustness of social-ecological systems at local, regional and global level.

4.3 Theme II. Tackling food security. Local Traditional Knowledge (LTK), pollution, health, and harvesting rights.

4.3.1 General Remarks

The indigenous peoples of the Arctic depend on hunting, fishing, reindeer herding and harvesting for subsistence. They are their main food resources and basic nutritional intake. Their relationship with nature is an intrinsic part of their cultural and social identity⁸. Therefore, a critical concern is alteration and changes in the availability of traditional food sources due to the impact of climate change and industrial economic activities that are taking place in some Arctic regions (hydroelectric, mining, hydrocarbons); Examples are projects 51 and 53 to 56.

Both, climate change and industrial activities alter the ecosystem services that support these populations. Those items cause changes in seasonal regimes (snow/rain/temperature/wind); changes in migratory patterns of fish, marine and terrestrial mammals and birds; affect the reindeer breeding and new invasive species appear. These changes affect various aspects of the indigenous people food systems and damage their food sovereignty putting in risk the future viability of the society.

The changes in the Arctic are more rapid and drastic than in other regions in the world. This speed of environmental changes creates difficulties in making accurate predictions to obtaining food (hunting, fishing, harvesting). This situation favours the emergence of potentially serious problems for human health and food security (see project 47).

On the one hand, according to Brown and Funk “some of the most profound and direct effects of climate change in the coming decades will be felt in food systems”⁹, primarily in Arctic communities. Within the most vulnerable populations are unmarried women, old men and women and children. For example, indigenous people of northern Canada, especially children, suffer from hunger and develop diseases linked to malnutrition or eating disorders¹⁰. Eating habits changes combined with cultural and environmental changes increase the effects of malnutrition. These habits have been transformed from “locally sourced” food (hunting, fishing, harvesting) to a less rich in “nutrients” diet supplied from the south.

On the other hand, we know of no international initiatives on health, food security and climate change specifically targeting indigenous communities. For instance, there hasn’t been any research programme for indigenous communities through the international climate regime and other international bodies. Finally, the research community involved with indigenous health issues has largely ignored climate change.

The main lessons learnt on tackling food security in the Arctic area are summarized as follows:

- Ensuring availability of traditional food sources, impacted by both climate change and industrial economic activities is difficult¹¹.
- The right of Aboriginal Arctic populations to “food sovereignty” remains an issue for many communities.
- Keeping the decision making on food security at the same pace as the environmental changes is challenging.
- The recognition of traditional rights and culture has a very strong impact on food security strategies.

⁸ See for instance projects 16, 36, 40.

⁹ Brown, M. & Funk, C.: Food Security under Climate Change. in: Science, VOL 319, February 2008, 580-581.

¹⁰ Report of the independent Expert Council of Canadian Academies, 2014

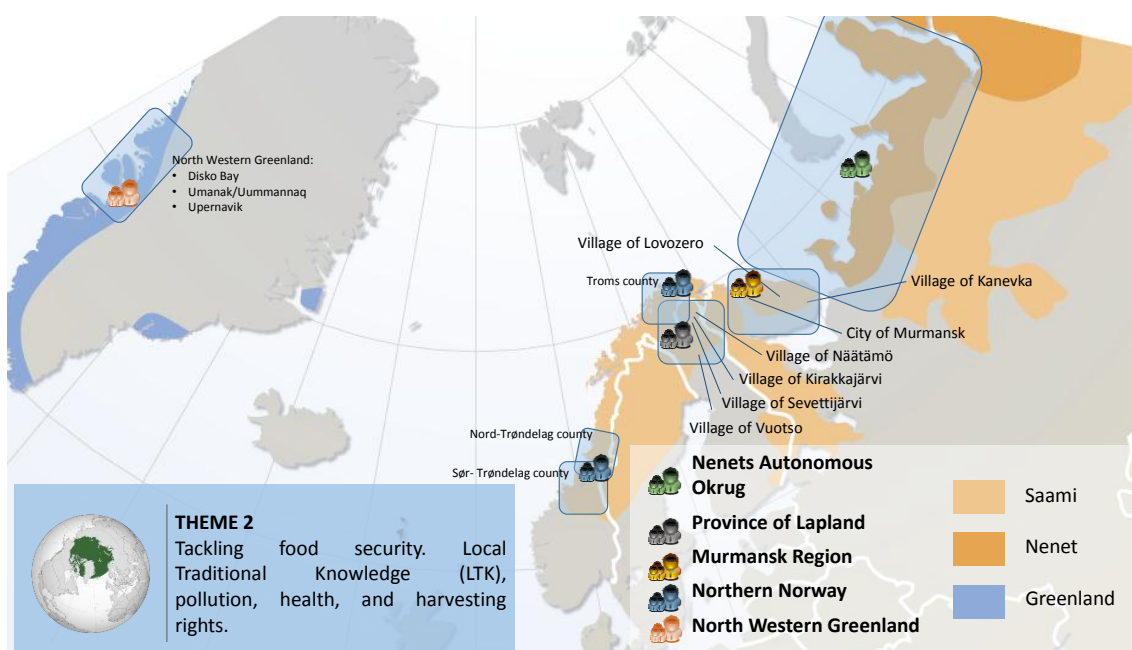
¹¹ According to Papatsie et al. (2013: 1) “The concept of “food sovereignty” includes political, legal and other rights that add up to the right to make their own decisions about food and define their own food systems, including production, distribution and consumption”.

Co-management arrangements for fish and wildlife optimise local and regional knowledge of subsistence resources while maximizing adaptation capabilities.

4.3.2 Communities and geographical areas

A wide plurality of communities develops projects under theme II:

- Herding, hunting and fishing areas of several communities in Nenets Autonomous Okrug (Russia)
- Sámi Communities of the province of Lapland (Finland): village of Utsjoki, village of Nuorgam, village of Sirma. Village of Sevettijärvi, village of Näätamö, village of Kirakkajärvi. Village of Vuotso, Sodankylä.
- Sámi communities of the Murmansk Region (Russian Federation): village of Lovozero, city of Murmansk, village of Krasnochelye, tribal indigenous communities of Kóla Sámi, village of Krasnochelye, village of Kanevka, village of Sosnovka, seasonal village of Chalmevarre/Ivanovka. Indigenous Sámi in selected fiords in Finnmark county (Porsanger Fjord, Tana Fjord, Lyngen Fjord, Varanger Fjord) as well as other northern Sámi municipalities in Northern Norway (Troms county, Nord-trøndelag county, Sor-Trøndelag county).
- Akunnaaq, Kitsissuarsuit, Qaarsut, Ilulissat, Niaqornarsuk, Attu, Saqqaq and other communities within Quaasuitsup Kommunia, north-western Greenland.



Overall, all these communities are in the following geographical regions:

- Russian Federation (communities in Nenets Autonomous Okrug, Murmansk Region)
- Finland (province of Lapland)
- Northern Norway
- North-western Greenland.

4.3.3 Harnessing LTK

LTK could contribute to:

- Setting baselines (e.g. to observe migration patterns and identify changes, to identify factors affecting populations variations, etc.) to guide scientific efforts. Evidence has shown that LTK, provides insights and connections that are overlooked by scientist.
- Combining spatial and ethnographic data to document and understand the changes underway
- Identifying adaptation strategies developed by local communities to measure levels of resilience
- Collecting evidences on the human-ecological change and interaction throughout the last century, including environmental impact assessment, spatial planning projects and nature preservation programmes.
- Developing monitoring programs which include locals as observers (e.g. hydroelectric reservoirs impacts on the status of watershed and natural resources that depend on it)
- Feeding worldwide scientific networks and communities of practitioners on the climate change.

Ten programmes were selected to offer examples of LTK applications dealing with tackling food security:

- Project No. 16 - Fávllis – Sámi Fishery Research Network: Local ecological knowledge on fjords.
- Project No. 36 - Opening Doors to the Native Knowledge of the Indigenous Peoples of the Nenets Autonomous Okrug
- Project No. 40 - Pisuna
- Project No. 47 - Saminor (1 and 2)
- Project No. 51 - Snowchange Deatnu Oral History Project
- Project No. 52 - Snowchange Jokkmokk Oral History Project
- Project No. 53 - Snowchange Murmansk Oral History Project
- Project No. 54 - Snowchange Ponoï Oral History Project
- Project No. 55 - Snowchange Sevettijärvi (Näätämö) Oral History Project
- Project No. 56 - Snowchange Vuotso Oral History Project

Contrary to other themes, in the above programmes the links between community-based monitoring and observing programmes and LTK are more evident, thus offering precious insights and best practices as to how LTK can cross-fertilize with western science and contribute to tackling food security.

This is probably due to the fact that undoubtedly traditional knowledge and traditional food systems support both cultural identity and food security. This is particularly relevant for the Arctic, since “many of the ancestral ecological and social processes and feedbacks are still intact” (Chapin III et al, 2006: 198).

Our research findings underline several best practices. An example is to deepen our understanding of the interplay between local conditions and resource use culture, and the state governance systems in fishery policy (see **project No. 16**). Similarly, information and communication flows are addressed through self-

interpretation mechanisms of the collected natural resource data and they establish stronger communication with local authorities about management of natural resources (see **project 36**).

Project 47 deals with several key-issues for indigenous and local communities. It has a clear relevance for debates on the definition of ethnicity in law, but also in addressing tailored food security issues. **Projects 51 to 56** are important projects involving communities in collecting long series of information on hydroelectric reservoirs impacts, on the status of watershed and on natural resources that depend on these areas. This is an example of a symmetric collaboration between communities and scientists. In addition, those two projects represent an important step forward for establishing co-management systems for the natural resources management specifically for the Atlantic salmon. **Project 40** supports considerable potential to influence on-the-ground management activities and to integrate current knowledge or resource availability and resource uses. Indigenous people are involved in all stages, and the outcomes of this project will serve to enhance resource use in the Arctic.

4.4 Theme III. Governance and resource rights: LTK, access issues and community viability.

4.4.1 General Remarks

Legal scholar Natalia Loukacheva, while outlining a definition for Arctic Governance, writes: “Arctic Governance” is *per se* not a legal term or concept. Broadly speaking, “governance” can be understood as a process in which political power is exercised by different players with due consideration to the principles of legitimacy, accountability and transparency.”¹² Defining Arctic governance and, more precisely, who is involved or entitled to take part in it, has been at the centre of debates in the last few decades.

In fact, as a consequence of climate changes effects on sea-ice coverage and an overall mitigation of the harsh conditions of the Arctic environment, the region has opened up to new perspectives on renewable and non-renewable resources exploitation, leading towards a new and growing geopolitical and strategic relevance of the Arctic region. While the eight Arctic states govern and manage the majority of the Arctic area and the resources contained within, a wide range of actors, varying from States located outside the Arctic, regional organizations, civil society organisations and private enterprises, to name but a few, have been continuously wondering who actually holds a “membership in the circle of those possessing legitimate claims to recognition as stakeholders in Arctic Affairs”¹³, that is to say, who is entitled to take part in Arctic governance.

The ongoing debate on Arctic governance is closely intertwined with the debate on who has the rights over the harvesting and control of natural resources. While international law is rather clear, since it assigns these resources to the states (including their 200-nautical-mile limit from the coast), a number of actors are already focusing on the areas outside national jurisdictions, especially to assure a share or a part in the new possibilities.

Within this complex framework, it is often set aside that many local communities, but more precisely Arctic indigenous peoples, have inhabited, prospered and survived in the Arctic region since immemorial times. While it must be recognized that indigenous people are increasingly involved in the process of Arctic governance, as for instance witnessed by the permanent membership of organisations that represent them in the Arctic Council, the political and legal systems sensitivity differ within the Arctic. Two main models exist, public government and different forms of ethnic self-government. “Public government is often used in areas where indigenous people are the majority (e.g. in Greenland and Nunavut) while in the areas where they are a minority, dual systems of governance prevail (indigenous arrangements coexist with public governments)”¹⁴.

The variation in the legal and political systems currently existing within the Arctic, also determines a broad differentiation of resources accessibility and rights. Special efforts are needed in order to achieve a sustainable development which fully takes into consideration the rights and needs of the indigenous people.

In this context in April 2008 the ICC released the Circumpolar Inuit Declaration 394, followed in May 2011 by *A Circumpolar Inuit Declaration on Resource Development Principles in Inuit Nunaat*. The Inuit core

¹² Natalia Loukacheva, 7. Arctic Governance, p. 125, in Natalia Loukacheva (ed.) Polar Law textbook, TemaNord 2010:538, Nordic Council of Ministers, Copenhagen 2010.

¹³ Young 2010: 169.

¹⁴ Timo Koivurova, Henna Tervo, Adam Stepien “Background Paper Indigenous Peoples in the Arctic”, Arctic Transform, 2008. Available at <http://arctic-transform.org/download/IndigPeoBP.pdf>.

viewpoint on Arctic resources, sovereignty and rights may be described by art.3 of the Declaration on Resources Development:

“3. A Circumpolar Inuit Declaration on Sovereignty in the Arctic 3.1 Resource development in *Inuit Nunaat* must be grounded in *A Circumpolar Inuit Declaration on Sovereignty in the Arctic*, adopted by the Inuit Circumpolar Council in April 2009. **3.2** *A Circumpolar Inuit Declaration on Sovereignty in the Arctic* identifies many principles that are relevant to the governance and the resource development in *Inuit Nunaat*, including the importance of the rule of law and recognition of the rights of Inuit as an Arctic indigenous people under both international and domestic law.”

In turn, the ICC Declaration of sovereignty in the Arctic states over resources (including non- renewable) considers:

“Central to our rights as a people is the right to *self-determination*. It is our right to freely determine our political status, freely pursue our economic, social, cultural and linguistic development, and freely dispose of our natural wealth and resources. [art.1.4]

[recalling the UNDRIP¹⁵] the right to own, use, develop and control our lands, territories and resources and the right to ensure that no project affecting our lands, territories or resources will proceed without our free and informed consent (Art.25-32) [art.3.6]”.

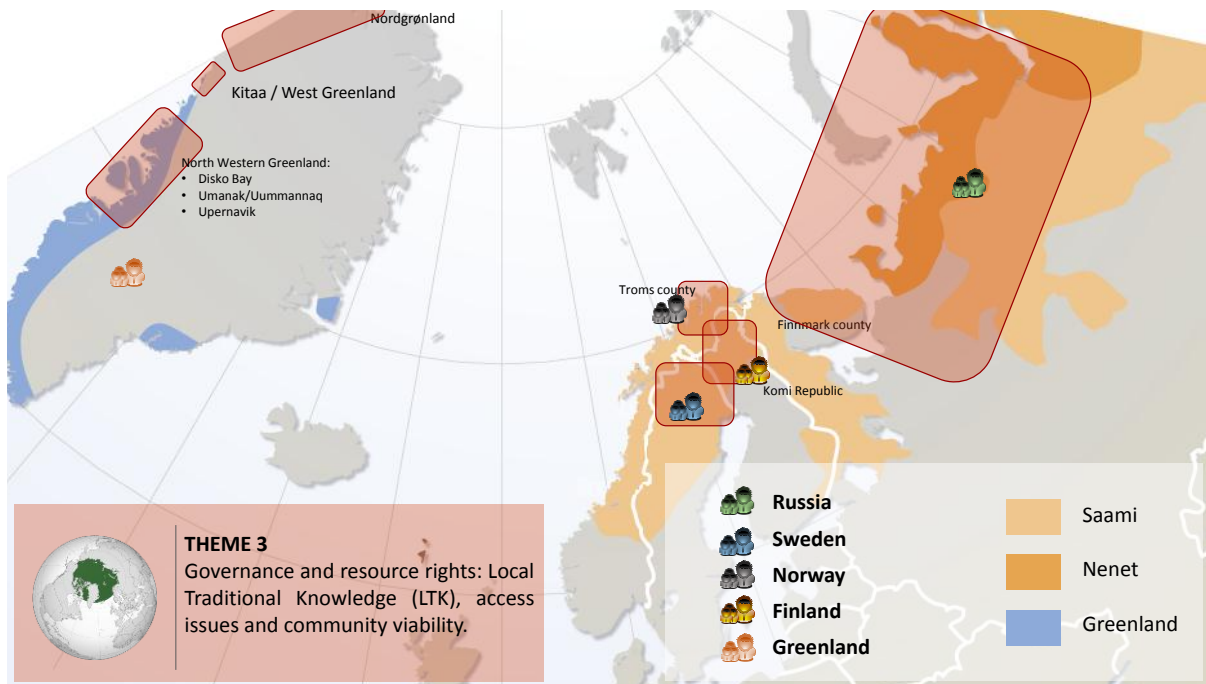
Not to comply with these guidelines, and failing to involve indigenous people may lead to serious effects for indigenous people, who e.g. in the case of large-scale industrial activities may not only be prevented from using the natural resources within their traditional territories, but also have often to deal with the intended or unintended negative effects of the industrial activities on the surrounding environment and natural resource base.

4.4.2 Communities and geographical areas

Governance and resources rights LTK collection involves the following:

- Indigenous communities:, Saami , Nenets, Veps, Komi
- Geographical areas or regions: Övre Soppero (Sweden); Baker Lake; James Bay (Canada); Sweden, North-eastern Russia (Nenets region); Saami, Nenets, Veps, and Komi communities in Norway, Finland, Sweden, and Russia; Russia, Nenets Autonomous Okrug; Komi Republic; Finland, Inari. More specifically (it applies for project 34): Sør Varganger, Norway, Ust-Tsilma, Russia, Inari, Finland; Teriberka, Russia; Pajala, Sweden

¹⁵ United Nations Declaration on the Rights of Indigenous Peoples, Art. 26.2.



4.4.3 Harnessing LTK

LTK could contribute to:

- Enhancing dialogue and engagement among main Arctic actors as well as decision-making processes.
- Contributing to consensus building and implementation of actions.
- Informing public policies (environmental, development, etc.) and mitigation measures.
- Designing adaptive management systems for natural resources.
- Achieving symmetric collaborations between communities and scientists.
- Identifying local or community-dependent needs and conditions calling for attention by the authorities.
- Recognizing the rights of access to resources in the communities analyzed

Five programmes were selected to offer examples of LTK applications dealing with these theme:

- Project No. 1 Aborinet. Aboriginal Tourism Arctic Network and Workshop
- Project No. 14 Ethnic and cultural tourism development project of indigenous peoples of the North, "NEDA ORDYM"
- Project No. 24 Indigee 2 – Indigenous Entrepreneurship
- Project No. 30 Monitoring the development of traditional land in the Nenets Autonomous District, North-Western Russia(MODIL-NAO)
- Project No. 34 NEO-BEAR - Neoliberal governance and sustainable development in the Barents Euro-Arctic Region

Apart from NEO-BEAR, none of these programmes specifically deals with governance. The other projects, however, were selected because they offer good examples of participatory and collaborative resource (including tourism) management models, thus ensuring community viability. These examples can also constitute best practices to be taken into consideration when developing governance models.

Project No. 1 and **Project No. 14** explore possibilities to support aboriginal/cultural tourism as a valuable and sustainable resource for indigenous and local communities.

ABORINET focuses on a multi-scale and multi-method data collection and analysis protocol for better understanding indigenous tourism in a way that supports multi-site and longitudinal comparisons, for connecting indigenous communities across the world, and for sharing the results in ways that are meaningful to stakeholders within and beyond indigenous communities. By collecting knowledge and experience among indigenous communities regarding business development in the tourism industry, ABORINET aims to contribute to the well-being of northern communities, preserve and enhance their traditional cultures, sustain their natural resources, and help community members to face the challenges of climate change and economic dependency.

Although with a slightly different methodology and scopes, project No.14 also deals with the possibility of sustainable development of ethnic tourism to support local communities. The project aims to create marketing and various ethnic and cultural tourism services, with the participation and involvement of the interests of the indigenous people through training and work partner network. Particular attention is given to ethnic, ethical and environmental principles of sustainable development.

Project No. 24 focuses on capacity building for local enterprises, part of which is run by indigenous peoples. This projects overall scope is to enhance local and indigenous business. Indeed, Project No. 24 aims to strengthen regional development by means of contributing to economic development of indigenous communities in these regions. The project provides opportunities for indigenous people to achieve financial independence through entrepreneurship; and specifically by gathering indigenous young entrepreneurs from Norway, Sweden, Finland and Russia. The main focus is to support and advice indigenous people with established enterprises or with business ideas closely related to indigenous culture and traditions. The project offers the participants specific business advice, conferences and working group meetings focusing on business development. Through the project young entrepreneurs get a personal business advisor offering hand-on guidance, feedback, knowledge and information about tools that pay off. The participants get the opportunity to take part in an extensive transnational indigenous network, and to develop their business ideas and enterprises. Although it is not a community-based project, it tries to highlight and value traditional knowledge, and many participants in the project have businesses or business ideas closely related to indigenous traditions or culture, for example reindeer herding, handicraft, etc. for which traditional knowledge plays an important role in their development.

Project No. 30 deals with a very sensitive topic for the Arctic in general, but more precisely for the European and Russian Arctic, that is to say, the coexistence of industrial development and reindeer herding activities. These activities combine multidisciplinary knowledge about ongoing and expected future economic, social, and environmental changes and governance practices in the Barents region and highlight local communities' perspectives on the current and expected future changes and governance practices from the perspective of sustainable development in the region through local case studies.

Project No. 34 analyses local and regional policy documents and plans as well as information on national and international development policies relevant to the Barents Sea region, in order to identify the key discourses, practices and opportunities of sustainable development concerning the region and its communities. Research will continue as a participatory process in selected communities, local discourses and practices of sustainable development will be studied. A series of meetings in five communities in the Region will be organized to exchange ideas of sustainable development between local stakeholders and researchers. Interviews and participatory observation will be conducted in the selected sites to further deepen the understanding of sustainability issues in local communities.

4.5 Theme IV Cultural identity: LTK, endangered languages and social problems.

4.5.1 General Remarks

The UN Declaration on the Rights of Indigenous peoples, adopted in 2008, provides important guidelines for the rights of indigenous peoples to their culture, identity, language and other practices. With this regard, article 31 states that indigenous peoples have the right to maintain, control, protect and develop their cultural heritage and their traditional knowledge and traditional cultural expressions, as well as the manifestations of their own science, technology and culture. States shall take effective measures in conjunction with indigenous peoples to recognize and protect the exercise of these rights.

UNESCO's Convention on the Safeguarding of Intangible Cultural Heritage and Convention on the Protection and Promotion of the Diversity of Cultural Expressions are of importance to indigenous peoples and traditional knowledge. This convention underlines the importance of traditional knowledge as a source of both spiritual and material wealth, and the contribution of this knowledge to sustainable development and the necessity of protecting and fostering it. The convention also points out the importance of people's freedom to create, communicate and disseminate their traditional cultural expressions and to have access to their own cultural expression to promote their own development.

The fragility of Arctic Indigenous peoples and other local communities to the threat of climate change and the economic activities of countries with interests in this region is well documented. The Arctic is the new frontier to cross by large-scale economic interests, potentially altering significantly the environment, its wildlife resources (hunting, fishing, harvesting, herding etc.) and therefore the cultures adapted in it for thousands of years.

Confronting a situation of potential continued loss of traditional lifestyles, "sustainable tourism" and "ecotourism" initiatives are encouraged and financed with funds from Western countries and proposed as ways to improve the economic welfare of these cultures and generate additional revenues.

The rapid globalization of the Arctic is pushing the disappearance of traditional ways of life of the inhabitants and their cultural diversity. Both the policies of the EU in the Arctic and of the Arctic Council appear to have good intentions. However, the current state of many of these indigenous populations is critical. There are indicators that support this: The loss of their native languages and their cultural identity. Moreover, the immigration of people from more southern latitudes to these territories, attracted by the exploitation of resources (oil, mining, timber, fisheries, hydropower, etc.) interact with local populations sometimes leading to acculturation and loss of political and cultural autonomy, converting the original inhabitants into ethnic minorities in their own territories.

The demands of these indigenous peoples to their governments tend to bring "good words and good intentions" but limited practical results, as expressed by an Inuit leader in 2008 in the Arctic Indigenous Language Symposium: "Over the years, the response by our government to our appeal for recognition and preservation of our language resulted in sporadic and fragmented support usually tied to short-term initiatives launched under the general title of cultural programming".

The loss of traditional ways of life, due to environmental degradation or acculturation may be the biggest threat to Arctic populations. With this loss, the traditional knowledge accumulated over generations also disappears. This traditional knowledge nevertheless has enabled survival and adaptive success for thousands of years for these communities in an ever changing environment. Today LTK is increasingly recognized by science and the international community and its importance is evident for their functional use in improving scientific understanding of different realities. So, to avoid this loss, it is necessary to strengthen the autonomy and decision-making ability of these native peoples of the Arctic.

In a nutshell, the following issues are particularly relevant for the Arctic cultural identity:

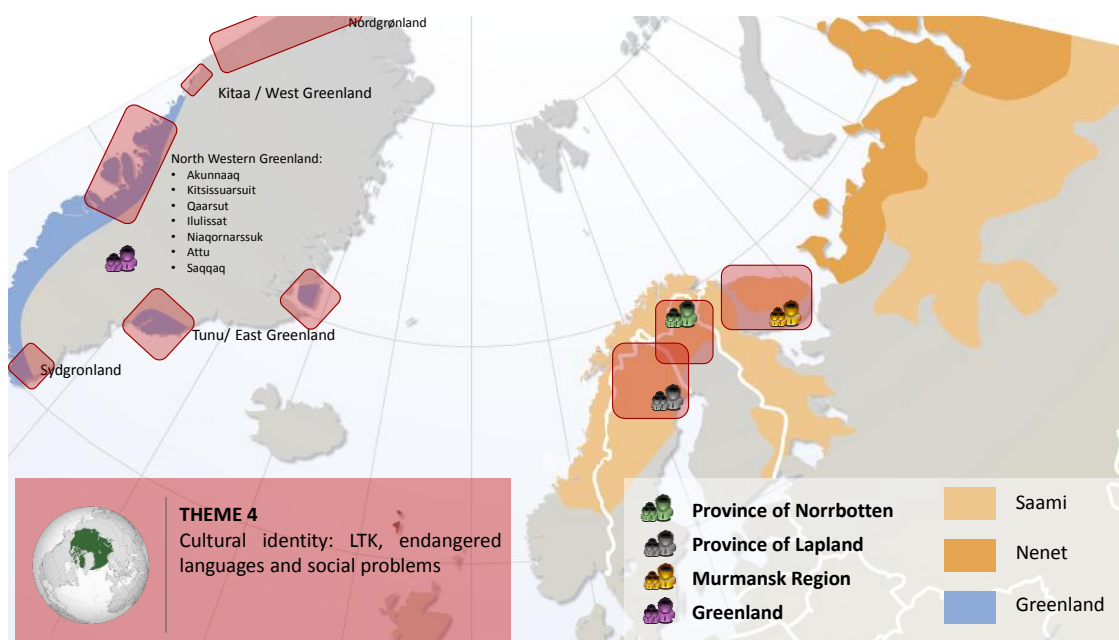
- To increase the sensitivity and responsiveness of States on the intrinsic value of LTK (transversal to all the themes analysed), particularly as an overall exceptionally valuable source of enhancing the livelihoods of the Arctic communities
- To properly diagnose and become aware of the main problems and challenges, from an indigenous perspective, those communities are facing.
- To optimize the LTK potential for collaborative design of public policies focused on communities' social, economic and environmental sustainability.

To promote new institutional frameworks to foster growth and development of Arctic native languages and cultural identity.

4.5.2 Communities and geographical areas

A wide variety of indigenous communities are involved in LTK data collection regarding cultural identity, such as the Sweden Sámi areas as the communities of the Province of Norrbotten (village of Jokkmokk and the Saami herders of Övre Soppero). The Sámi Communities of the province of Lapland in Finland (village of Utsjoki, village of Nuorgam, village of Sirma, village of Sevettijärvi, village of Näätämö, village of Kirakkajärvi, village of Vuotso, Sodankylä and the Komi Republic). The Sámi communities of the Murmansk Region in the Russian Federation (village of Lovozero, city of Murmansk, village of Krasnochelye, tribal indigenous communities of Kóla Sámi, village of Krasnochelye, village of Kanevka, village of Sosnovka, seasonal village of Chalme-varre/Ivanovka), the Nenets Autonomous Okrug (Russia). The Northern Sámi municipalities in Norway (Finnmark county, Troms County, Nord-trondelag County, Sor-Trondelag County); the Inuit in Greenland.

Overall, all these communities are in the following geographical regions: Russian Federation (Murmansk Region, Kola Peninsula), Sweden (Sami areas, Övre Soppero, province of Norrbotten), Finland (Komi Republic, province of Lapland), and Greenland.



4.5.3 Harnessing LTK

LTK could contribute to:

- Monitoring the sensitivity of traditional activities to potential disruption by changing conditions (e.g. industrial or touristic developments, climate change, etc.).
- Developing sustainable business development in tourism industry and cultural sectors (e.g. cultural and spiritual heritage, oral tradition and identity of indigenous people).
- Diversifying the economic basis (e.g. locals as operators to show the LTK and cultural identity)
- Quantifying traditional values (respectful and reciprocal relationships)
- Promoting the transfer of knowledge through training and capacity building
- Promoting awareness of the LTK to target audiences (policy-makers, scientist and the general public).

Eight programmes were selected to offer examples of LTK applications dealing cultural identity, endangered languages and social problems:

- Project No. 1 - ABORINET: Aboriginal Tourism Arctic Network and Workshop
- Project No. 14 - Ethnic and cultural tourism development project of indigenous peoples of the North, "NEDA ORDYM"
- Project No. 51 - Snowchange Deatnu Oral History Project
- Project No. 52 - Snowchange Jokkmokk Oral History Project
- Project No. 53 - Snowchange Murmansk Oral History Project
- Project No. 54 - Snowchange Ponoï Oral History Project
- Project No. 55 - Snowchange Sevettijärvi (Näätämö) Oral History Project
- Project No. 56 - Snowchange Vuotso Oral History Project

This is one of the themes where the links between community-based monitoring and LTK are probably weaker. On the one hand, one may consider that, in principle, almost every project surveyed deals with "cultural identity" in its broadest definition to some extent. On the other hand, our analysis found that a very limited number of community-based monitoring and observing programmes specifically address issues such as endangered languages and social problems. More often and to differing extents, protection of cultural identity is fostered in an indirect way, as a "by-product" of other activities. In this sense, we decided to highlight two projects dealing with tourism, which show how an economic activity may be a means to keep traditions alive while also generating economic benefits. In addition, we also focused on the Snowchange oral history project which, albeit with different objectives, end up with giving an important contribution to the preservation of endangered languages.

The traditional knowledge of the indigenous peoples of the North is a special part of the cultural and spiritual heritage of the people who largely rely upon oral tradition. This knowledge is the basis of the stable interaction with nature and the rational and sustainable use of their resources for providing both subsistence and spiritual practice.

Traditional knowledge allows people with limited writing system to pass down the heritage of their unique land use experience to their descendants.

Within this framework we can highlight projects number 1 and 14 which are focused on tourism. **Project number 1** has a multi-scale and multi-method data collection and an analysis protocol for better understanding of indigenous tourism in a way that supports multi-site comparisons, for connecting indigenous communities across the world, and for sharing the results in ways that are meaningful to stakeholders within and beyond indigenous communities.

On the other hand, **project number 14** enhances the appeal of the Sámi, Nenets and Komi regions, consolidating their identity and expanding local investment opportunities. The concrete objective is to develop culture and tourism products that have arisen from the needs of local indigenous peoples and to educate entrepreneurs and trainees as well as administrative personnel involved in tourism.

Projects 51-56 are important projects involving communities in collecting long series of information on hydroelectric reservoirs impacts on the status of watershed and natural resources that depend on it. There are examples of a symmetric collaboration between communities and scientists, which can be considered best practice. Two of them, in addition, do an important step forward and use the information in a more concrete way to enhance the livelihood of the communities by establishing a co-management system for the natural resources management, and specifically for the Atlantic salmon.

4.6 Theme V. Conservation of biodiversity and habitats including sacred sites

4.6.1 General Remarks

Conservation of biodiversity and habitat, including sacred sites, is a key issue for the economic, social and economic well-being and viability of indigenous peoples and local communities in the Arctic. At the same time it is a very controversial topic, requiring a sensitive and balanced approach between conservation and use, often being a source of conflicts between international, regional, national and local administrations and indigenous and local communities.

Indigenous peoples and local communities of the Arctic have been relying on the sustainable use of natural resources, which have allowed them to survive the harsh conditions of the Arctic environment. The knowledge on how to exploit natural resources while preserving them from overuse and depletion has been passed on from one generation to another until the present, although in different forms than Western science. This discrepancy has caused many misunderstandings and often incapacity to acknowledge traditional knowledge as a valuable and reliable independent source to preserve and sustainable use the environment.

However, during the past 20 years progress has been made toward an acknowledgment of the potentials of traditional ecological knowledge in nature and ecosystem management. Scientists such as Henry P. Huntington have demonstrated that traditional ecological knowledge “offers ecological information and insights relevant to ecological management and research that cannot be obtained from other sources” while providing a precise understanding of determined areas.

The key role of traditional ecological knowledge has been fostered by gradual acknowledgment internationally by entities such as the UN Convention on Biological Diversity (CBD). This unit is the key international legally-binding treaty – opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993 – for the conservation of biodiversity, the sustainable use of the components of biodiversity and the equitable sharing of the benefits derived from the use of genetic resources. Art. 8 (j), states that “subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.”

The CBD, in addition to recognize both the vital value of biological resources for the lives and livelihood of indigenous and local communities, and the important contributions that traditional knowledge systems make to both these communities and to global environmental protection effort, has also called on CBD’s parties to develop conservation strategies that recognize indigenous peoples and local communities’ rights.

Environmental protection and indigenous rights and needs do not perfectly fit with one another; rather, indigenous peoples’ special needs in terms of the surrounding environment require special adjustments.

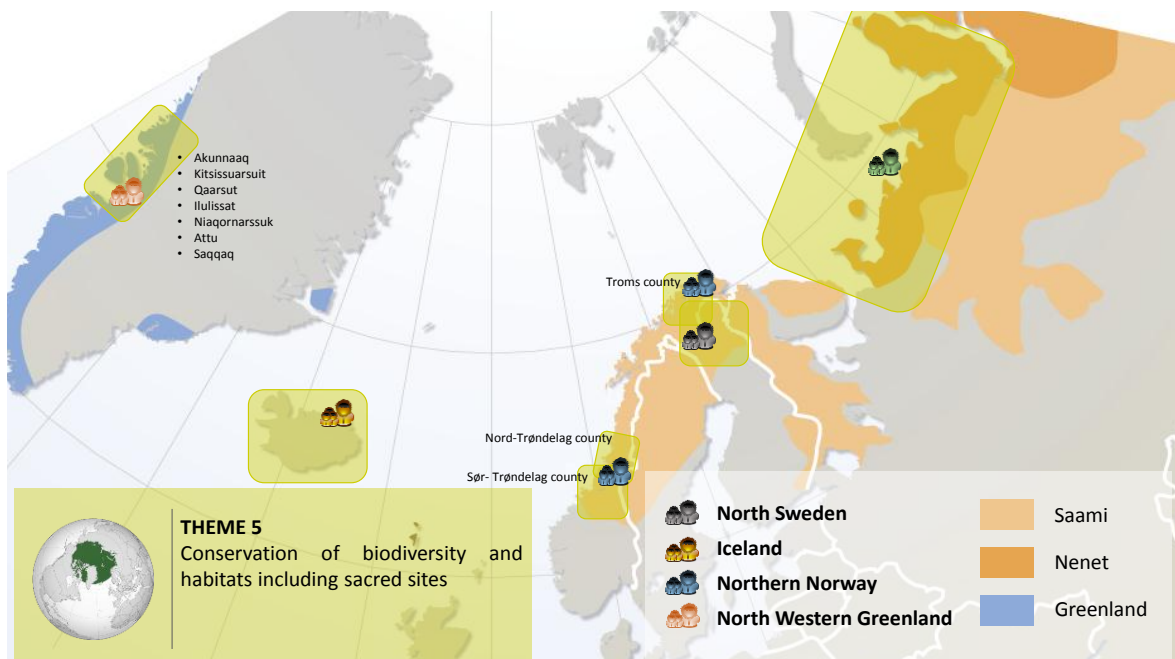
The harshest source of conflicts between indigenous peoples and local communities and international, national, regional and local administrations however seems to regard the conservation of Arctic fauna.

Unfortunately, many recent cases on nature management are underlining the difficulties in balancing indigenous peoples’ rights on harvesting and resources use and conservation measures aimed at preserving Arctic biodiversity.

4.6.2 Communities and geographical areas

The gathering of LTK under theme V includes all communities and geographical areas:

- Indigenous communities: Inuit, Greenlanders, Icelanders, Saami.
- Local communities of: North Norway, North Sweden, Russia
- Geographical areas or regions: Greenland, Iceland, North Sweden, North Norway, Russia Republic of Sakha and Alaska and Kodiak Island. Specifically: Sweden Sami-areas, the set aside of Abisko, Sarek and Great Falls National Parks (Sweden), Muddus National Park (Sweden), Padjelanta National Park (Sweden), Sjaunja Nature (Sweden), Stubba Nature reserve (Sweden), Rago National Park (Norway), Saltfjellet-Svartisen National Park (Norway), Junkerdal National Park (Norway), Disposal of the Pallas-Ounastunturi National (Finland), Disposal of Pyhätunturi National (Finland), Wilderness areas on the basis of the Wasteland Act (Finland), World Heritage Laponia (Sweden), The Finnmark property (Finnmarkseiendommen) (Norway);
- Seven communities in Disko Bay and Umanak/Uummannaq Fiord : Akunnaaq (Disko Bay, East of Aasiaat), Kitsissuarsuit (Southern part of Disko Bay, North of Aasiaat), Qaarsut, Ilulissat, Niaqornarsuk, Attu, Saqqaq



4.6.3 Harnessing LTK

LTK could contribute to:

- Mapping and tracking habitat utilization of endangering species.
- Maximizing local's skills (e.g. tagging by native hunters)
- Describing reference topics (e.g. the ice and sea-ice situations) in the Northernmost inhabited areas.

- Improving public participation in wildlife conservation programs (e.g. marine wildlife) with local engagement and interest.
- Coupling global and local problems and promoting broad alliances.

Six programmes were selected to offer examples of LTK applications dealing with these theme

- Project No. 25 - Indigenous Rights and Nature Conservation in Fennoscandinavia
- Project No. 39 - Piniarneq (hunting / fisheries reports)
- Project No. 40 - Pisuna
- Project No. 43 - Polar bears in Northwest Greenland
- Project No. 48 - Sensitivity Atlas
- Project No. 60 - The Great Seal Count

These programmes all deal with conservation of biodiversity. The link between community-based monitoring and LTK, as well as possibilities for cross-fertilization with western science are in this case quite clear. However, on a different note, it should be highlighted that, in most of the programmes dealing with conservation of biodiversity, community members are involved mainly for monitoring purposes (as highlighted, inter alia in § 3 Main difficulties encountered). Even though the involvement of community members in monitoring programmes is a good example of interaction between LTK and western science, the role of LTK should not be limited to simple “data collection” but could be extended to other phases of the project, in order to increase cross-fertilization between the two knowledge systems.

The projects selected to describe and explain the centrality of Traditional Knowledge for the **Conservation of biodiversity and habitats including sacred sites, deal with different topics**

Projects No. 39, 40, and 43, by data collection on living resource use by indigenous and local communities, specifically deal with the sensitive topic of resource harvesting and conservation of Arctic fauna.

Special mention should be accorded to the Pisuna project (**No. 40**), which, grounded on the acknowledgment that fishermen and hunters hold valuable knowledge on Arctic living resources, and that participatory monitoring can encourage sustainable livelihoods, is pilot-testing the use of locally-based monitoring of living resources in the Arctic. The project combines community-based monitoring activity, the “Patrol Records” (after each fishing and hunting trip and after other trips to the field, community members enter data on observation and catches on a standardized calendar), with a community based discussion of knowledge and observations of the status of the natural resources and the resource use (the “Focus group discussion”). The collected data and observations are interpreted by local Natural Resource Councils. Afterwards the proposed management decisions, with supporting data, are forwarded to the Village Council for its endorsement before being submitted to the local authority staff responsible for the specific village. The results are used by the community, the local government authority and the national government to take decisions about the management of living resources. The approach taken by the Pisuna project has received considerable interest among scientists (see for instance “Locally-based monitoring of natural resources [...] appears effective in incorporating evidence-based assessments into decision-making at the local level [...] thus having considerable potential to influence on-the-ground management activities.” Science, 2007 <http://www.sciencemag.org/cgi/eletters/315/5818/1518>). The project also contributes to the implementation of the Arctic Council’s strategy on community-based resource monitoring (CAFF/2008).

Although seal hunting Iceland is no longer a vital component of local communities’ livelihood, **project No. 60** involves volunteers and local people as well as visitors from Iceland and other countries helping in data collection in order to monitor the number of seals that are hauling out along the coast line of the two peninsulas: Vatnsnes and Heggstaðanes. This provides critical information for the conservation and use of

the seal population around Iceland where seals are a controversial animal species due to perceived predation costs in fisheries (see Einarsson 1990, 1996).

Project No. 48 defined the sensitivity of marine and land areas where both extraction and traditional activities take place, and ranked them accordingly to four degrees of sensitivity. The study was done by interviewing local fishermen and hunters, who were asked which species they are hunting or fishing and to draw on maps where these activities actually take place (but also other activities as berry gathering, bird eggs collection, and where local historical remains are located). Although this project has covered only a small segment of the West Coast of Greenland, it could be used as a good example for the many other areas in the Arctic where oil and gas extraction overlap with traditional activities.

Project No. 25 deals more directly with problems arising from nature conservation and local rights of harvesting, indeed, how boundaries for nature conservation have affected local rights to land and resources as well as local livelihoods. The project aims at contributing with knowledge in the work of a Nordic Sami Convention as a basis for future trans-national management policy decisions and for decisions on ratification of ILO 169¹⁶ in Sweden and Finland.

¹⁶ International Labour Organization, C169 Indigenous and Tribal Peoples Convention, 1989.

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