



DISPLACED BY PLASTICS

A CONVERSATION WITH SÁMI KNOWLEDGE HOLDERS
ABOUT THE IMPACTS OF PLASTICS



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From left: Report authors Inga Margrete Lillevoll and Kathrine I. Johnsen talk with knowledge holders Gunn Solbakken Isaksen, Aud-Karin Furuseth and Ruth Larsen. Photo by Tina Schoolmeester.

BACKGROUND

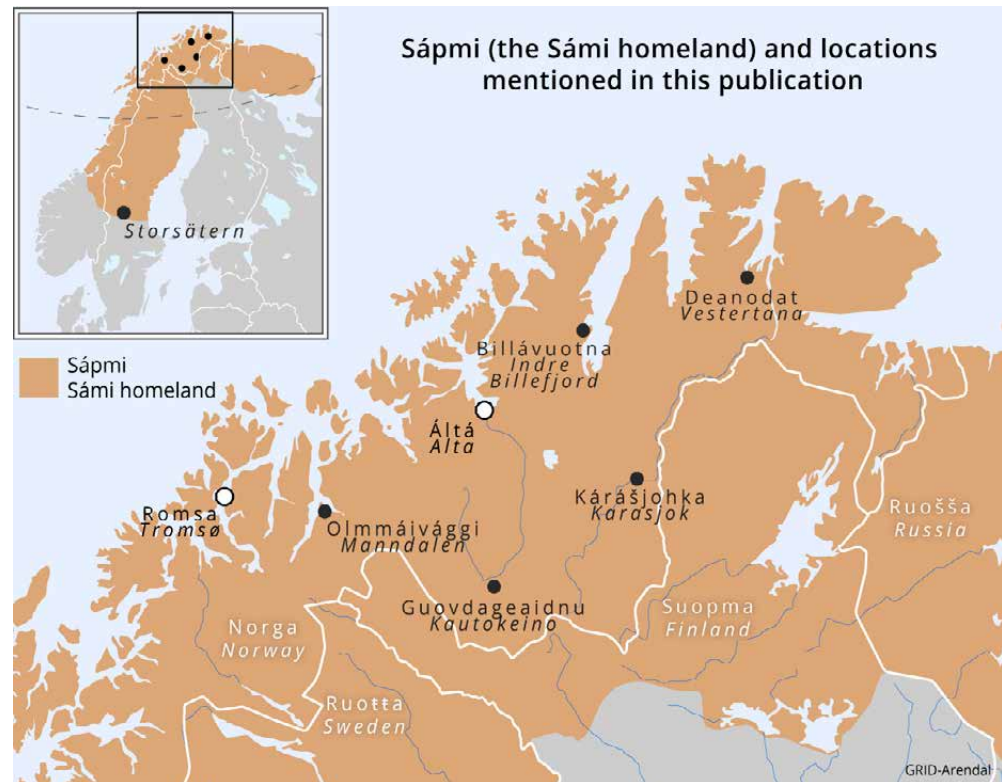
Attention is increasing towards plastic waste and the challenges it poses – in the media, within the research community, among policymakers and decision makers, and among the general public. In 2017, the world's environment ministers agreed on a vision to eliminate the discharge of litter and microplastics into oceans. In 2022, the United Nations Environmental Assembly, the highest decision-making body on environmental issues, by the resolution 5/14 decided to develop a legally binding instrument on plastic pollution by 2024. The Nordic countries are part of a coalition with high ambitions of this instrument.

Packaging is among the most commonly produced plastic consumer products and includes items such as plastic bottles, plastic bags, containers for food and household products, and food-packaging film. Many of these products are used for a very short time and alone make up about 26 per cent of plastic lost to the environment globally (UNEP 2018a). Finding solutions to reduce plastic consumption is one crucial aspect of reducing plastic pollution. Some countries have already banned single-use plastics, and others are considering implementing such bans. Alternatives to single-use plastics are becoming more available and popular: single-use items such as bags and cutlery, for example, are now available in paper, cloth,

bamboo and wood, while reusable items such as drinking straws made of metal or glass are becoming more common.

When mass-produced plastics were introduced, people everywhere – including within Sámi communities – quickly saw the

benefits of the new material. It was durable, affordable and made life easier. However, there is now a growing awareness that the benefits and costs of plastics are not experienced equally, but are influenced by ecological, socioeconomic and gender variables.



This report stems from an interest in exploring solutions and alternatives to the sometimes problematic use and disposal of plastics with Sámi Indigenous Knowledge holders. In May 2019, we visited eight Sámi knowledge holders in northern Norway and one in Sweden. The idea was to use plastic as an entry point to discuss consumerism and explore Indigenous Knowledge and new inventions that can replace and help reduce plastic consumption and pollution. However, these conversations revealed aspects that are less discussed in the public debate, namely how the use of and easy access to plastic items affect people's knowledge of making things, their understanding of ecological processes and natural resources, and their relationship with the environment.

Indigenous worldviews differ from Western understandings, which often present the natural world as separate from humans. Indigenous understandings are multidimensional and more explicit in presenting human well-being and identity as intertwined with the environment through responsibilities, rights and traditions surrounding resource use. In the Sámi community's worldview, the "boundaries between nature and culture, human and non-human, are in constant flux" (Kuokkanen 2007, p. xix). How the rapid introduction of plastic products has affected Indigenous Peoples' values, beliefs and culture, however, are aspects that have not received much attention

from governments or the research community. As such, there is an important voice missing from efforts to understand the benefits and costs of plastics and to find solutions to the growing issue of plastic pollution.

Plastic has replaced many objects traditionally made locally. At present, both the knowledge and traditional materials are still available within Sámi communities, but as less people use this knowledge handed down generations to harvest materials and handmake items, it is in great danger of being lost.

Traditional practices of harvesting natural resources form part of Indigenous Peoples' relationship with and stewardship of nature. The Convention on Biological Diversity (CBD) has long recognized that Indigenous Peoples' traditional knowledge, innovations and practices are relevant for achieving the Convention's objectives to conserve biological diversity and the sustainable use of its resources.

The Sharm El-Sheikh Declaration on Nature and Culture (CBD 2018) recognized this relationship, by:

Acknowledging that biological and cultural diversity are not only closely linked but also mutually reinforcing, and that cultural elements are a fundamental part of the life and cosmological vision of indigenous peoples and local communities, who actively pursue an intrinsic and balanced

relationship between Mother Nature, human-beings and the Universe.

With this backdrop, this report presents the knowledge holders' reflections on the linkages between the availability of cheap goods – in this case made from plastic – and the altered relationship with nature, loss of Indigenous know-how and deterioration of knowledge about ecological processes. The report also advocates for the importance of Indigenous Knowledge to rediscover practices that are more sustainable, safeguard cultural heritage and protect the environment; such practices can play a significant role in reducing plastic pollution and reversing biodiversity loss.

THE KNOWLEDGE HOLDERS

Interviews were held with nine Sámi knowledge holders (also referred to as the participants) of different ages, with different life experiences and from different locations in northern Norway and Sweden:

Ove Stødle is a *duojár* (a maker of traditional Sámi handicrafts) in his 30s. He lives and has his workshop in Billávuotna-Indre Billefjord, Porsángu-Porsanger. Ove is also an apprentice in traditional wooden boat building through the Sámi organization *Mearrasiidá* in Billávuotna-Indre Billefjord. He is the only apprentice in Finnmark-Finnmark.

Terje Pedersen is from Deanodat-Vestertana. He was born in 1941. Before he retired, he was a sheep farmer and a fisherman. Terje has also been a teacher and construction worker, and he writes about local practices and traditions.

Anna Berit Eira Anti was born and raised in a reindeer herding¹ family. She was born at the end of World War II and lives in Kárášjohka-Karasjok. Anna Berit is a *duojár*.

Gunhild (Gunne) Andersson (née Klemetsson) was born and raised in a reindeer herding family. She is in her mid-80s and now lives in Storsätern in Sweden.

1. The term "reindeer herder" refers to all who participate in reindeer husbandry, not only those who herd the animals on a daily basis.

Karen Marie Eira Buljo is part of a reindeer herding family and participates in all aspects of reindeer husbandry. She is a *duojár* and a communicator of Sámi traditional knowledge and practices. She is in her early 60s and lives in Guovdageaidnu-Kautokeino.

Ruth Larsen, Aud-Karin Furuseth and Gunn Solbakken Isaksen are experienced *duojár* and active members of Olmmáivággi-Manndalen Husflidslag,² a handicraft cooperative. They are in their late 60s and 70s and live in Gáivuotna-Kåfjord. Through the Husflidslag, the women maintain and teach about local handicraft traditions, raw materials and food culture of Gáivuotna-Kåfjord.

Sara Inga Johansdatter Utsi Bongo is part of a reindeer herding family. She is in her 30s and is a teacher of *duodji* at the Sámi High School and Reindeer Husbandry School in Guovdageaidnu-Kautokeino.

2. Olmmáivággi-Manndalen Husflidslag (Manndalen Handicrafts) is a cooperative that makes handmade items for sale. Its goal is for traditional Norwegian and Sámi handicrafts to continue to be made, which it facilitates by selling knitted, carved, sewn and other handmade items and offering courses to teach the different crafts. Olmmáivággi-Manndalen Husflidslag has around 80 members, many of whom work actively to maintain the traditional knowledge and practices related to the weaving of a local tapestry known as Manndalsgrena. See <https://www.blomsterengdesign.no/wp-content/uploads/2019/04/Report-Project-Exam-2018-paper-version.pdf>.



Anna Berit Eira Anti. Photo by Kathrine I. Johnsen.



Karen Marie Eira Buljo. Photo by Inga Margrete Lillevoll.



Terje Pedersen. Photo by Inga Margrete Lillevoll.



Gunhild (Gunne) Andersson. Photo by Jannie Staffansson.



Gunn Solbakken Isaksen. Photo by Tina Schoolmeester.



Sara Inga Johansdatter Utsi Bongo. Photo by Tina Schoolmeester.



Aud-Karin Furuseth and Ruth Larsen. Photo by Inga Margrete Lillevoll.



Ove Stødle. Photo by Inga Margrete Lillevoll.



Gállohat, traditional footwear made of reindeer skin. Photo by Gunn-Britt Retter.

SÁMI TERMS USED IN THE REPORT

Beaska – Traditional clothes made of reindeer skin.

Bidus – Traditional food made of reindeer meat (sometimes including the bones and heart).

Boahkkebiergu/boahkkeguolli – Words describing the first stages of drying (reindeer) meat or fish in the sun and wind, a Sámi traditional way of conserving food.

Divdna ávkkástallan – This refers to the comprehensive use of a material.

Duodji – Traditional Sámi handicrafts based on traditional techniques and materials from nature. These include everyday objects such as clothes, tools, kitchen equipment, hunting equipment and jewellery that is handmade and based on old traditions (Saami Council, n.d.).

Duojár – A person who makes *duodji*.

Gállohat – Traditional footwear made of skin from reindeer heads and legs, used both outdoors and indoors during winter. Also called *gápmagat*.

Gákti – A piece of traditional Sámi clothing, originally made of reindeer skin but now mostly made of cotton, wool and silk. The *gákti* is worn for ceremony or work, with its decorations representing different traditional meanings.

Guksi – A wooden drinking cup.

Gulahallat eatnamiin – Living in harmony with nature.

Herkkeš – A large wooden kitchen utensil used to stir pots when making *bidus* and also previously used to roast coffee beans on the fire.

Lávvu – A temporary dwelling. It resembles the tepee used by Indigenous Peoples in North America.

Loavdda – A tarp used to cover the *lávvu* and keep its interior dry.

Njuikun – A heddle or tool used to weave patterned bands for the details of the traditional Sámi clothing. A *njuikun* is traditionally made of wood or antlers.

Rátnu – Rugs and blankets woven in a traditional way from sheep's wool in natural white with patterns in natural black, or using wool coloured with plant dyes. *Rátnu* were traditionally used as *lávvu* covers, in sleds, as bed covers and as floor mats. Nowadays, *rátnu* are mostly used as wall decorations.

The term “plastic” means pliable and easily shaped. Today, plastic more commonly refers to a synthetic material made from polymers, such as polyethylene, polyvinyl chloride (PVC) and nylon. Plastic is made from hydrocarbons found in oil and natural gas.



Plastic litter and driftwood, both have been washed ashore in Troms, Norway. Photo by Bo Eide.

PLASTIC FANTASTIC?

In 1907, Leo Baekeland filed a patent for synthetic polymers (plastics), paving the way for the mass production of plastic commodities in the 1950s (Pilato 2010). Since then, “the material of a thousand uses” has steadily displaced many other materials. Plastic is durable, malleable, adaptive and inexpensive, qualities that have provided benefits of convenience, hygiene, safety and affordability, thereby revolutionizing aspects of industries such as health care, food storage and transport.

From 1950 to 2017, the annual global production of primary plastics grew from 2 to 438 million metric tons, and as such, plastics have overtaken most other manufactured materials (Geyer et al. 2020). Plastic packaging is now considered one of the main global sources of waste (UNEP and GRID-Arendal 2016). The projected exponential growth in the consumption and presence of plastic in the environment has been described as the “plastic age” (Stevens 2002; Thompson et al. 2009). Life without plastic has become almost unthinkable and near impossible, with plastic now being the norm. While there are many benefits to plastic, the growing amount of plastic waste in oceans and on land and its effects on biodiversity and the environment are hugely concerning. It is essential that plastic be durable, used for as long as possible, and then properly disposed of and managed when it can no longer be used.

Plastic waste concerned **the participants** in this scoping study, who talked about how the volume of household plastic waste has grown in recent years. Food, for example, is packaged in several layers of plastic. **The participants** reported observing more plastic waste in the mountains, floating in water bodies and being washed ashore from the ocean.

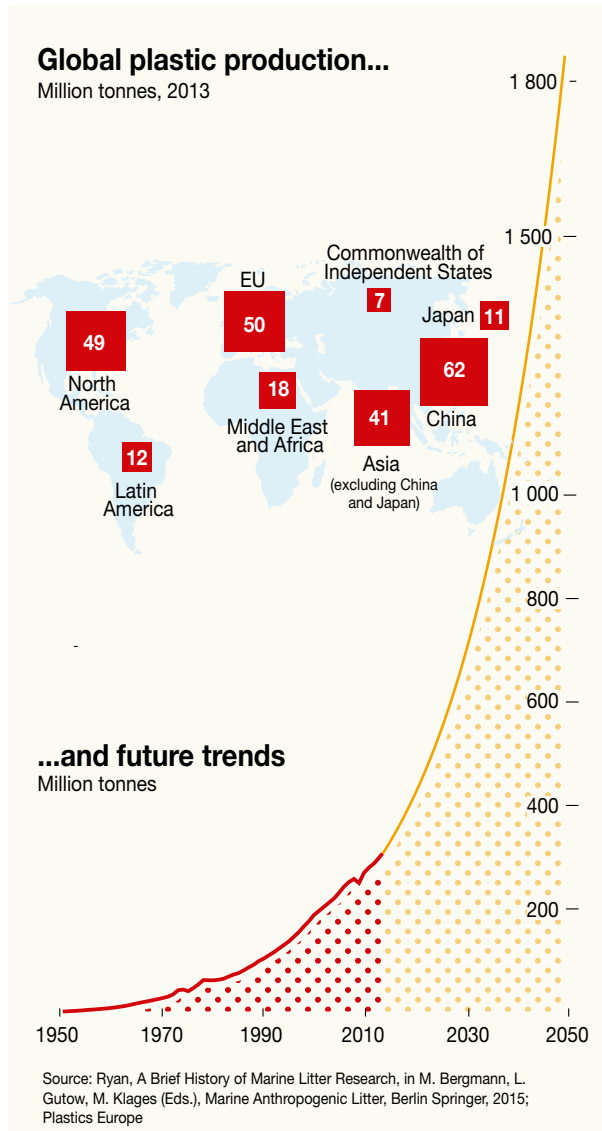
Terje Pedersen, for example, talked about the changes in debris that float ashore in Deanodat-Vestertana. He explained that materials that used to come ashore were seen as a resource to be distributed among households according to a set of informal rules. One of the most valuable resources found onshore was blubber from landed whales. According to **Terje**, a family in Porsángu-Porsanger became wealthy after selling blubber from a group of whales that had landed on their side of the shoreline. Timber and useful fishing equipment also used

Like everyone, Sámi people started using plastic commodities. Ekerwald (1998) explains that Sámi reindeer herders found various uses for plastic bags, for example, though their use of plastic bags was intentionally not shown in tourist photos so that the nomadic herders would appear more exotic.

to wash ashore. Today, however, what lands on the shore is no longer seen as valuable. No one collects the timber and wood any longer. Most of what floats ashore consists of disposable drinking water bottles and plastic packaging. And today, significant resources are spent removing these plastics.

Although **the participants** were worried about the consequences of plastic litter, their perspectives on plastics were not clear-cut. They acknowledged that some plastic goods have made life easier and more comfortable, such as the rubber boots and tarp that keep their feet and lávvu dry in wet weather, which they want to continue using.

There are also examples of plastic objects that facilitate the production of *duodji* and thus help keep Sámi traditions alive. One example presented by **Ove Stødle** and the **women at the Husflidslag** was the *njuikun*, a rigid plastic heddle used to weave bands for shoes, backpacks, belts and other details on Sámi clothing. The heddle was traditionally made of bone or wood, but because few people know how to make it, the traditional heddle is not available to all. With the plastic heddle, more people have access to the tool and can participate in the tradition of weaving bands. Plastic heddles also do not split the yarn, which commonly occurs with wood heddles.



UNEP and GRID-Arendal, 2016.



Plastic tarp on the *lávvu*. Photo by Beaska Niillas.



Traditional leather boots made by Anna Berit Eira Anti. Photo by Inga Margrete Lillevoll.



Rubber boots. Photo by Olivia Rempel.



Rigid heddle made of wood. Photo by Inga Margrete Lillevoll.



Rigid heddles made of plastic (red) and antlers (white). Photo by Inga Margrete Lillevoll.



Aud-Karin Furuseth illustrates how to use a weaving loom made of wood and stones. Photo by Inga Margrete Lillevoll.



Butter box/lunch box. Photo by Inga Margrete Lillevoll.

REPLACED BY PLASTICS

With the introduction of plastic, the production of many items that were previously made locally – often within the household or by individuals with specialized skills – was moved to companies outside the community. A consequence of this, as noted by **the participants**, was that fewer people kept up the skills needed to make and maintain tools and crafts in the traditional way, or the knowledge needed to identify and harvest the natural materials needed for these products. As traditional practices became less common, fewer people maintained the specialized terminology used for sharing the Indigenous know-how. In this way, plastic substitutes for homemade tools and crafts affect both Indigenous Knowledge and language. **Terje**, for example, explained that all households along the coast used to know how to maintain and mend fishing nets. With cheap plastic nets now available, knowledge about repairing nets made of natural material disappeared as did the terminology for the traditional fishing gear and practices of using them. While nylon nets are still repaired, nets made of cheaper plastic are not. **Terje** argued that there should be quality standards for fishing tools to reduce waste. This would also reduce the amount of plastics and other litter that end up in the ocean, **Terje** stated.

Nesheim et al. (2006) discuss how social and economic changes towards more globalized production and consumption patterns have impacts on traditional societies, with the number of people who have access to industrial products rapidly increasing, and people's dependence on living resources declining. This results in a change of knowledge, altered practices with regard to such resources and a widespread loss of specialized vocabulary.



Braided bark container. Photo by Kathrine I Johnsen.

FOOD STORAGE

- Food storage: Before plastic bags existed, **some of the participants** used bags made of cloth and leather, wrapped food in cloth (e.g. bread and meat), bark and cardboard, made coffee bags of leather, and wooden or braided bark containers served as butter or lunch boxes.
- Food preservation: If fish are preserved in plastic buckets, they can lose their colour. This can be avoided by putting bark in the bottom and top of the plastic bucket. According to **Gunne Andersson**, wooden butter boxes were wrapped in bark, which protected the butter from heat.
- Drying, smoking, salting: As **Anna Berit Eira Anti** noted, people used to know how to preserve food. After slaughtering, reindeer herders would salt and semi-dry the meat while still in the mountains, before packing it in wooden boxes, hanging it up and consuming it when they came to the coast.

TOOLS

- Lasso ring
- Wooden chopping boards are self-cleaning and more hygienic than plastic boards (Spiegel 2014).
- Wooden spoons: *guksi* and *herkkeš*. Plastic stirrers are often too soft.
- Fishing nets made from natural materials versus plastic nets. The nets made from natural materials had to be soaked in copper sulphate or tar every 14 days for maintenance. This disrupted the fishing and was a source of pollution.



Lasso rings made of plastic and antlers. Photo by Inga Margrete Lillevoll.



Herkkeš. Photo by Inga Margrete Lillevoll.



Wooden chopping board. Photo by Inga Margrete Lillevoll.



Guksi. Photo by Gunn-Britt Retter.



Fishing line made of natural material. Photo by Inga Margrete Lillevoll.

ITEMS FROM REINDEER AND SHEEP

- Reindeer stomachs were used to store milk, fat and blood. The stomach bags that stored blood were dried and used in people's diets and as dog food. Dried stomachs were also used as containers for water.
- Cords made of plastic or by animal tendons/sinew.
- Wool mittens versus rubber gloves during fishing. People previously only used wool mittens. In the morning, the wool mittens needed to be dipped in the sea to thaw before putting them on, yet they would remain warm.
- Oil-based yarn versus wool. "Superwash" yarn contains plastic and microplastic.



Wool yarn. Photo by Inga Margrete Lillevoll.



Wool mittens. Photo by Inga Margrete Lillevoll.

The mass production of plastic items made different types of consumer goods cheaper and more difficult to repair. This has removed some of the incentive for individuals to make and repair their own clothes, fishing gear and other everyday items. **Karen Marie Eira Buljo** talked about silk scarves, which are used as part of the *gákti*, as an example. When a silk scarf becomes dirty or tangled, it is now common to view it as "waste", but knowledge exists among Indigenous People on how to wash the scarves in a way that preserve their colours and shine. According to this knowledge, scarves should be laundered and hung out in autumn or spring months when there is sun and temperatures just below zero, as this keeps white cloth shiny.

THE VALUE OF INDIGENOUS KNOWLEDGE

The participants emphasized the value of knowing how to manage without plastics.

Some of the participants were worried that many young people consider Indigenous Knowledge to be irrelevant or impractical, and do not see the benefits of learning old techniques and practices. **Other participants**, however, had observed an increased interest in learning skills for making and maintaining traditional clothing. **Karen Marie**, for example, said that she had seen an increased interest in mending and reusing clothes, but many do not have the Sámi Indigenous Knowledge to sew, maintain and repair a *gákti* and other types of *duodji*. The **women at the Husflidslag** also emphasized the value of maintaining knowledge about how to repair clothes and create new items from old pieces of textile. They argued, for example, that natural wool can be reused again and again: an old wool sweater can be cut into soles for slippers or worn socks, while remnants of wool yarn can be used to make a felted image or a seat pad.

Terje explained that where he grew up, people were rich in the sense that they had extensive access to natural resources: fish at sea and inland lakes and rivers; grazing areas in the forests and mountains; wood, plants and wild game in the forests; and berries in the wetlands. He emphasized, however, that access to this wealth of natural resources depended on having knowledge about what to harvest and how to use and preserve the resources. People without knowledge about

nature and ecological processes, **Terje** argued, are in many senses poorer and less adaptive than those who hold this knowledge. **Sara Inga Johansdatter Utsi Bongo** told a story of when she was with her family in the mountains reindeer herding and her mother realized that she had forgotten to bring a ladle. Her mother's reaction was to quickly carve a new ladle out of material she found outside the *lávvu*. Her mother had the knowledge of how to carve and what type of wood to use.

The **women at the Husflidslag** shared another example of valuable knowledge relating to wool and traditional weaving, an activity that gave economic independence to women in Olmmáivággi-Manndalen. In this area, people used to live off farmed products, fishing and woven fabrics. Looms were a common item in all homes, often found in the kitchen where women would weave when they had time in between other tasks. Weaving the local tapestry was an important tradition of Sea Sámi. The *rátneu* (*Manndalsgrene* or *grene* in Norwegian) was used as a trading object and was a critical part of the household economy, especially in years when fishing was not successful. *Rátneu* were traditionally used as *lávvu* cover, in sleds, as bed covers and for various other purposes. Rich families would also use them as floor mats. Today, the *rátneu* is mostly used as a wall decoration. The coat of arms of Gáivuotna-Kåfjord from 1988 depicts a spinning wheel, reflecting the long tradition and fame of the local handicrafts.



Loom with Manndalsgrene. Photo by Tina Schoolmeester.



Detail of male *gákti* from Ivgu/Lyngen. Photo by Inga Margrete Lillevoll.

DISPLACED BY PLASTICS

The participants explained that Indigenous Knowledge is tied to nature and involves understanding ecological processes, where and when to harvest, and potential uses of different natural resources. **Anna Berit** argued that Indigenous Knowledge – and the traditional way of living in harmony with the seasons – made it possible for people to survive in nature. **Ove** said that using wood, reindeer antlers and skins as materials in *duodji* has connected his everyday life to nature and the seasons, as he has learned where to harvest these materials and how to identify suitable wood. Indigenous Knowledge is therefore closely linked to people's relationship with nature.

The **women at the Husflidslag** said that knowing how to find suitable material to build a loom used to be common knowledge in Olmmáivággi-Manndalen. Today, only a few people have this knowledge. People also had knowledge of the seasons and annual cycles and when to carry out different activities to get the highest quality products: they would collect willow bark in spring, harvest fish and bake during flood tide (and not ebb tide), and slaughter and cut wool from the sheep when the moon was waxing. The **women at the Husflidslag** also argued that people's relationship with the environment comes from having knowledge about nature and its resources. **Karen Marie** agreed

that knowing how and where to find *duodji* material in nature gives individuals a special connection to the landscape from which they are harvesting. She emphasised that people within reindeer husbandry have a special relationship with the grazing areas of their animals, and especially the calving grounds (spring pastures) and the areas where the animals graze during rutting (autumn pastures). **Karen Marie** explained that the reindeer pastures are also where her ancestors, parents and sister were born, it is where she harvests material for *duodji*, and it is where she is at home.

Terje said that with the transition to plastic boats, home-made wooden boats were becoming rare. People's knowledge about finding natural material to build boats has vanished, along with their understanding of changes in nature. **Terje** argued that to build a good boat, individuals need to know what type of wood to use to make its various parts and where to find the right trees in nature. For example, birches growing in steep and sandy areas provide material for runners and skis. **Terje** explained that he, like many other local people, never just goes for a walk in nature. He always goes walking for a specific purpose or errand, meaning he actively observes and gains deep knowledge about and appreciation of his surroundings. Despite this, **Terje** said that local people often found

that biologists, nature managers and other scholars easily dismissed their Indigenous Knowledge.

The **women at the Husflidslag** explained that the pattern of the *rátnu* was made with naturally coloured wool. People knew what kinds of plants to harvest to colour the wool, and also knew when and where to harvest different plants. People reared black sheep to have access to black wool. Urine was used to make blue wool and to process leather. Women used to spin their own yarn and had knowledge about the different qualities of wool, such as, for example, that wool from the traditional old breed can be spun into thinner threads, but must be mixed and carded with another wool type for it to intertwine.

Ove explained that reindeer antlers and skins also have different qualities that make them suitable for various purposes. Referring to the production of traditional footwear (*gápmagat*), **Anna Berit** emphasized the need for knowing what kinds and qualities of leather to use for the different parts of the shoe, how to make thread out of tendons and what sewing technique to use to make the footwear waterproof.



Gathering reindeer in Finnmark, Norway. Photo by Lawrence Hislop.

USING THE ENTIRE ANIMAL

When an animal is slaughtered, the Sámi tradition and norm is to utilise the entire animal.

Terje, however, raised a concern shared by many: the Norwegian regulations for food safety have made it more difficult to exercise home slaughter. When the slaughter is centralized in large slaughterhouses, Sámi lose access to certain parts of the animal, such as blood and intestines. This affects people's ability to use and transfer knowledge of how to utilise and preserve the entire carcass. Until the 1960s, people slaughtered at home, **Terje** explained. The whole family was involved; the children's job was to stir the blood. Food and culture are closely linked. When you remove traditional ways of preserving and preparing food, you also remove our culture, he said. **Karen Marie** explained that slaughterhouses consider reindeer heads to be waste. According to Sámi tradition, however, the head is a valuable resource for food and *duodji*. For example, the skin on the head is particularly durable and therefore is used to sew *gállohat*, bags for sewing equipment and the shoulder parts of the *beaska*. *Vuoigŋamašgáhkku* is traditional food in which reindeer brain is a key ingredient.

Gunne said that reindeer hooves were used as medicine and cooked to extract oil, which was used to lubricate and preserve shoes, skis, sledges and much more. Reindeer stomachs were traditionally used to store milk, fat and blood. She said that the structure of the stomach makes it waterproof but not airtight, making it perfect for storing and

drying blood. **Gunne** recounted how the dried blood was ground and used in people's diet, while **Anna Berit** said that the dried blood was used as dog food. By blowing up the stomach like a balloon and letting it dry, **Gunne** explained that people also made containers for storing water.

The participants had ideas for using reindeer bones as a sustainable alternative to other materials. For example, **Sara Inga** suggested carving cutlery out of bones instead of using disposable plastic cutlery, while **Ove** noted that he has started producing decorations made of reindeer bones and using mica as an alternative to silver.



Reindeer skin for *gállohat*. Photo by Inga Margrete Lillevoll.

Nesheim
et al. (2006)
argue that changes in
people's knowledge systems
affect their relationships with
land and other life forms,
becoming great obstacles for
the transfer of traditional
knowledge.



Arctic vegetation. Photo by Lawrence Hislop.

LEARNING FROM THE PAST

Karen Marie talked about the importance of transferring traditional Sámi knowledge to the next generations. In addition to maintaining traditional practices – such as making *duodji* or reindeer husbandry – she argued that the knowledge transfer has a positive effect on young people's identity and self-esteem. One approach could be for schools to encourage, train and supervise young people to make their own traditional clothes, such as *gákti*, to learn traditional sewing techniques.

Terje, however, worried that nowadays there are fewer venues for knowledge-sharing between generations. In his view, smart phones and tablets have created a barrier for reflective intergenerational conversations and are a hindrance for transferring the art of Sámi storytelling, which is the traditional way to explain the world and share wisdom. He talked about the potential of inviting local Indigenous Knowledge holders to teach children in school.

Ove emphasized the need for informal venues where people can meet to share knowledge, create *duodji* and learn from each other outside the core Sámi areas such as Guovdageaidnu-Kautokeino and Kárášjohka-Karasjok. **Ove** thought such venues would provide opportunities for revitalizing the Sámi culture along the coast. **Sara Inga**, however, argued that people in Guovdageaidnu-Kautokeino have a similar need for venues

where they can learn about *duodji* production. According to her, the traditional home production of *duodji* from hard materials such as wood and bone is especially threatened in many places in Norway. She argued that in Sweden, the Sámi had been more successful in maintaining these traditional handicraft skills and practices because the reindeer herding families used to have access to financial support for starting *duodji* companies. **Ove** also talked about the need for practical *duodji* education, similar to what they provide at the Folk High School in Jåhkåmåhkke-Dálvvadis-Jokkmokk, Sweden. **Karen Marie** argued that there is need for knowledge centres for traditional Sámi livelihoods. In addition to increasing the awareness of the general public, these centres could play a role in transferring the knowledge, practices and specialized terminology related to these livelihoods to the next generation of Sámi practitioners.

The **women at the Husflidslag** were concerned that if Indigenous Knowledge disappears, the cultural landscapes and biodiversity will also alter and even vanish, because as practices change, so too do landscape characteristics. At the national level, the Husflidslag has developed a Red List³ of traditional handicraft techniques and skills that are being lost. To help create

3. See <http://www.husflid.no/fagsider/roedlista>.

awareness of and preserve the area's traditional skills and techniques, the Husflidslag in Olmmáivággi-Manndalen engages with day-care centres and schools, offering courses and seminars and organizing festivals and competitions.

The Sámi High School and Reindeer Husbandry School in Guovdageaidnu-Kautokeino provide a *duodji* programme, which is both practical and theoretical. Through this programme, **Sara Inga** explained that the school intends to strengthen youth awareness of nature, knowledge of traditional handicraft techniques, and the aesthetic and ethical value of *duodji* such as the *gákti*. It also aims to develop students' capacity to be innovative and create new or "modern" *duodji* using Indigenous Knowledge and Sámi ethics and aesthetics. **Sara Inga** emphasized the importance of Sámi worldview as a basis for ethics and aesthetics. The expression *divdna ávkkástallan* concerns the comprehensive use of a material, which means using all parts of a resource in the best manner possible in terms of its shape and function. To ensure *divdna ávkkástallan*, individuals need to know how to recognize the different qualities of the material being used, such as reindeer skin, for example. However, according to Sámi worldview, animals have greater value than just being "material", as captured in the saying "*li galgga geahččat ealli bohccos ávdnasiid*", which means "do not look for material from living reindeer".



Fishing net made of natural material. Photo by Inga Margrete Lillevoll.

CONCLUSION AND FOLLOW-UP

When mass-produced plastics were introduced in the 1950s, people everywhere – including within Sámi communities – quickly saw the benefits of the new material. Plastic was durable, affordable and made life easier. Reindeer herders switched to plastic tarps to keep their *lávvu* dry and plastic containers for storing and transporting food, and fisherman switched to rubber boots to keep their feet dry and plastic fishing nets, which needed less maintenance than nets made from natural material.

Nowadays, life without plastic has become close to unthinkable. But while plastic may have many benefits, it becomes a problem when discarded improperly. People are becoming more aware of the environmental challenges of plastic pollution. Beach clean-ups are now a common activity, the market for plastic alternatives is growing and at least 127 countries have legislation to regulate plastic bags (UNEP 2018b). Since 2018, more people have been doing Google searches related to plastic waste,⁴ indicating increased concern about plastic pollution.

This report discusses different aspects of plastics as presented during conversations with Sámi knowledge holders in 2019. Two issues stand out in particular, both related to

the social impact of the introduction of easy and cheap plastic commodities.

The first issue concerns plastics as both a benefit and a challenge for Indigenous Knowledge and Sámi culture. With the introduction of plastics, many items previously made locally and based on natural materials – often within the household or by local individuals with specialized skills – are now produced cheaply and from plastic by companies outside the community. There is also an increased tendency to replace rather than repair worn or imperfect items. A particular concern is that fewer people are gaining the skills needed to make, repair and maintain traditional tools and crafts, or to redesign (parts of) them as something else. As practices and know-how disappear, the specialized terminology for sharing and transferring knowledge also vanish. There is concern about plastic items ending up as litter, which happens if the items are not managed properly at the end of their useful lives.

The second issue brought up in these talks concerns plastics as an alienator of human-nature relationships. The knowledge holders emphasize the close connection between producing traditional tools and crafts and people's understanding and appreciation of the environment. The practice of harvesting from nature – wood for *duodji* or building

boats, or moss for colouring wool – provides insights about ecological processes and an understanding of where and when to collect different natural resources. Moreover, what and how much is harvested is informed by Sámi ethics, such as the concept of *divdna ávkkástallan*, which concerns the full use of a resource. To ensure *divdna ávkkástallan*, however, individuals need the skills to recognize that the different qualities of trees, wool and reindeer skins can be used for different purposes. The Sámi knowledge holders are concerned that access to cheap and available plastics challenges these skills as well as people's relationship with nature, their perception of the value of resources and goods, and their motivation for repairing items rather than buying new items.

Although not directly related to plastics (but directly linked to both aspects just described), **the participants** are concerned that people are now less likely to make use of all resources from animals that are killed. This leads to food waste and decreased food security. The knowledge and skills about how to use a whole animal are also being lost and not transferred to younger generations.

Though the concerns raised by the knowledge holders are based on their own experiences and relate to Sámi culture, their perspectives resonate with many people's

4. See <https://trends.google.com/trends/explore?date=all&q=plastic%20waste,microplastics,plastic%20pollution>

perception of behaviour change that has occurred in only a couple of generations. The concern about people's relationship with nature is also discussed in national and international forums. For example, the Norwegian Ministry of Climate and Environment (2015) states that:

In recent generations, there has been a steep decline in traditional knowledge of nature in Norway, and more and more of our cultural and natural heritage is being lost. This means that local communities' traditional knowledge of species and landscapes, and not least, our awareness of our own place in nature, is gradually disappearing.

In November 2019, Inger Andersen (2019), Executive Director of the United Nations Environment Programme (UNEP), said that:

Modern urban societies have been built entirely on using nature as an extractive resource and distancing ourselves from it as far as possible, save for the controlled spaces of parks or trips out into the wild. This disconnect is the source of most of the environmental problems the world faces. We made nature both our servant and enemy, rather than ally and friend.

The vision of the Convention on Biological Diversity (CBD) is for humanity to live in harmony with nature. Yet, the Intergovernmental

Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment on Biodiversity and Ecosystem Services from 2019 states that nature is being altered faster than at any time in human history and that the rate of species extinctions is accelerating. Although biodiversity is in decline across the globe, the report shows that it is less rapid in areas managed by Indigenous Peoples and local communities.

According to the Sámi participants of this scoping study, the impact of changing consumption patterns facilitated by cheap plastics and mass production contributes to changing human-nature relationships.

Both Andersen and Elizabeth Maruma Mrema, the Executive Secretary of the CBD, recognize that the traditional practices of Indigenous Peoples and local communities could provide solutions that the wider world must consider to reverse the trends of biodiversity loss (Andersen 2019; Mrema 2019). This transfer of knowledge could also be applied to other environmental challenges, such as climate change adaptation. Andersen and Mrema identified changing human-nature relationships as a key driver for loss of biodiversity.

To follow up on this study, we recommend further exploring Indigenous practices, Knowledge and worldviews that can help achieve the CBD's vision of humanity living in harmony with nature – *gulahallat eatnamiin*. We also recommend investigating whether strengthening human-nature relationships could help address unsustainable consumption and production patterns and how Indigenous Knowledge can inform and improve the management, use and reuse of plastics and their alternatives.

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DISPLACED BY PLASTICS

A CONVERSATION WITH SÁMI KNOWLEDGE HOLDERS
ABOUT THE IMPACTS OF PLASTICS