



Waste management in the North – International and national context

WANO Working paper

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1. Introduction

The global increase of solid waste levels as a result of expanding populations and increasing incomes underlines the need for improved municipal waste management practices and governance. This is essential for environmental quality and sustainability in urban environments: A sustainable management of waste is associated with better environmental efficiency, economic affordability, social acceptance, and public engagement in waste management practices (Filimonova & Birchall, 2024)¹.

Also in the circumpolar north, sustainable waste management attracts rising attention. Like other high-income countries, the Nordic countries share the challenge of high amounts of waste generation per capita. At the same time, global trends including climate change, the green transition and a need for an increasing circular economy force the Nordic waste sector to upgrade management plans and industrial operations that are characterized by vulnerable conditions such as harsh climatic circumstances, scattered populations, remoteness, long distances, and smaller waste volumes (Teräs & Mäenpää, 2024²; Behzad et al, 2020³).

The movement towards more efficient, sustainable, and circular approaches has the implication that waste management companies need to consider changing regulatory frameworks as well as political and legal factors that have the potential to influence operations of waste management systems in the Nordic region. Such legal determinants, regulatory frameworks, and institutions that define new strategies play an important role when it comes to the implementation of national and international waste policies.

In the Nordic region, national waste policies are also continuously informed and influenced by international cooperation. The exposure to operational challenges caused by harsh climatic and geographic circumstances and the definition of similar ambitions towards the green transition and circular economy have strengthened cross-border and international collaboration in the Nordic region. This includes cooperation on new business opportunities, innovation upgrading, technological solutions, information-transfer, related spill-over effects, and other aspects.

With focus on regulatory frameworks and international cooperation on waste management, this working paper has two major objectives. On the one hand (1), It aims to provide desk-study-insights into the existing political and legal frameworks and factors that enable and structure the implementation of national and international waste policies in the neighbouring Nordic countries Norway, Sweden, and Finland. Here, national, and international key regulations, directives and strategies that influence municipal waste management are introduced. On the other hand (2), this report aims to inform about relevant waste management cooperation initiatives in a broader international and EU context. This includes e.g. cross-border initiatives in the Nordic region, international platforms for collaboration and information-sharing, or research and innovation projects that altogether can provide input into waste sectoral policymaking by stressing needs and framework conditions for Nordic waste management operators and other stakeholders.

¹ [Sustainable municipal solid waste management: A comparative analysis of enablers and barriers to advance governance in the Arctic - ScienceDirect](#)

² [Arctic foundational economy and smart specialization application in practice: A story of municipal waste management in North Norway](#)

³ [A comparative assessment of solid waste management performance in the Nordic countries based on BWM-EDAS - ScienceDirect](#)

This work is a delivery of the WANO 2021-2024 project (Waste Management in the Arctic North, under the Research Council of Norway program) which focuses on Arctic cross-border innovations and technology transfer on municipal waste management. In addition, the WANO project aims to put municipal waste management in North Norway into a broader international perspective and to provide the North Norway waste management actors and stakeholders with interesting learning cases to further develop municipal waste management in North Norway (WANO, 2024)⁴.

About NORCE

NORCE is one of Norway's largest independent research institutes with long-term experience in Arctic research and focus areas such as, e.g., sustainability, climate change, circular economy, and regional development issues. The Sustainable Development in the Arctic group of NORCE in Tromsø works currently intensively on waste management issues. NORCE acted as the Lead partner for the GROM (Green Transition in North Norway) project, under the RFF Nord programme, in 2019-2022, with Arctic waste management as one of the key themes. The WANO project (Waste Management in the Arctic North, under the Research Council of Norway programme) in 2021-2024 focuses on Arctic cross-border innovations and technology transfer, and the ReCoWaMa (Research collaboration with the Waste Management sector in Troms and Finnmark for improved value creation) project 2023-2025, funded by the RFF Arktis programme, focuses on innovation promotion and research collaboration in waste management in North Norway.

⁴ [About WANO](#)

2. Methodology and structure

From the perspective of municipal waste management, this report highlights current legislative and political determinants that influence and structure the implementation of national and international waste policies in the neighboring Nordic countries Norway, Sweden, and Finland. Moreover, this working paper highlights international determinants in terms of initiatives that have the potential to influence municipal waste management practices in the Nordic countries by fostering interaction between authorities and stakeholders of Nordic waste markets. According to the OECD (2021), municipal waste entails materials from households including bulky waste, similar waste from commerce and trade, office buildings and businesses, but also yard and garden waste, street sweepings, contents of litter containers as well as waste from market cleansing if managed as household waste⁵.

For this exercise, two desk-studies have been carried out. The first one describes a brief portfolio of the national legislations of three case-countries, including review of public policy documents and strategies that define rules and policies related to municipal waste management. Here, data was collected from central governmental and ministerial documents and reports about waste legislation provided on the governments' official websites and their databases, and from scientific literature. Moreover, content from the EU's central online portals including online databases from relevant institutions and agencies was collected.

The second desk-study presents a brief portfolio of current initiatives that strengthen the interaction between Nordic authorities and waste management stakeholders in the region. Here, data was collected from central governmental and ministerial online platforms, UN online platforms and databases, EU platforms and databases, online websites of targeted cooperation initiatives as well as scientific literature.

When it comes to international cooperation in the Nordic case-countries, a special focus was on the northern regions of Norway, Finland and Sweden that are located north of the Arctic circle. These regions are characterized by harsh climatic circumstances, scattered populations, remoteness, long distances, and smaller waste volumes. The special research attention of municipal waste management in particularly these regions is a special feature of the WANO project. For this report the scope of the second desk-study is defined by the geographical scope of the Arctic regions of Norway, Sweden, and Finland as it is defined by the Barents Euro Arctic Council (figure 1).

⁵ [Municipal waste | OECD](#)



Figure 1. The Nordic European area in the Barents Euro-Arctic Region (Source: "Arctic Centre, University of Lapland")⁶

This report is structured as follows. First, main legislative and political determinants and frameworks influencing municipal waste management are presented for Norway, Sweden and Finland including key takeaways. Second, international determinants in terms of initiatives fostering international cooperation are described including key takeaways.

⁶ [Barents region](#)

3. National waste management legislations and policies in Norway, Sweden and Finland

The following paragraphs introduce the key national legislations and policies in Norway, Sweden and Finland that influence municipal waste management operations. This also considers superior EU rules in this context.

3.1 Norway

As a European Economic Area (EFTA) state, Norway is obliged to meet different targets when it comes to municipal waste and packaging waste that are defined in different EU directives. EU Directives are legislative acts that set out goals that EU countries must achieve, and it is up to the individual countries to devise own laws on how to achieve these goals (EU, 2024)⁷. On the one hand, the **Waste Framework Directive (WFD)** defines targets for recycling and reuse of municipal waste, while the **Landfill Waste Directive (LWD)** defines goals for the landfilling of municipal waste. In addition, the **Packaging and Packaging Waste Directive (PPWD)** defines key recycling targets for waste when it comes to packaging. According to the European Economic Area Agreement, Joint Committee Decisions that incorporate EU Directives are as legally binding to EFTA states as for EU member states (EEA, 2024)⁸.

Waste management across Norway is regulated by the **Norwegian Pollution Control Act** which aims to protect the outdoor environment from pollution, to reduce pollution, to reduce the quantity of waste, and to promote better waste management (Regjeringen, 2003; IEA, 2024)^{9,10}. The Act largely provides the fundamental principles and legislative framework for waste handling in the country. Moreover, the more detailed regulatory basis for waste handling legislation is the **regulation on recycling and waste treatment (Waste Regulation)**. It implements the targets of the EU WFD and governs the management of waste in Norway, focusing on recycling, treatment, and handling. The regulation aims to reduce waste production, promotes recycling and recovery, and ensures environmentally sound waste management practices including waste disposal. Here, all types of waste are addressed regarding municipal and industrial waste (FAO, 2024)¹¹.

The enforcement of the Norwegian waste regulations is the responsibility of the **Norwegian Environment Agency**. It strives to ensure that waste resources are used as much as possible and that new waste is prevented. Accordingly, the agency drafts regulations for the waste sector and provides guidelines for how these regulations are to be practiced (Norwegian Environment Agency, 2020)¹².

All European Economic Area EFTA States must issue one or several waste management plans that cover the countries' entire geographical territory in line with the WFD (Article 28). In 2019, the Norwegian Environment Agency presented the **Waste Plan 2020-2025** as a central document that describes waste quantities, the status of handling different waste types, and most important treatment and recycling facilities in Norway. In addition, the plan stresses a need for changes in the waste infrastructure, based on EU requirements for reuse

⁷ [Types of legislation | European Union](#)

⁸ [Norway — European Environment Agency](#)

⁹ [Pollution Control Act - regjeringen.no](#)

¹⁰ [Pollution Control Act – Policies - IEA](#)

¹¹ [Regulation No. 930 on recycling and waste treatment \(Waste Regulation\). | FAOLEX](#)

¹² [Our responsibilities - Norwegian Environment Agency](#)

and material recycling. The plan also includes a waste prevention program as a requirement of the WFD (Article 29) (Norwegian Environment Agency, 2021; EEA, 2024)^{13 14}.

According to §30 of the Pollution Control Act, the Norwegian **municipalities are responsible for the collection of household waste** including offers for the reception of hazardous waste from households. According to the waste legislation, no one else can collect household waste without the municipalities consent and municipalities are obliged to have facilities for storage and treatment (Norwegian Environment Agency, 2022)¹⁵. The municipalities are also encouraged to seek waste management solutions through **intermunicipal cooperation**.

On the other hand, **businesses are responsible for the collection of industrial waste**¹⁶. Here, they are free to choose treatment solutions for their waste within current regulations. While some industrial companies have their own landfills or incineration plants, the pollution control authority may by regulation order the manufacturer to deliver industrial waste to a municipal waste treatment facility (FHI, 2021; Pollution Control Act, 1981)^{17 18}.

Eventually, the Norwegian government has issued several strategic reports that address policies and management of certain types of waste. These types of waste play a specific role for the national ambitions towards sustainability and the circular economy. The strategic reports include a **Radioactive Waste Strategy**, a **Circular Economy Action Plan**, a **Plastic Strategy**, a **Strategy for a Green Circular Economy**, and a new **Biogas strategy**.

3.2 Sweden

In general, the legal basis for the Swedish waste management system is rooted in both European and Swedish waste legislation. As a member of the EU, Sweden has a responsibility to implement the **EU Waste Framework Directive (WFD)** which targets to recycle and reuse 55% of municipal waste generated by 2025, the **Packaging and Packaging Waste Directive** which specifically aims for the recycling of packaging waste until 2025, and the **Landfill Directive** which requires to limit the landfilling of municipal waste to 10% of municipal waste until 2035 (EEA, 2022)¹⁹.

Waste management in Sweden is regulated by several Swedish legal acts that prescribe how different kinds of waste must be handled and who is responsible in his regard. A central package of environmental laws addressing resources and waste is the **Swedish Environmental Code**. While the main goal of the Code is to achieve sustainable development and ensuring a healthy environment, it specifically implements laws addressing reuse and recycling and other management of raw materials and energy to establish natural cycles (Swedish Environmental Protection Agency, 2015)^{20 21}. The Code is carried out and supervised by the **Swedish Environmental Protection Agency**.

¹³ [Avfallsplan 2020-2025 - miljodirektoratet.no](https://www.miljodirektoratet.no/tema/avfall/avfallsplan-2020-2025)

¹⁴ [Norway — European Environment Agency](https://www.eea.europa.eu/en/press-releases/2024/04/norway)

¹⁵ [Behandling av avfall - miljodirektoratet.no](https://www.miljodirektoratet.no/tema/avfall/avfall-behandling)

¹⁶ Industrial waste means waste from public and private enterprises and institutions (OECD, 2021).

¹⁷ [Generelt om avfall i Norge - FHI](https://www.fhi.no/tema/avfall)

¹⁸ [Pollution Control Act - regjeringen.no](https://www.regjeringen.no/no/tema/avfall)

¹⁹ [Sweden — European Environment Agency](https://www.eea.europa.eu/en/press-releases/2024/04/sweden)

²⁰ [The Swedish Environmental Code - Government.se](https://www.government.se/tema/avfall)

²¹ [The Swedish Environmental Code](https://www.government.se/tema/avfall)

In Sweden, the government establishes acts and ordinances that set out ground rules for society and everyone in the country must comply with them (Riksdag, 2024)²². The targets of the EU WFD are among others implemented in the **Waste Ordinance** which includes regulations concerning waste, management, measures for waste prevention, but also defines requirements for the classification of waste. In addition, the following ordinances are relevant for Swedish waste management and target different areas herein with their regulations: The **Landfill Ordinance**, the **Ordinance on producer responsibility for packaging**, Swedish **Ordinance on producer responsibility for electrical and electronic equipment**, the **Ordinance on producer responsibility for batteries**, the **Ordinance on producer responsibility for medicines**, and the **Ordinance on producer responsibility for cars** (EEA, 2022)²³. Besides, the Swedish government has issued a law on waste tax and a law on the tax for waste that is incinerated (Riksdag, 2023)²⁴

As an essential part of the WFD implementation, also Sweden has developed a **National Waste Management Plan 2018-2023 with a waste prevention program** which will be again updated after six years. In this document an overview of the targets, instruments and measures are presented that aim to prevent waste and achieve a more resource-efficient and non-toxic waste management in accordance with the waste hierarchy in Sweden (Oneplanetnetwork, 2019)²⁵. In this regard, the waste management plan allows national, regional, or local authorities to take stock of the existing situation in the waste sector, to define objectives and appropriate strategies as well as to identify necessary implementation measures (European Commission, 2023)²⁶.

The National Waste Management Plan must cover the whole of Sweden and covers export and import of waste to and from Sweden, all waste flows except radioactive waste, and highlights a circular economy in which resources are retained in circulation or return into nature's own cycles in a sustainable way as a prerequisite (EEA, 2022).

According to the National Waste Management Plan and regulations by the Swedish Environmental Protection Agency as well as Swedish Environmental Code, **municipalities have the responsibility for collection and treatment** of municipal and solid waste. Municipalities are free to organize waste management themselves and can organize their waste management within the municipal organization or collaborate with other municipalities. In general, such collaboration is done in various forms through municipal associations, joint political boards, and municipal enterprises. In some municipalities the collection and treatment of waste is mostly carried out by private contractors (Swedish Environmental Protection Agency, 2024)²⁷. Every municipality needs to adopt a local waste regulation. Here, municipalities regulate what type of infrastructure is provided for waste management locally and how households and individuals should separate and handle waste. The local waste regulation is decided by politicians represented at the municipal council (Avfall Sverige, 2023)²⁸. In addition, **businesses are responsible for disposing of non-household waste** and waste that does not fall under municipal or producer responsibility. Besides, Sweden has a producer responsibility for packaging, waste electrical and electronic equipment, tires, cars, batteries, and pharmaceuticals. Eventually, **households are responsible for separating and depositing waste** and must follow the municipality's rules for waste management (Avfall Sverige, 2023).

²² [Documents and laws | Sveriges riksdag](#)

²³ [Sweden — European Environment Agency](#)

²⁴ [Lag \(1999:673\) om skatt på avfall | Sveriges riksdag](#)

²⁵ [The National Waste Plan and the Waste Prevention Program | One Planet network](#)

²⁶ [Implementation of the Waste Framework Directive - European Commission](#)

²⁷ [Municipal waste management in Sweden](#)

²⁸ [svensk_avfallshantering_2023_en.pdf](#)

3.3 Finland

As an EU member Finnish waste legislation is, similarly to Norway and Sweden, rooted in EU legislation such as the **Waste Framework Directive (WFD)**, the **Packaging and Packaging Waste Directive** and the **Landfill Directive**. Like its EU neighbour countries, Finland includes in some cases stricter standards and limits than those applied in the EU (EEA, 2022)²⁹.

The EU directives are implemented in the Finnish legal system by the issuing of different Acts of Parliament and permanent government decrees which represent in general the Finnish national law framework. Here, decrees clarify acts and specify their implementation (European E-Justice, 2024)³⁰. Central waste management regulations are represented in the **Waste Act** and **Waste Decree**. The objectives of the Waste Act are the promotion of a circular economy and ensuring the sustainability of natural resource use, to reduce the quantity and harmfulness of waste, to prevent waste and waste management from endangering health and environment and to ensure effective waste management to prevent littering (Finland Ministry of the Environment, 2022)³¹. A complementing **Circular Economy Act** is currently under development, as well. Furthermore, the environmental impacts of wastes are specifically addressed in the legislation for environmental protection. Here, the **Environmental Protection Act** and **Environmental Protection Decree** are responsible for the promotion of the sustainable use of natural resources, to reduce harmfulness of waste, and to prevent adverse impacts that are caused by waste (Finland Ministry of the Environment, 2020)³². In addition, several other government decrees and decisions on specific waste treatment, waste types and activities, directly applicable to the WFD, are steering waste management in Finland. This includes the **Decree on Waste Incineration**, the **Decree on Landfills**, the **Decree on Packaging and Packaging waste**, the **Decree on the Return System for Beverage Containers**, as well as the **Act on Excise Duty on Certain Beverage Containers** and the **Waste Tax Act** (EEA, 2022)³³

Like the other EU countries, also Finland has issued a waste management plan: **From recycling to a circular economy - The National Waste Plan to 2027 (NWP)**. This plan includes a ten-point vision for waste management and waste prevention towards 2030 with detailed targets and measures to be taken. For example, specific targets for municipal waste are to decrease the growth of municipal waste generation in relation to the GDP and to achieve relative decoupling, and to recycle 57 % of municipal waste. Moreover, the plan targets an increase of the amount of recycled packaging wastes in line with the goals of the EU Packaging and Packaging Waste Directive. When it comes to food and bio-waste, the target is to halve food waste by 2030 and to recycle 65 % of all municipal bio-waste generated (EEA, 2022).

Similar to Norway and Sweden, **Municipal Waste Management Authorities (municipalities) are responsible for organizing the collection and management of household waste**. This includes also similar waste from public administration and service activities. It is the duty of municipalities to set municipal regulations, to organize separation, collection, and recycling efforts, to carry out the treatment of mixed wastes, bio-waste, and other wastes by using other instruments such as PAYT schemes, to define waste fees based on the PAYT schemes, and to provide waste guidance (including waste prevention

²⁹ [FI Early Warning profile FINAL.pdf](#)

³⁰ [European e-Justice Portal - National legislation](#)

³¹ [Microsoft Word - Waste Act final Yhdistetty 494-2022 ja Siirtymäsäännökset puhdas versio 13-12-2022 \(1\).docx](#)

³² [Microsoft Word - VN0037770_LAKI_YM_527_2014_YSL_seurattu_905_2020_EN_FINLEX.docx](#)

³³ [FI Early Warning profile FINAL.pdf](#)

guidance) for households. Moreover, a municipality may transfer some of its duties regarding waste management to a **municipal waste management company owned** by several municipalities in the same area (EEA, 2022). In total, 33 local municipal-owned waste management companies or municipal federations in Finland provide services to over 95 % of the population. Here, the cooperation between municipalities has been an effective way of meet the obligations of waste handling cost-effectively (Finland Ministry of the Environment, 2024)³⁴.

3.4. Nordic waste management – From EU legislation to local policy

Waste management in the Nordic countries of the Barents region can be characterized by many similarities. While Norway, Sweden and Finland share similar challenges of Arctic climatic and geographic conditions that influence waste operations such as transport and storage, they also show comparable legislative structures and waste policies. Here, an essential enabler and trendsetter for Nordic waste management are the respective EU Directives such as the Waste Framework Directive and subsequent goals to e.g., increase reuse and circular approaches, to reduce landfilling, to ensure a more sustainable development of the handling of food waste, or strategies that aim to regulate plastic pollution. The countries' individual publications of national waste management plans about the sector's future goals and key implementation measures are important strategic documents that address the needs of the EU Directives. Moreover, the distribution of responsibilities for implementing and exercising waste policies in the European part of the Barents region correspond to each other: While the national authorities specify obligations based on policy- and strategy papers (inspired by EU policies), it is the duty of the Norwegian, Swedish, and Finnish municipalities to set those into practice, especially when it comes to household waste. The obligation for household waste treatment by municipalities is defined by law in all three countries (Nordic Competition Authorities, 2016)³⁵. A most common organizational structure within the management of household waste is characterized by municipally owned companies that carry out collection, transport, and treatment of household waste, but also in some cases of commercial and hazardous waste.

In conclusion, the legislative structures in Norway, Sweden and Finland can be described as a template where EU policies are implemented in national law by respective government ministries that issue legal documents (acts, decrees, ordinances, regulations etcetera) defining the scope of the rules within waste management. The central enablers for the implementation of national waste policies are eventually the municipalities that more commonly establish inter-municipally owned enterprises that take regional control about municipal solid waste management.

³⁴ [Ympäristöministeriön tunnussivu](#)

³⁵ [Nordic-Report-2016-Waste-Management-Sector.pdf](#)

4. International cooperation on waste management

The pre-dominantly uniform national determinants influencing the operation of the Nordic waste management sector suggest a strong potential for cross-border- and international cooperation between the Nordic countries. This is due to their analogue waste policies inspired by the EU, their means of policy implementation in national legislation and reporting, their ascription of responsibilities to municipalities to carry out waste regulations in practice, but also due to their shared geographic and climatic challenges. This chapter presents a brief overview about additional international determinants that have potential to influence waste management in the Nordic countries in the Barents region fostering the interaction between authorities and essential stakeholders of the Nordic waste markets.

To begin with, the **United Nations 2030 Agenda for Sustainable Development and the corresponding 17 Sustainable Development Goals (UN SDGs)** adopted by the UN General Assembly, offers an instrument for governmental decision-makers, business-leaders, scientists, but also citizens across nations to grasp a better understanding of the required actions in the decade of the 2020s and its challenges (Flick, 2022)³⁶. In 2017, the Arctic Council's Working Groups acknowledged that the UN Agenda 2030 resonates with their work and that their activities contribute towards achieving the SDG targets for advancing the Councils sustainable development agenda (SDWG, 2023)³⁷. There are six specific indicators that address waste highlighted by the SDGs 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production) and 14 (Life below water) (Ghafari, 2022; Parl & Castro de Hallgren & Carrol, 2024³⁸) (figure 1)³⁹.



Figure 2. SDG indicators that address the management of waste

An important collaborator with the UN Environment Program (UNEP) is **GRID-Arendal**, a non-profit environmental communications center based in Arendal, Norway. Originally developed by the Norwegian Environment Ministry, the center has established cooperation projects on e.g., effective waste management in Arctic communities in the Arctic states (GRID-Arendal, 2024)⁴⁰, Arctic waste management and permafrost (GRID-Arendal, 2023)⁴¹, or marine litter in the Arctic (GRID-Arendal, 2025)⁴² among others. These initiatives contribute to capacity-building and inform an international audience as well as sectoral stakeholders about sustainable Arctic waste practices.

³⁶ [NORCE Report 1-2022, Helse og samfunn, Isdegona.pdf](#)

³⁷ [SDWG - Sustainable Development Goals in the Arctic: The Nexus Between Water, Energy, and Food \(WEF\)](#)

³⁸ [Closing the loop on waste | SDG Action](#)

³⁹ [PowerPoint Presentation](#)

⁴⁰ [Waste management in remote areas: Arctic conundrums | GRID-Arendal](#)

⁴¹ [Waste management and permafrost | GRID-Arendal](#)

⁴² [Marine Litter in the Arctic | GRID-Arendal](#)

Furthermore, a strong promoter of strengthening national policies in the Arctic towards improved waste management is the **Arctic Council (AC)**. Within its **Arctic Contaminants Action Program (ACAP)**, one of the institution's major working groups, the **Expert Group on Waste** supports and oversees pilot projects that demonstrate an environmentally sound management of waste in the Arctic. The mandate of the ACAP and Waste Group is to coordinate and facilitate projects that: (1) improve environmentally sound management of hazardous waste, (2) reduce the releases of contaminants from industrial and municipal waste into the environment, and (3) support proper municipal waste management for both solid and liquid waste. The latter also enables communities, including indigenous and remote communities, to develop more sustainable and efficient waste management practices to prevent contamination and marine litter (Seppälä, 2025)⁴³.

Another forum that promotes stability as well as sustainable development in the Barents region and that cooperates with the Arctic Council is the **Barents Euro-Arctic Council**. The current members of the Council are the Nordic countries Norway and Sweden as well as the European Commission (Finland Environment Ministry, 2024)⁴⁴ who strengthen intergovernmental cooperation on topics relevant for the Barents region (Norwegian Environment Agency, 2021)⁴⁵. In 2022, within the Environment Working Group, the former member Finland, Norway, and Sweden established the sub-group **Friends of Sustainable Production and Consumption (FOSPAC)** to work on issues related to sustainable production and consumption in the European part of the Barents region, as well as green transition (Barents Euro-Arctic Council, 2024)⁴⁶. In three projects targeting cooperation on climate strategies as well as coordination on marine litter reduction and the green transition, FOSPAC addresses collaboration regarding battery value chain operations and activities and increasing the circular economy in the European Barents region, also with a special focus on mining waste (Barents Euro-Arctic Council, 2024).

In addition, an important driver for innovation cooperation and sustainability in the waste management sector is the **Nordic Council of Ministers**, representing the official body for inter-governmental co-operation in the Nordic Region. Divided into 12 different expert ministries the Council seeks common solutions wherever and whenever the countries can achieve more together than by working on their own (Nordic Cooperation, 2024)⁴⁷. One of the 12 institutions that foster the Nordic cooperation in this regard is **Nordic Innovation**. One of the three main innovation missions that Nordic Innovation defines in their strategic "Nordic Vision" towards 2030 is a **Waste-free Nordic region**. As a leading region within circular and sustainable business models, Nordic Innovation has recently funded more than 18 projects strengthening circular business models (Nordic Innovation, 2014)⁴⁸. In 2019, the Nordic Council also established the **Nordic Working Group for Circular Economy**, a merger of the previous Nordic Waste Group (NAG) and the Working Group for Sustainable Consumption and Production (HKP). The working group prioritizes resource-efficient cycles, cutting resource consumption and volumes of waste, empowering the use of waste as a resource, building related policy instruments, and implementing plastics into a circular economy. In this context, promotion, EU policy recommendations, workshops, and knowledge-creation are initiated addressing expert areas such as e.g., cross-border shipments of waste, regional construction sectors, food waste, cutting plastic and plastic recycling, and tire production (Nordic Cooperation, 2024)⁴⁹.

⁴³ [Waste | Arctic Contaminants Action Program](#)

⁴⁴ [Cooperation in the Arctic and Barents Region - Ministry of the Environment](#)

⁴⁵ [Environmental cooperation in the Arctic - Norwegian Environment Agency](#)

⁴⁶ [Friends of Sustainable Production and... - Barents Euro-Arctic Council](#)

⁴⁷ [The Nordic Council of Ministers | Nordic cooperation](#)

⁴⁸ [Circular Business Models | Nordic Innovation](#)

⁴⁹ [The Nordic Working Group for Circular Economy \(NCE\) | Nordic cooperation](#)

As an example for cross-border initiatives on waste management between Norway, Sweden, and Finland, the EU co-funded **Interreg Aurora Programme 2021-2027** aims to strengthen the green transition, competitiveness, sustainability, and attractiveness in the three Nordic countries (Interreg Aurora, 2021)⁵⁰. Next to initiatives about circular approaches addressing e.g., wood supply, construction, or battery use, the **Nordic Waste Management Vision project (NOWA)** under the Interreg Aurora programme, focuses on sustainable waste management practices through collaboration among waste management stakeholders in the north of Norway, Sweden, and Finland. The NOWA project develops pre-conditions for **Arctic Waste Forum Platform** to foster the building of institutional collaboration and synergy solutions in the waste management industry (Arctic Waste Forum, 2024)⁵¹.

Next to cross-border and international cooperation initiatives, an important driver for Arctic waste management in the Nordic region is also the extensive amount of **regional collaboration initiatives** in the case-countries. For example, Norway established the **North Norwegian Waste Cluster** which is a collaborative cluster of 9 municipal waste operators that together cover waste management in the regions Finnmark, Troms and Nordland (figure 3). The cluster involves the members partaking in ongoing dialogues with regional waste management networks and relevant organizations and has formed working groups that focus on textiles, fire prevention, and sustainability reporting, as well as networking groups within the fields of innovation, development, and communication (RECOWAMA, 2024)⁵². As a flagship for cooperation within the cluster, the **Rå Biopark initiative** in Finnsnes in the Senja Municipality will implement a biogas plant to be located 145 km southwest of the city of Tromsø. It will utilize organic waste from the area to produce biogas, but also biochar from bio-residues (Terås & Nilsen, 2024)⁵³.

Efforts for regional cooperation can also be found in other Nordic countries. For example, the region of North Karelia, Finland, developed and implemented a Circular Economy Roadmap in 2018 under the framework of the **CIRCWASTE project**. Here, the objective is to improve material and energy efficiency and natural resource use, to incorporate circular strategies into industrial production in key sectors and strengthen industry cooperation in the region, and to bolster new circular business models while further developing technological solutions (Circwaste, 2024; Circle Economy, 2021)⁵⁴.

Such regional cooperation clusters have the power to create networks with waste industry stakeholders and municipal authorities. With steady growth of the networks, these initiatives can have a potential to function as regional coordinative templates that also might become stronger entities for cross-border collaboration. For example, the Rå Biopark initiative has been associated with the input of organic waste that is also internationally transported from northern parts of other countries (Rå Biopark, 2024)⁵⁵.

⁵⁰ [Interreg Aurora 21-27](#)

⁵¹ [Introduction - Arctic Waste Forum](#)

⁵² [ReCoWaMa policy brief](#)

⁵³ [The role of collaboration in the renewal of Arctic waste management](#)

⁵⁴ [North Karelia's circular economy roadmap | Knowledge Hub | Circle Economy Foundation](#)

⁵⁵ [Avfallsbransjens månelanding — Rå Biopark](#)



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Figure 3. Northern Norway Waste Management Cluster (Source: RECOWAMA, 2024)⁵⁶

In addition, the WANO project has successfully shown that such regional networks bare a lot of potential for cross-border cooperation between e.g., waste management actors in northern Norway and northern Finland. In 2023, cross-border workshops were organized in Oulu, Finland, with the objective to share experiences in waste management and to explore the possibilities to increase cooperation with focus on sorting of municipal waste, data collection and data handling issues. The WANO workshop was attended by the WANO partners Remiks, Hålogaland Ressursselskap IKS (HRS), and NORCE, and the Oulu-based waste management actors Hauru, Wastebook, Macon, and the PrintoCent cluster IKS (Teräs et al, 2024)⁵⁷.

4.1. Concluding remarks about international cooperation on Arctic waste management

Initiatives for international cooperation within the Nordic waste management industry become more and more important. Today the portfolio of collaboration initiatives reaches from extensive national-regional clusters (e.g. North Norway Waste Cluster), cross-border platforms (e.g., Euro-Arctic Council), inclusive Nordic networks (e.g., Nordic Cooperation), inclusive Arctic fora (e.g., Arctic Council), EU initiatives (e.g., Interreg) up to inclusive global approaches (e.g., UN). Here, cooperation initiatives that address waste management on global scales such as UN programs, can be mostly interpreted as broad trendsetters for waste management policymaking on national levels. To link global policies to national and potentially regional waste management policies, the role of third intermediate actors such as non-profit organisations can support to convey both perspectives to each other. E.g., GRID Arendal as a promoter and funder of Norwegian projects, also addressing different types of waste management, is simultaneously a collaborator of UNEP.

On the other hand, EU initiatives can have a stronger impact on actual waste management practises. Official Directives for EU and EFTA countries presuppose a rooting of associated needs in national legislations. To incorporate also special local needs of Arctic communities

⁵⁶ [ReCoWaMa policy brief](#)

⁵⁷ [WANO POLICY BRIEF](#)

and operators, EU funded initiatives such as Interreg Aurora are important to convey such needs into EU waste legislation.

Eventually, over-regional cooperation within Nordic countries as well as cross-border initiatives might have the biggest potential for implementing waste policies and paving a way towards sustainable waste management in practise. Because of the high responsibility of municipalities to concretely follow national legislations (or establishing rules for waste operators themselves accordingly), but also their maintenance of numerous ownerships of local and over-local waste management enterprises, makes them strongly attached to essential waste management stakeholders including experts and customers. Therefore, cooperation on a regional basis provides powerful networks including local authorities, institutions as well as industrial enablers of waste management practises. This highlights the importance of regional collaborations such as the North Norway Waste Cluster which enables synergies between waste industries and local authorities. As such networks have still the potential to grow and further develop markets for different kinds of waste (e.g., Rå Biopark established a market for organic waste), they are also promising candidates for future cross-border collaboration.

While especially cross-border and regional cooperation programs target specifically the needs and challenges of municipal waste management as well as synergies and technology transfer within extended networks, all described initiatives in this report aim to move towards a circular economy. Using waste as a resource and reusing approaches are thematized in most of the described cooperation programs. In this regard, the addressing of plastic pollution receives extra attention, especially when it comes to global cooperation initiatives.

