

Supervision to combat waste crime

A study of the supervision systems and working
methods of the Nordic countries



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About the report

The report *"Supervision to combat waste crime – A study of the Nordic countries' supervision systems and working methods"* has been conducted by Ensucon AB commissioned by the Swedish Environmental Protection Agency. The study, initiated in February 2024, has focused on understanding the supervisory systems of Nordic countries and their efforts in combating illegal waste management. It is based on four interconnected parts: a literature review, interviews, a workshop, and a final report. The interviews and the workshop were conducted with representatives from Nordic countries.

The purpose of the study is to showcase good practices, promote cooperation, build knowledge, and facilitate exchanges of experiences, thereby contributing to strengthening the Nordic countries' ability to conduct effective and appropriate work against waste crime.

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Contents

Supervision to combat waste crime	2
Summary	5
Sammanfattning	9
1. Introduction	13
1.1 Purpose and objectives	13
1.2 Delimitations	14
1.3 Legal framework	14
2. Methodology	16
3. Waste crime in the Nordic countries	20
3.1 Examples from the Nordic countries	20
3.2 Comparison of different waste crimes	23
4. Supervisory systems	25
4.1 Denmark	25
4.2 Faroe Islands	29
4.3 Finland	33
4.4 Iceland	38
4.5 Norway	41
4.6 Sweden	45
4.7 Comparison of structure	49
5. Analysis of main themes	53
5.1 Resources and financing of supervision	53
5.2 Planning of supervision	56
5.3 Method and technology in supervision	62

5.4 Cooperation with other authorities	68
5.5 The burden of proof	74
5.6 Consequences of violation	78
5.7 The greatest challenges for supervision of waste management	81
6. Conclusions	89
6.1 Waste crime in the Nordic countries	89
6.2 Supervisory systems	89
6.3 Resources and financing of supervision	89
6.4 Planning of supervision	90
6.5 Method and technology in supervision	90
6.6 Cooperation with other authorities	90
6.7 The burden of proof	91
6.8 Consequences of violation	91
6.9 The greatest challenges	92
6.10 Good examples	92
6.11 Areas of continuous Nordic cooperation	94
References	96
Appendices	98
Appendix A	98
Appendix B	98
About this publication	99

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Summary

Introduction and methodology

The rapid expansion of global waste production, driven by urbanization, industrial growth, and consumption, has increased the vulnerabilities of waste management systems. Waste crime, involving illegal disposal or handling of waste, poses risks to the environment and public health. Effective supervision is crucial for overseeing waste management processes.

The Nordic Council of Ministers is financing this comparative study on supervision mechanisms and illegal waste management in the Nordic countries. The purpose of the study is to showcase good practices, promote cooperation, build knowledge, and facilitate exchanges of experiences, thereby contributing to strengthening the Nordic countries' ability to conduct effective and appropriate work against waste crime. The study, initiated in February 2024, focused on understanding the supervisory systems of the Nordic countries and their efforts in combating illegal waste management. It comprised four interconnected parts: a literature review, interviews, a workshop, and a final report. The findings of the study are compared and analyzed in three different chapters: waste crimes, supervisory authorities, and main themes.

Analysis of findings

Waste crime

Waste crimes across the Nordic countries are generally similar, with some regional differences. For instance, island nations face unique challenges due to more international shipments, demanding greater supervision at harbors. Common problems include missing documentation, incorrect classification, and a lack of necessary permits. Some waste crimes are intentional, while others result from ignorance or lack of knowledge about regulations.

Supervisory authorities

The structure of supervisory authorities varies among the Nordic countries. Most countries have local and national supervision, and some include a regional level. International waste transport regulations are standardized under the Basel Convention, but domestic transport regulations differ, with some countries requiring notifications or permits while others do not. Waste tracking systems also vary significantly between countries.

Main themes

Resources and financing of supervision

Supervision is largely funded through fees, which most interviewees view positively, though there are concerns about whether fees provide enough resources. Time and staffing shortages hinder effective supervision and affect the development of methods and cooperation.

Planning of supervision

In all countries, planned supervision seems to be the most common practice. Planning is generally based on risk assessments, both for the supervision of facilities and for transboundary shipments of waste. However, the implementation of risk assessments may vary for different authorities within a country. Besides planned supervision, supervision may also be reactive.

Methods and technology in supervision

Supervision typically involves administrative checks, visual inspections, and interviews. Transboundary waste inspections tend to include more unannounced inspections, often with customs cooperation. Sampling and after-hours inspections are uncommon.

Cooperation with other authorities

Some countries distinctly divide supervisory responsibilities, while in others, more overlaps and ambiguities exist. Cooperation with customs is common, but time and resource constraints often limit broader cooperation and data sharing between authorities.

The burden of proof

Supervision is generally trust-based, relying on data provided by operators. This is seen as both beneficial and problematic. Some believe more direct control and verification are needed. When violations are reported to police, the burden of proof shifts from the operator to the prosecutor.

Consequences of violations

Instructions and warnings to operators are usually the first step after a confirmed violation. This is also seen as an important part of supervision for many—a way of “nudging” operators in the right direction. Other actions or consequences of violations can be economic sanctions, such as penalty fees or fines. There are significant differences between the countries regarding how often the police are contacted in case of a violation.

The greatest challenges for supervision of waste management

The greatest challenges identified by the interviewees are:

- availability of data and tracking of waste,
- unclear regulations and/or unclear division of responsibilities,
- difficulties targeting companies that engage in deliberate criminal activity,
- scarce resources, and
- the lack of international cooperation and communication.

Good examples and areas of continuous Nordic cooperation

Some cases of good examples that have been raised during the study:

- Denmark – Automated risk assessment system: Denmark is implementing an automated system for waste supervision planning to streamline processes and equalize conditions across municipalities.
- Sweden – Continuous financing for supervision of transboundary shipments of waste: Sweden's financing system allows more proactive oversight.
- Norway – Supervisory campaigns: Norway conducts thematic supervisory campaigns, effectively engaging the waste industry to improve practices through collaborative efforts.
- Finland – Collaboration between municipalities and police: sharing information and coordinating inspections on environmental crime.
- International cooperation: Existing international structures facilitate networking and cooperation among waste management supervisory staff.

As the aim of the study partly was to foster continued cooperation between the Nordic countries, the results culminated in two common challenges that could be effectively addressed through collaborative efforts at the Nordic level. Table 1 summarizes the challenges and proposes actions for addressing these challenges within the Nordic cooperation.

Table 1. Summary of challenges and areas of continuous Nordic cooperation.

Challenges	Areas of continuous Nordic cooperation
<p>Availability of data and tracking of waste</p> <p>Improving waste tracking and data-sharing capabilities between authorities can facilitate better coordination and informed decision-making, ultimately strengthening oversight and accountability in waste management practices</p>	<p>Develop methods and systems for:</p> <ul style="list-style-type: none"> • Increased waste tracking • Better availability for sharing data between authorities
<p>Lack of international cooperation and communication</p> <p>Improving international cooperation and communication among Nordic countries is essential for effectively addressing waste crime, as it allows for coordinated responses, better resource use, and targeted strategies for local and regional challenges.</p>	<p>Utilize national authorities and the existing international networks as a catalyst for:</p> <ul style="list-style-type: none"> • Developing forms for international cooperation on combating waste crime • Developing platforms and systems for international communication regarding specific cases on a regional and local level

Sammanfattning

Introduktion och metod

Den snabba ökningen av den globala avfallsproduktionen, som drivs av urbanisering, industriell tillväxt och konsumtion, har ökat sårbarheten i avfallshanteringssystemen. Avfallsbrott, som involverar olaglig hantering eller bortskaffande av avfall, utgör risker för både hälsa och miljön. Effektiv tillsyn är avgörande för att övervaka avfallshanteringsprocesserna.

Denna jämförande studie om tillsynsmekanismer och olaglig avfallshantering i de nordiska länderna finansieras av Nordiska ministerrådet. Syftet med studien är att lyfta fram goda exempel, främja samarbete, bygga kunskap samt underlätta erfarenhetsutbyte, samt att genom detta bidra till att stärka de nordiska ländernas förmåga att bedriva effektivt och adekvat arbete mot avfallsbrottslighet. Studien som initierades i februari 2024 fokuserade på att förstå de nordiska ländernas tillsynssystem och deras arbete i kampen mot olaglig avfallshantering. Den omfattade fyra sammankopplade delar: en litteraturöversikt, intervjuer, en workshop och en slutrapport. Studiens resultat jämförs och analyseras i tre olika rapportavsnitt: avfallsbrott, tillsynsmyndigheter och huvudsakliga teman.

Analys av resultat

Avfallsbrott

Avfallsbrottsligheten i de nordiska länderna är i stort sett likartad, med vissa regionala skillnader. Till exempel står ö-nationer inför särskilda utmaningar kopplat till mer internationella avfallstransporter, vilket kräver ökad tillsyn vid hamnar. Vanliga regelbrott är saknad dokumentation, felaktig klassificering och brist på nödvändiga tillstånd. Vissa avfallsbrott är avsiktliga, medan andra beror på okunskap eller bristande kännedom om lagkrav och regler.

Tillsynsmyndigheter

Strukturen för tillsynssystemen varierar mellan de nordiska länderna. De flesta länder har både lokal och nationell tillsyn, och vissa har även en regional tillsynsnivå. Regelverk för internationella avfallstransporter är standardiserade utifrån Baselkonventionen, medan regelverket för nationella transporter skiljer sig åt; vissa länder kräver anmälan eller tillstånd, medan andra inte gör det. Spårningssystem för avfall varierar mellan länderna.

Huvudsakliga teman

Resurser och finansiering av tillsyn

Tillsyn finansieras i stor utsträckning genom avgifter, vilket de flesta intervjupersoner ser positivt på även om det finns synpunkter kring om avgifterna ger tillräckliga resurser. Brist på tid och personal hindrar effektiv tillsyn och påverkar utvecklingen av metoder och samarbete.

Planering av tillsyn

I alla länder verkar planerad tillsyn vara det vanligaste tillvägagångssättet. Planeringen baseras i allmänhet på riskbedömningar, både för tillsyn av anläggningar och för gränsöverskridande avfallstransporter. Implementeringen av riskbedömningar kan dock variera mellan olika myndigheter inom ett land. Förutom planerad tillsyn kan även reaktiv tillsyn förekomma.

Metoder och teknik

Tillsyn innefattar vanligtvis administrativa kontroller, visuella inspektioner och intervjuer. Vid gränsöverskridande avfallsinspektioner genomförs en större andel oanmälda kontroller, ofta i samarbete med tullen, men provtagning och inspektioner utanför arbetstid är ovanliga.

Samarbete med andra myndigheter

Vissa länder har en tydlig uppdelning av tillsynsansvaret mellan myndigheter, medan mer överlapp och otydligheter förekommer i andra. Samarbete med tullen är vanligt, men tids- och resursbrist begränsar ofta bredare samarbete och informationsdelning mellan myndigheter.

Bevisbörda

Tillsynen är generellt sett tillitsbaserad, med data som tillhandahålls av verksamheterna. Detta ses både som en fördel och ett problem. Vissa intervjupersoner anser att mer direkt kontroll och verifiering behövs. När överträdelser rapporteras till polisen övergår bevisbördan från verksamheten till åklagaren.

Konsekvenser av överträdelser

Instruktioner och varningar till verksamheter är vanligtvis det första steget efter en bekräftad överträdelse. Detta ses även som en viktig del av tillsynen för många – ett sätt att "knuffa" verksamheten i rätt riktning. Andra åtgärder eller konsekvenser av överträdelser kan vara ekonomiska sanktioner, som böter eller avgifter. Det finns stora skillnader mellan länderna när det gäller hur ofta polisen kontaktas vid en överträdelse.

De största utmaningarna för tillsyn av avfallshantering

De största utmaningarna som identifierats av intervjupersonerna är:

- tillgång till data och spårning av avfall,
- otydliga regler och/eller otydlig ansvarsfördelning,
- svårigheter att nå företag som medvetet bedriver kriminell verksamhet,
- begränsade resurser, och
- brist på internationellt samarbete och kommunikation.

Goda exempel och områden för fortsatt nordiskt samarbete

Ett urval av goda exempel som lyfts fram under studien:

- Danmark – Automatiserat riskbedömningssystem: I Danmark implementeras ett automatiserat system för planering av avfallstillsyn för att effektivisera processer och skapa likvärdiga villkor över kommunerna.
- Sverige – Kontinuerlig finansiering för tillsyn av gränsöverskridande avfallstransporter: Finansieringssystemet möjliggör mer proaktiv tillsyn.
- Norge – Tillsynskampanjer: I Norge genomförs tematiska tillsynskampanjer, där avfallsindustrin effektivt engageras för att förbättra praxis genom samarbete.
- Finland – Samarbete mellan kommuner och polis: Delar information och samordnar inspektioner kring miljöbrott.
- Internationellt samarbete: Befintliga internationella strukturer underlättar nätverkande och samarbete mellan tillsynspersonal inom avfallshantering.

Eftersom ett mål med studien var att främja fortsatt samarbete mellan de nordiska länderna, resulterade analysen i två gemensamma utmaningar som kan hanteras genom samarbetsinsatser på nordisk nivå. Tabell 1 sammanfattar utmaningar och föreslår åtgärder för att hantera dessa utmaningar inom det nordiska samarbetet.

Tabell 1. Sammanfattning av utmaningar och områden för fortsatt nordiskt samarbete.

Utmaningar	Områden för fortsatt nordiskt samarbete
Tillgänglighet av data och spårning av avfall Förbättrad spårning av avfall och datautbyte mellan myndigheter kan underlätta bättre samordning och informerat beslutsfattande, vilket i sin tur stärker tillsyn och ansvarsutkrävandet i avfallshanteringen.	Utveckla metoder och system för: <ul style="list-style-type: none">• Ökad spårning av avfall• Utveckla metoder och system för bättre tillgänglighet för delning av data mellan myndigheter
Brist på internationellt samarbete och kommunikation Förbättrat internationellt samarbete och kommunikation mellan nordiska länder är nödvändigt för att effektivt hantera avfallsbrott, eftersom det möjliggör samordnade insatser, bättre resursanvändning och riktade strategier för lokala och regionala utmaningar.	Använd nationella myndigheter och befintliga internationella nätverk som en katalysator för: <ul style="list-style-type: none">• Utveckla tillvägagångssätt för internationellt samarbete för att bekämpa avfallsbrott• Utveckla plattformar och system för internationell kommunikation rörande specifika fall på regional och lokal nivå

1. Introduction

The rapid expansion of global waste production, driven by urbanization, industrial growth, and consumption, has increased the vulnerabilities of waste management systems. Criminal entities exploit regulatory loopholes, inadequate enforcement mechanisms, and the challenges associated with waste tracking and auditing to engage in illegal activities. Generally, the profit potential from waste crime is substantial, while few offenses are detected, and the penalties are relatively low. This makes illegal waste management a potentially lucrative business for criminal actors. However, waste crimes can also be unintended, because of ignorance or difficulties in complying with the various requirements for companies. This issue is not only undermining legal waste management efforts but is also threatening the environment, public health, and economic stability (United Nations Environment Programme, 2024).

Supervision in waste management is an essential component of environmental governance, designed to oversee and regulate the complex processes involved in handling, transportation, treatment, and disposal of waste. The core objective of waste management supervision is to ensure compliance with legal requirements that dictate safe and sustainable waste practices. This entails monitoring the entire waste lifecycle – from collection, transportation, and treatment to final disposal – to ensure that each phase lives up to established environmental standards and legal requirements.

Supervision can involve a range of activities including document control, waste tracking, sampling, and inspections of sites and transports. Supervision plays a crucial role in educating and engaging stakeholders, including industries, municipalities, and the public, on the importance of responsible waste management practices. Therefore, the aim of supervision is both to ensure legal compliance and to encourage awareness of its own operations.

In 2024, Sweden holds the chairmanship of the Nordic Council of Ministers. This comparative study on how supervision can prevent and combat waste crime in Nordic countries is one of the priorities of the Swedish chairmanship and is financed by the Nordic Council of Ministers.

1.1 Purpose and objectives

The purpose of the study is to present good practices, promote cooperation, build knowledge, and facilitate exchanges of experiences, thereby contributing to strengthening the Nordic countries' ability to conduct effective and appropriate

work against waste crime. The results may hopefully also form the basis for continued good cooperation between the Nordic countries in this field.

The targeted audience for the study includes representatives from regulatory and supervisory guidance authorities in each Nordic country. An important goal of the study is to create and strengthen contact interfaces between authorities working on these issues.

1.2 Delimitations

This study specifically focuses on the efforts made by supervisory authorities in combating waste crime. The scope is intentionally confined to the strategies, policies, and practices employed by these regulatory bodies in preventing and addressing waste-related offenses. Therefore, the study does not encompass an analysis of the criminal justice system, such as law enforcement, prosecution, or judicial processes related to waste crimes. The analysis addresses different forms of supervision, such as facility supervision and transboundary shipments of waste, separately in some cases, depending on the relevance. Distinctions between various forms of supervision are highlighted where considered important.

Furthermore, no specific limitations have been imposed on the types of waste or the variety of waste crimes included in this study. By adopting a broad approach, the study aims to provide a comprehensive understanding of how supervisory authorities address a wide range of waste issues. This broad scope allows for an inclusive examination of the challenges and approaches faced by these authorities, highlighting the diverse nature of waste crime and the multifaceted efforts required to combat these crimes effectively.

1.3 Legal framework

Efforts to find and prevent criminal activities in the waste sector are mainly conducted within the national borders. However, several regulatory frameworks within the European Union apply to the EU member states, such as:

- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (the Waste Framework Directive (2008/98/EC),
- Regulation (EC) no 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (the EU Regulation (EC 1013/2006) on Shipments of Waste),
- Directive (EU) 2024/1203 of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law and replacing Directives 2008/99/EC and 2009/123/EC (the Environmental Crime Directive (2024/1203/EU)), and

- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Directive (2010/75/EU) on Industrial Emissions (IED)).

These establish the main legal framework for waste management within the EU and make up the foundation for legislation relating to waste in the member states. The regulations above, except for the Environmental Crime Directive (2024/1203/EU), are also applicable for members of the European Economic Area (EEA).

The regulations define certain concepts within waste management. The Waste Framework Directive (2008/98/EC) defines *waste* as "any substance or object which the holder discards or intends or is required to discard". The Waste Framework Directive (2008/98/EC) also defines *hazardous waste*, which is waste that displays one or more of the hazardous properties as listed in Annex III of the Directive. Hazardous properties are for example explosivity, flammability, toxicity, and ecotoxicity. Waste that does not display any of the properties listed in Annex III is considered *non-hazardous waste*. The Waste Framework Directive (2008/98/EC) requires producers and those who handle hazardous waste on a professional basis to keep records documenting for example the quantity, nature, and origin of the waste. Some countries arrange this documentation and registration in a centralized waste register.

In the EU Regulation (EC 1013/2006) on Shipments of Waste, the concept of *green-listed waste* is defined. Green-listed waste shipments are shipments of non-hazardous wastes to EU/OECD countries and some non-OECD countries. These types of waste shipments can be imported or exported for recovery without prior written notification or consent from the competent authorities (SWEAP, 2020). Other wastes require written notification and consent from the competent authority.

In a wider context, the United Nations Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (from the 22nd of March 1989) (the Basel convention) is a global commitment to regulating hazardous waste movements and promoting environmentally sound waste management practices. The Basel Convention has been signed by 190 Parties.

2. Methodology

The study was initiated in February 2024 and consists of four different but interconnected parts, see Figure 1.



Figure 1. The four main parts of the study; a literature review, interviews, a workshop, and this report.

Initially, a literature review was conducted to gather documentation and to form an overview of the Nordic countries' supervisory systems. The purpose of the review was to gain an initial understanding of different working methods and capabilities to prevent, detect, and combat illegal waste management, and to use this information as a basis for the next step of the study. The results of the literature review are presented in a description and a schematic map for each country's supervisory system, see [Chapter 4](#).

Secondly, interviews were conducted with participants from each country. The interviews were mainly held in April and May 2024, and the interviewees were chosen based on recommendations from the national representatives in the Nordic Waste Group.^[1] In some cases, further referrals were necessary to find a suitable participant for the interview. For each country, 2–3 interviews were conducted, resulting in a total of 14 interviews. Participants from local, regional as well as national level authorities were interviewed – depending on the country and the suggestions from the Nordic Waste Group. At least one person from the national level has been interviewed for each country. The interviewees had different expertise depending on their work positions, see Figure 2 for examples.

1. A group under The Nordic Council and the Nordic Council of Ministers. It is a part of the Nordic Working Group for Circular Economy (NCE) together with the Working Group for Sustainable Consumption and Production (HKP).

Local authorities	<ul style="list-style-type: none"> • For example: municipalities <ul style="list-style-type: none"> • Case officer/manager of: <ul style="list-style-type: none"> • Supervision • Waste management
Regional authorities	<ul style="list-style-type: none"> • For example: County Administrative Boards, Public Health Authorities <ul style="list-style-type: none"> • Health officer • Case officer of: <ul style="list-style-type: none"> • Transboundary waste shipments • Permits and supervision
National authorities	<ul style="list-style-type: none"> • For example: National Environmental Agencies <ul style="list-style-type: none"> • Advisor • Case officer of: <ul style="list-style-type: none"> • Waste management • Transboundary waste shipments • Supervision

Figure 2. Examples of the interviewee's work positions and expertise at different levels.

The interviews followed a predefined list of specific questions designed to gather detailed responses on the countries' supervisory systems and experience on waste crime. The questions can be found in [Appendix A](#). The interviews were recorded, summarized in notes, and then translated where necessary. The recordings have only been used for the sake of the report and were deleted at the end of the study. The participants were offered to answer in their native tongue if they preferred that over English. The exception was the interviews with representatives from Iceland, for whom all interviews were held in English.

In June 2024, a digital workshop was held where participants from all the participating countries were invited, although only participants from Sweden, Finland, Iceland, and the Faroe Islands were able to participate. Therefore, the presentation in the workshop was recorded. The recording was then sent out to all the attendees and the participants who did not have the opportunity to be present.

During the workshop, a summary of results from the literature review and the interviews was presented and followed by discussions on core questions. The participants were divided into smaller groups where an organizer participated to take notes on the discussions. The questions for discussion are attached in [Appendix B](#). Moreover, the workshop featured a presentation of a winning concept from a Hackathon for Cleaner Waste. The presentation was given by Kenneth Pettersson at the Swedish Environmental Protection Agency.

The results from the study are compiled into this comprehensive report, combining data from the literature review, the interviews, and the workshop. The report is divided into six chapters. An overview of the report structure is presented in Figure 3.

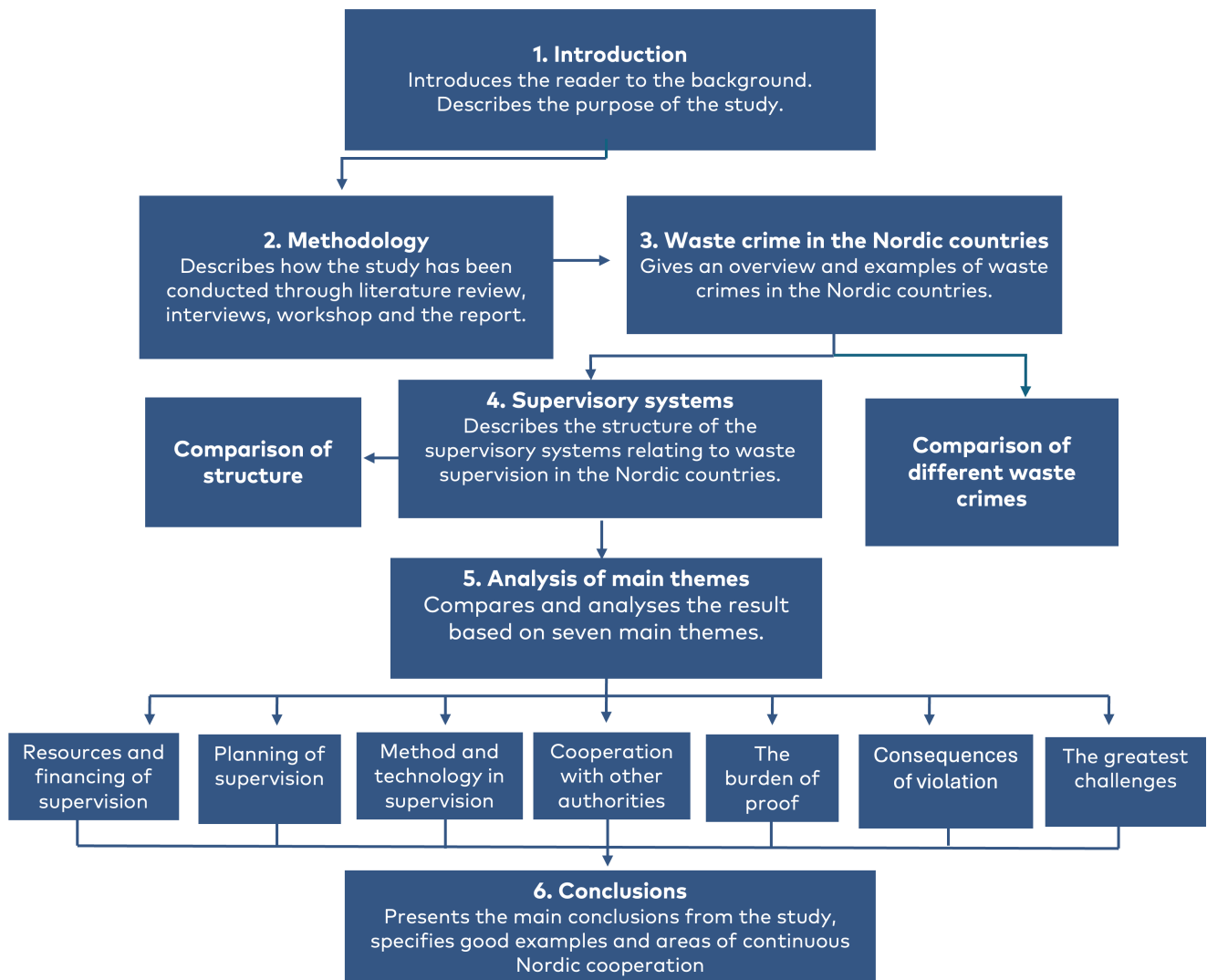


Figure 3. Overview of report structure.

Where no other source is explicitly mentioned, the information derives from the interviews and the workshop discussions. The information from the interviews has been processed in a simple comparative analysis, where the answers from different countries have been compiled in a matrix and compared to identify similarities and differences between the countries. The information from the workshop has mainly been used as a complement to the information derived from the interviews.

Quotations from interviews and workshop discussions are used throughout the report to support the analysis and provide authentic voices from participants. These quotations were selected to illustrate key points and themes, maintaining the anonymity of participants. Note that the quotations are taken from the interview or workshop notes and have in some cases been translated from another language. Therefore, the presented quotations are not always verbatim reproductions of the interviewee's wording, although the aim has been to present the quotations as unaltered as possible.

While this study provides valuable insights into the work against waste crime by supervisory authorities, it is important to note certain limitations in the analysis. The study does not encompass the entirety of the waste management landscape, as it is based primarily on a limited number of interviews and a single workshop. Consequently, the analysis may not capture the full scope of issues and perspectives present in the field. The focus on interviews and workshop discussions means that some aspects of waste crime might not be fully addressed, limiting the width of the analysis.

Despite these limitations, the study aims to offer a meaningful exploration of the subject and contributes to the understanding of strategies employed by supervisory authorities in tackling waste crime.

3. Waste crime in the Nordic countries

This chapter gives an overview of different violations and waste crimes that have been identified during the interviews. At the end of this chapter, a comparison of violations in the Nordic countries is presented; see [Section 3.2](#).

3.1 Examples from the Nordic countries

Crimes and violations relating to waste management can vary significantly, depending on the situation and who the responsible party is. For example, the situation may differ depending on whether it is companies or individuals that are handling the waste.

During this study, the interviewees mentioned a large variation of waste crimes and violations that they have come across in their line of work, see examples in Table 2. A more detailed description of the interview results for the different countries is presented in [Section 3.1.1](#) below.

Table 2. Examples of violations and waste crimes from the interviews.

Crimes and violations	Example
Littering	Illegal littering in public or private places.
Illegal landfills or illegal storing of waste	Waste that is dumped on illegal landfills or illegally stored without proper permit or notification. Operators that offer waste storage but instead dump the waste in illegal locations or landfills.
Wrong or no permit	Operators, waste facilities or transports that require permit or notification, either lack permit/notification or the permit/notification is wrong.
Wrong classification	Waste that has not been classified correctly and sorted wrong. It can also be waste that falsely is being exported as products instead of waste.

Missing or wrong documentation	Missing or wrong documentation for waste during national or cross-border transports or at waste facilities.
Handling of exceeding quantities	Operators handle more waste quantities than what is allowed in their permit or notification.
Illegal reusing of waste for construction	Using waste for backfilling or other constructions. For example, mixing of non-permitted or contaminated waste in reuse projects.
Dilution of waste	Reducing the concentration of waste materials by mixing them with a larger volume of a less harmful substance.

3.1.1 The most common or most difficult violations

During the interviews, the interviewees were asked to reflect on the most common violations in their work. This section presents a summary of their answers for each country. The following questions were asked:

» What violations of waste regulations have you come across in your line of work?

» Overall, in your country, what types of violation/modus operandi do you think are the most common in regard to waste management?

Denmark

For Denmark, an interviewee mentioned that the supervision is somewhat dependent on reports filed by the operators to the national waste data system. Without such reports, operators are difficult to find, which in turn makes it difficult to control permits and the compliance of such. Relating to transboundary shipments of waste, missing or incomplete documentation is a common violation, especially for green-listed waste. Another interviewee said that the most difficult shipments to find are the ones taking place during holidays and weekends and/or transporting unknown cargo. They also have experience with containers that, on paper, are stated as empty, but in fact, contain waste or other cargo. In general, it is difficult to find out about misleading information on the content of containers.

Faroe Islands

The Faroe Islands has a rather different situation compared to other Nordic countries, as the country is much smaller and rather isolated from the rest of Europe. An interviewee mentioned that most violations are smaller and often due to a lack of knowledge rather than outright criminal activities. Violations

mentioned by the interviewees are, for example, oil spills from fish production, illegal dumping or backfilling with waste that should go to landfills, and municipalities burning waste without proper permits.

Finland

Finnish interviewees mentioned seeing an array of different crimes or violations during their careers, ranging from littering and dumping of waste to breaches of permit conditions and wrong classification of waste as green-listed waste or end-of-waste during transboundary shipments. Littering and incomplete documentation are believed to be the most common violations, while the interviewees think that the most difficult criminal operations to find are those whose business idea is to purposely break rules and avoid regulations. This can be the case where all documentation and permits are in order but set up for the sole purpose of covering illegal activities. It can also be very difficult to find and stop shipments going outside Europe where the wrong customs code or documentation has been supplied.

Iceland

Icelandic interviewees mainly brought up violations such as illegal dumping, storage of excessive amounts of waste, either in facilities or on private land, and dumping of hazardous waste in the sewage system. Illegal dumping is seen as particularly difficult for a supervisory authority to handle since they need to gather a great amount of proof about the case – and even if they do, it is unlikely to be met with priority by the police.

Regarding transboundary shipments of waste, an Icelandic interviewee mentioned that it is usually inexperienced exporters that are the cause of violations, such as missing documentation. The interviewee also mentioned difficulties controlling where the waste concerning cars, ships, and other vehicles ends up.

Norway

For transboundary shipments of waste, a Norwegian interviewee mentioned export of waste with the wrong classification as the most common violation. Waste may, for example, instead be sent as a product or with a classification that somehow differs from the actual waste being sent. The interviewees mentioned the breach of permit conditions for facilities, such as emission limits, along with breaches of routines for the facilities as common violations within Norway. Illegal landfills and illegal storage of waste were also mentioned. In general, it is a challenge to make sure that the right type of waste goes where it should and to make sure that waste is handled following applicable permits and/or other regulatory documents. An interviewee specifically mentioned the difficulty with trust-based supervision in cases where there is a plausible violation, but the operator is not truthful in their reporting to the supervisory authority.

Sweden

Interviewees from Sweden mentioned the incorrect reuse of waste for construction purposes as a common violation. For example, only a notification is required to store as much as 10,000 tons of unsorted, non-hazardous construction and demolition waste in one place. An interviewee describes deliberate, organized crime relating to the storage of waste, where operators offer and charge customers for waste management or disposal services without an actual plan for taking care of the waste; it is simply stored in a location for which a notification has been submitted. These operators take advantage of weaknesses in the system for notifications so that they slip "under the radar" while seemingly having the proper documentation. Later, these companies are often declared bankrupt, and the waste is left on the storage site. It can then be difficult to identify who is responsible for clearing the site.

For transboundary shipments of waste, the export of cars and refrigerators, the wrong classification of materials as end-of-waste, and the lack of necessary permits are mentioned as common violations. The most common violations are often due to ignorance or a lack of knowledge rather than intentional crime. However, these violations are time-consuming and obstruct the work to identify actual criminal operations.

3.2 Comparison of different waste crimes

Crimes relating to waste management in the Nordic countries seem to be similar in general, with certain variations; see [Table 3](#). Some variations may depend on the location of the country; for example, the fact that the Faroe Islands and Iceland are islands, which means a lot of shipments abroad and supervision in harbors. An interviewee in Iceland mentions that regarding transboundary waste shipments, it is difficult to control where the waste concerning cars, ships, and other vehicles ends up.

It is common for most interviewees to say that they either suspect illegal activities to happen outside of office hours or that they have no knowledge of whether this happens. Participants from Denmark and Sweden have explicitly mentioned that they find it hard to identify the illegal activities taking place during holidays or nights. Other interviewees have mentioned that they do not know if more illegal activities would be found during nighttime. This raises the question of whether this is an "out of sight, out of mind" issue and if there are hidden numbers of illegal activities happening outside of office hours that could be found if supervision was carried out during holidays and nighttime.

Missing or incomplete documentation, wrong classification, and lack of necessary permits are also mentioned by interviewees from all countries in some way. This may indicate that some hidden numbers of waste crimes are difficult to find today, since the documentation may appear to be right at first sight. As mentioned by participants, illegal dumping and landfills are recurring issues in all Nordic countries, which is mentioned by interviewees from all countries except Denmark.

Besides waste crimes with an actual intention, waste crimes relating to lack of knowledge have been mentioned by interviewees in Sweden, Iceland, and the Faroe Islands, meaning that some operators may unconsciously break the law. This can lead to difficulties in identifying unlawful operations with criminal intentions.

Table 3. Overview of violations and issues relating to waste supervision in the Nordic countries that have been mentioned during the interviews, both for facilities and transboundary shipments of waste (TSW).

Denmark	Faroe Islands	Finland
<ul style="list-style-type: none"> • Missing or incomplete documentation (TSW). • Containers stated as empty but contains waste (TSW), especially difficult to find during holidays (TSW). 	<ul style="list-style-type: none"> • Most violations are due to lack of knowledge. • Oil spills. • Illegal dumping. • Backfilling with waste that should go to landfill. • Municipalities burning waste without proper permits. 	<ul style="list-style-type: none"> • Littering. • Illegal dumping. • Breaches of permit conditions. • Wrong classification of waste, e.g. wrong customs code for TSW. • Incomplete documentation. • Purposely criminal organizations avoiding regulations.
Iceland	Norway	Sweden
<ul style="list-style-type: none"> • Illegal dumping. • Storage of excessive amounts of waste • Dumping of hazardous waste in the sewage system. • Missing documentation (TSW). • Difficult to control where the waste ends up concerning cars, ships and other vehicles (TSW). 	<ul style="list-style-type: none"> • Wrong classification (TSW). • Breaches of permit conditions for facilities. • Illegal landfills. • Illegal storage. • Challenge to make sure that the right type of waste goes where it should. 	<ul style="list-style-type: none"> • Incorrect reuse of waste for construction purposes. • Deliberate, organized crime relating to storage of waste. • Lack of necessary permits (TSW) • Wrong classification (TSW). • Violations due to lack of knowledge take up time.

4. Supervisory systems

This chapter introduces the structure of supervisory systems and divisions of responsibilities relating to waste supervision in the respective countries. The description is based on the literature review and complementary information from the interviews. The description mainly focuses on the responsible supervisory authorities but also mentions other relevant authorities and the responsibilities of the operators. The term "operators" refers to professional actors that manage waste in some way; for example, it could be a facility for disposal of waste, a waste collector, or a company that produces waste as a part of their operation.

4.1 Denmark

Denmark is divided into 98 municipalities and five regions. The regions do not have any responsibilities relating to waste management and supervision. On the national level, there is the Danish Ministry of Environment (*Miljøministeriet*), which is divided into the Department of the ministry and two Agencies (*styrelser*); the Nature Agency, including the Coastal Authority, and the Environmental Protection Agency (EPA) (*Miljøstyrelsen*) (*Miljøministeriet*, n.d.). The EPA is relevant in the area of waste management. Moreover, the Danish Energy Agency (*Energistyrelsen*) and the Customs Agency (*Toldstyrelsen*), which is a part of the Ministry of Taxation, also have a role in the supervision of waste management.

The Environment Protection Act (*Bekendtgørelse af lov om miljøbeskyttelse (LBK nr 1218 af 25/11/2019)*) is the main piece of legislation that governs, for example, supervision and permits. There are also several statutory orders (*bekendtgørelser*) that stipulate regulations applicable to the waste area, such as the Statutory Order on Waste (*Bekendtgørelse om affald (BEK nr 2512 af 10/12/2021)*).

There is a new political agreement to develop, increase, and strengthen the inspections of waste in Denmark. The EPA is currently working on implementing this agreement, and the changes will come into effect in 2025. The agreement and its implementation involve rather significant changes in some areas, for example, in the division of supervisory duties.

4.1.1 Supervisory authorities

This section provides descriptions of the supervisory authorities within the waste management area and their respective responsibilities. The presentation starts with authorities on the national level and ends with the local level. The description mainly focuses on the new organization coming into effect in 2025, but information on the current system is also provided.

In [Section 4.1.4](#), a schematic overview is presented to visualize the different actors involved in the supervision of waste and in what areas they operate, see [Figure 4](#).

Danish Environmental Protection Agency (*Miljøstyrelsen*)

As mentioned above, the EPA is part of the Danish Ministry of Environment. The EPA covers the authority of the Danish environment, nature, clean water and air, green production, etc. For the waste area, the EPA handles permits and supervision of the potentially most polluting companies (around 400 companies) (Miljøstyrelsen, n.d.). The EPA also develops a national waste management plan and manages the waste data system.

The Danish EPA supervises transboundary shipments of waste, which are the import, export, and transit (transfers) of waste. The waste can be transported throughout Denmark and cross borders by country roads, railways, and ports. The Danish EPA's competence applies to matters of transfers to or from Denmark or where Denmark is a transit country. The physical checks are carried out and organized in close cooperation with the police and the Customs Agency (a part of the Ministry of Taxation). In addition to physical checks, the Danish EPA also carries out risk-based checks in collaboration with The Customs Agency. Many waste transports cross the Danish-German border, and therefore the Danish EPA usually carries out more physical checks in Southern Jutland compared to the rest of the country.

Denmark is working on strengthened waste supervision, and a streamlined practice must promote equal conditions of competition between companies across municipal boundaries, with a focus on uniform waste supervision and classification practice. As mentioned above, the EPA is currently working on implementing the new supervisory practices, and the changes will come into effect in 2025. Before the changes, the municipalities are fully responsible for all supervision within their geographical area, except for transboundary shipments of waste. With the new system, the EPA will not only give permits and supervise the potentially most polluting companies, but the EPA will also be responsible for managing the new risk-based selection model for waste supervision and for guidance on the classification of waste.

Municipalities (*kommuner*)

The municipalities are the authorities closest to sources of pollution and are supervisory authorities for all operations and areas within waste management within the municipality's borders. The exceptions are issues that explicitly fall under the responsibility of the EPA (see above). Municipalities also grant permits and handle notifications for applicable operations. Municipalities today have a duty to supervise companies' compliance with the rules in the Statutory Order on Waste and thus also the application of the waste schemes, to ensure that the intentions of the national waste management plan and the municipal waste management plans are complied with.

In the current system, the municipalities are fully responsible for all parts of national waste supervision, except transboundary shipments, as described above. However, the supervision has not been performed the same way in all municipalities, and the conditions for operations in different municipalities have therefore been different. The new supervisory system aims to streamline supervisory practice.

Other authorities

Besides the EPA and the municipalities, the Customs Agency, the police, and the Danish Energy Agency are involved in supervision of waste management. The EPA collaborates with the Customs Agency and the police regarding transboundary shipments of waste. The Energy Agency manages registrations of, for example, waste transporters for national shipments, recycling facilities and municipal facilities, for treatment of waste.

Producer of waste

All companies have a duty to sort their waste and ensure that sorted recyclable waste is not sent for incineration. As such, the producer of waste is responsible for making an initial classification of waste.

4.1.2 Transportation of waste

For transport of waste within the country, there are two categories. The operator can either be a collector or just a carrier. In both cases, they must be registered. Registration is done with the Danish Energy Agency and all rules are governed by the Danish Energy Agency. When a collector collects the waste, it becomes the collector's responsibility to ensure the handling or treatment of the waste. The collector also decides where the waste should go to be processed further, and if the collector has taken over the responsibility for the waste, they must ensure that the recipient has a license to receive it (Energistyrelsen, n.d.).

An operator can also just be a carrier who transports waste to treatment, in which case they have no responsibility for ensuring proper treatment of waste. In this case, the operators also need to be registered, but the carriers have not taken over the responsibility for the waste. If a carrier is used, the waste producer is responsible for ensuring that the recipient is authorized to handle the waste.

The collector must report the volumes, type, and whether the waste is to be recycled in the waste data system managed by the EPA (see below). The recipient must report what they have taken into the waste data system. Waste carriers that only drive between a producer and a recipient do not need to report data.

For international shipments of waste, documentation according to the EU Regulation (EC 1013/2006) on Shipments of Waste is required. This entails notifications according to the EU Regulation (EC 1013/2006) on Shipments of Waste, transportation documents, etc., depending on the waste and the receiving country or the country of origin. Waste that is exported should also be reported to the national waste data system, see below.

4.1.3 National waste register and tracking of waste

Denmark has a relatively extensive waste data register (*Affaldsdatasystemet*). The waste data system helps to track waste from producer to recycling or disposal and provides information on, for example, the type of waste and whether it is to be recycled. The person who collects or receives waste must report to the system. Operations, including, for example, receiving facilities and waste producers, are required to report all their data to the system once per year. A rough estimate of around 800 operators is reporting data to the system. The EPA monitors that the data for the transport of waste from producer to final treatment is reported. Penalties may be imposed if data is not reported in time.

In 2025, Denmark will implement a risk-based selection model for waste supervision with an automated, data-based assessment and selection based on the waste data system. This means that companies are compared, using several indicators, and ranked so that high-risk companies will be selected for supervision more often compared to low-risk companies.

The EPA also manages a register for Digital Environment Administration (*Digital MiljøAdministration* (DMA)). The DMA provides access to information related to environmental permits about several Danish companies and livestock farms, for example, which environmentally authorized activities and facilities the company or livestock farm has. They also have information about who is the environmental authority for the company and when the authority last conducted an environmental inspection. Information about the authorities' environmental inspection and approval efforts is submitted to the Danish EPA via DMA, according to the environmental inspection order. Most data are continuously submitted to the DMA via the authorities' professional systems. DMA contains data on companies with a large pollution potential, i.e., emissions to air, water, and soil, as well as information on waste that has a significant environmental impact.

Information on smaller companies that do not require environmental approval, or a permit may also be found in the DMA, primarily because an environmental inspection has been carried out on this type of company. These companies can, for example, be covered by a branch executive order or are so-called "§ 42 companies" in the Environmental Protection Act.

4.1.4 Schematic overview

The following page shows a schematic overview of the different actors involved in supervision of waste and in what areas they operate, see Figure 4. The colored arrows denote supervision.

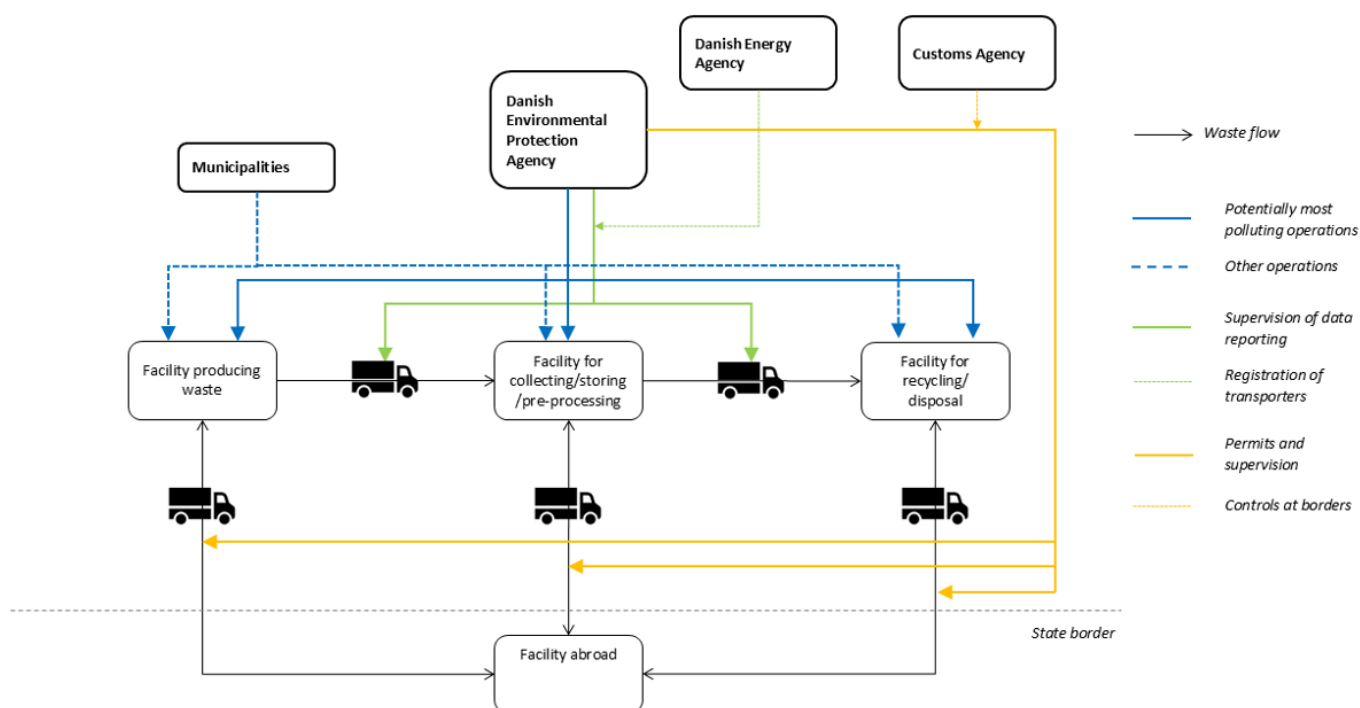


Figure 4. Denmark – schematic overview of the different actors involved in supervision of waste and in what areas they operate.

4.2 Faroe Islands

The Faroe Islands are an autonomous territory within the Kingdom of Denmark. The country consists of 29 municipalities, which are responsible for social services, schools, infrastructure, and environmental management. However, Denmark manages the military, police, justice, currency, and foreign affairs. Concerning environmental governance, the Faroese Government (*Landsstýrið*) implements environmental policies and legislation, but environmental governance primarily falls under the Ministry of Environment, Industry, and Trade, which oversees environmental policies, regulations, and initiatives.

The Environmental Agency (EA) (*Umhvørvisstovan*) is an executive agency under the Ministry that administers and enforces environmental laws. Its roles include monitoring environmental quality, issuing permits, conducting environmental impact assessments, and providing advice and information on environmental issues.

In the Faroe Islands, the Nature Conservation Act (*Løgtingslóg nr. 48 um náttúrufríðing, sum seinast broytt við løgtingslóg nr. 71 frá 22. mai 2023*) protects natural areas, wildlife, and habitats. It provides the legal basis for the designation of nature reserves and other protected areas. The Environmental Protection Act (*Løgtingslóg nr. 134 um umhvørvisvernd, sum seinast broytt við løgtingslóg nr. 168 frá 16. desember 2021*) addresses pollution control, waste management, and environmental impact assessments. Lastly, the Waste Management Act (*Kunngerð nr. 147 um burturkast, sum broytt við kunngerð nr. 90 frá 28. september 2007*) governs the collection, treatment, and disposal of waste.

4.2.1 Supervisory authorities

This section provides descriptions of the supervisory authorities within the waste management area and their respective responsibilities. In [Section 4.2.4](#), a schematic overview is presented to visualize the different actors involved in the supervision of waste and in what areas they operate, see [Figure 5](#).

Government (*Landsstýris*)

Supervision is carried out in accordance with Chapter 7 of the Environmental Protection Act. The ultimate responsibility of supervision lies with the government, but the government is authorized to delegate the supervisory and oversight functions of the municipality or municipal corporation in accordance with this law. If neither the municipality itself nor any municipal association can undertake the supervision of the local law, the regional governor may delegate the supervision and supervision tasks to the respective regional office or offices according to the Waste Management Act.

The Waste Management Act also dictates that the government is responsible for making regulations within the waste management area, including the municipalities' obligation to provide waste collection services. The government may also instruct the Faroese EA to address certain issues, in this case on a case-by-case basis, concerning environmental protection for consideration and decision-making.

Environmental Agency (*Umhvørvisstovun*)

The Faroese EA is responsible for permits regarding particularly polluting activities according to the Environmental Protection Act and the supervision regarding the conditions of permits and approvals. This includes both operations that have environmental permits as well as those that should but do not have permits yet.

Some operations are excluded from the permit requirement; these are marked with a star in the appendix of the Environmental Protection Act. Operations for the storage or incineration of waste, preservation of waste; including landfills, garbage dumps, and special storage for petroleum or chemical waste, reception areas or reception areas for oil wells or chemical waste, including waste incinerators, are examples of operations that require a permit (Umhvørvisstovan, 2024).

The EA also supervises waste management companies, facilities, and equipment owned or operated by the municipal government.

Supervision can be delegated from the municipalities to the EA. If the local government or the local authority association does not fulfill the monitoring tasks, the EA may instruct the local government on how to solve the matter. The Faroese Regional Government may also determine that the monitoring should be carried out by the EA. The EA may also carry out direct supervision if there is an allegation of a serious violation of the regulations.

The EA charges a fee for the permit process and the supervision of these types of operations.

Municipalities (*Kommunustýrið*)

Municipalities are obligated to arrange the collection of household waste from households, businesses, and state institutions. The municipalities should also arrange collection of "especially polluting waste". The municipality sets the rules for the handling and sorting of waste, which all citizens, businesses, and institutions must follow (Lógartænastan, 2022). Practically, the waste handling is operated by two municipal companies: one in the largest municipality, Tórshavn, and one operating in the rest of the country.

Municipalities supervise waste collection services, enforce local waste management regulations, promote recycling efforts, and ensure proper disposal practices within their jurisdictions. The responsibility also includes supervision of littering. The supervisory tasks of the municipality can be delegated to the municipal corporation (after notifying the EA) or to the EA after notifying the government (Umhvørvisstovan, 2024).

According to the Waste Management Act, the municipal government may oblige companies and institutions to provide all necessary information about the waste they produce, as well as oblige them to take samples of the collected waste and to oversee the environmental impact of the waste.

Incineration of waste normally requires an environmental permit. However, some burning may be granted in a waste disposal agreement, if it does not cause harm to the neighborhood. The municipality can interrupt incineration that causes harm and direct the waste to the municipal waste reception center.

Other authorities

In the Faroe Islands, the Customs (*Tullur Føroya*) are responsible for border controls, including oversight of imports and exports, which may include waste materials. The Faroe Islands Police (*Løgreglan*) enforces laws and regulations, including those related to environmental crimes such as illegal dumping and waste trafficking.

Producer of waste

Waste producers are responsible for sorting their waste into appropriate categories according to municipal guidelines.

4.2.2 Transportation of waste

No specific permits are required for domestic transport of waste, nor is any supervision applicable. When it comes to international transport, the Faroe Islands are a party of the Basel Convention.

The Faroese EA is responsible for the supervision of international waste transports. Any company or organization intending to dispose of, or export hazardous waste, must notify the EA at least ten weeks in advance. Also, operators who intend to export non-hazardous waste should notify the EA. The EA sends the notification documents to the relevant authorities in the receiving country and possible transit countries.

4.2.3 National waste register and tracking of waste

No information on a national waste register in the Faroe Islands has been found in the document analysis. However, during the interviews, it was clarified that the two waste management companies must register statistics for the waste they have collected. The statistics are reported in separate systems, but there have been discussions about creating a shared platform for waste statistics.

4.2.4 Schematic overview

The following page shows a schematic overview of the different actors involved in the supervision of waste and in what areas they operate, see Figure 5. The colored arrows denote supervision.

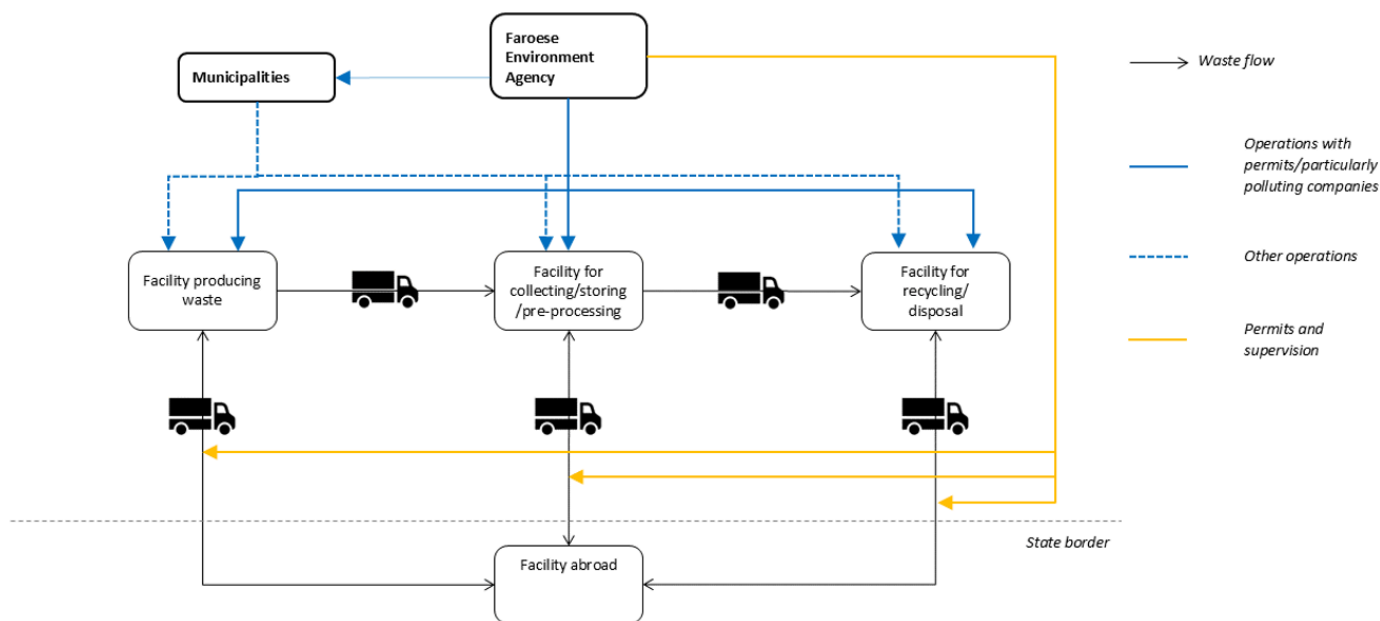


Figure 5. Faroe Islands – schematic overview of the different actors involved in supervision of waste and in what areas they operate.

4.3 Finland

Finland has 309 municipalities (*kunta*) and 19 regions (*maakunta*). Finland also has 15 Centres for Economic Development, Transport, and the Environment (*ELY-keskus*), which are responsible for promoting well-being and sustainable development as well as curbing climate change on a regional level. These are also responsible permit and supervisory duties under the Environmental Protection Act, Water Act, and Waste Act (ELY-keskus, 2023). The ELY Centres essentially correspond to the regions in their geographical extent (ELY Centres, 2023). There are also six Regional State Administrative Agencies (RSAA) (*Aluehallintovirastot*), which are the regional representatives of several national ministries. The RSAA for the island of Åland is the State Department of Åland (Regional State Administrative Agency, n.d.). On a national level, the Ministry of the Environment and the Finnish Environment Institute (*SYKE*) are relevant in the area of waste management. Supervision of waste management is mainly performed at the local and regional levels. However, supervision of transboundary shipments is performed by a national entity (SYKE).

In Finland, the Waste Act (*Jätelaki (646/2011)*) and the Environmental Protection Act (*Ympäristönsuojelulaki (527/2014)*) regulate waste management and supervision, along with some more detailed regulations such as the Regulation on Waste (*Valtioneuvoston asetus jätteistä (978/2021)*).

4.3.1 Supervisory authorities

This section provides descriptions of the supervisory authorities within the waste management area and their respective responsibilities. In [Section 4.3.4](#), a schematic overview is presented to visualize the different actors involved in the supervision of waste and in what areas they operate, see [Figure 6](#).

Finnish Environment Institute (SYKE)

SYKE is a research institute governed by the Ministry of the Environment and the Ministry of Agriculture and Forestry. In addition to the research, SYKE is responsible for some authority services. According to the Waste Act, SYKE is the competent authority for the supervision of international shipments of waste (according to the EU Regulation (EC 1013/2006) on Shipments of Waste). This includes processing waste shipment permits and making decisions on these matters, as well as supervision of waste shipments and inspections in cooperation with the customs, police, and regional authorities. SYKE also provides training and counseling relating to international waste shipments and acts as an EU contact person for waste shipments (Ympäristö.fi, 2024).

Regional State Administrative Agencies (*Aluehallintovirastot*)

Permits are required for professional or institutional waste management according to Appendix 1 of the Finnish Environmental Protection Act. The RSAA manages permit applications, for example, when there is a potentially significant environmental impact, if the nature of the operation motivates management by the national environmental authority, or if the operation also requires a permit according to the third chapter of the Water Act. The RSAA is also responsible for issuing permits for operations that span the areas of multiple environmental protection authorities or if it is for military purposes.

Centre for Economic Development, Transport and the Environment (*ELY-keskus*)

The ELY Centres, together with the municipal environmental protection units, are the principal supervisory authorities according to the Waste Act. The ELY Centers are responsible for the supervision and monitoring of operations that keep, manage, or receive waste and have an environmental permit issued by a RSAA (see above).

The ELY Centres are also responsible for the supervision of transporters of waste within Finland. Processing of notifications and supervision relating to the use of waste for construction purposes is the responsibility of ELY Centres if certain

conditions are met. That is, if the amounts of waste are large but the waste is of certain, accepted materials and is used for approved purposes according to the Regulation on the recovery of certain wastes in civil engineering works (*Valtioneuvoston asetus eräiden jätteiden hyödyntämisestä maarakentamisessa (843/2017)*) (ELY-keskus, 2024a). Otherwise, an environmental permit from the RSAA is required.

The ELY Centres are responsible for leading and promoting the performance of the tasks listed in the Waste Act and related regulations. Certain ELY Centres have additional responsibilities relating to waste management and supervision. Together with Customs, the ELY Centre of Pirkanmaa is responsible for supervising trading with products included in the producer responsibility. The ELY Centre of Southeastern Finland is responsible for approving and entering international waste transporters and brokers into the waste management register.

Municipalities (*Kunnat*)

The municipal environmental protection authority is responsible for the supervision of operations that possess or receive waste and that do not fall under the ELY Centres area of responsibility (see above). As a part of their supervision of operations, the municipalities also supervise transports of waste relating to that operation, although supervision and notifications for transportation of waste are generally the responsibility of the ELY Centres. Municipalities are also responsible for the processing of notifications and for supervision relating to the use of waste for construction purposes for smaller amounts of waste (Kouvolan kaupunki, 2024).

The municipal authority processes any permit applications and notifications that are not explicitly the responsibility of the RSAA according to the Governmental Regulation on Environmental Protection (*Valtioneuvoston asetus ympäristönsuojelusta (713/2014)*).

The municipalities are required to give a yearly report to the ELY Center of Pirkanmaa regarding the costs of cleaning up litter, to be eligible for reimbursement from the ELY Centre. The costs are financed by the producing operations according to the Waste Act (ELY-keskus, 2024b).

Other authorities

Aside from the authorities mentioned above, the police, Customs (*Tulli*), and Border Guard (*Rajavartiolaitos*) are also involved in the monitoring of waste management. For example, SYKE cooperates with Customs in the monitoring of transboundary shipments of waste. Customs may do a preliminary screening and check that a carrier has the necessary permits and documentation, and then contact SYKE if an illegal waste transfer is suspected.

Producer of waste

Operators are required to ensure appropriate documentation and permits for their facilities, follow up on their operations and permit compliance, report to monitoring authorities, and register the required information. Operations where more than 100 tons of waste, or any amount of hazardous waste or POP-waste,^[2] is produced every year is obliged to keep records regarding waste according to the Waste Act and the Regulation on Waste. Records must also be kept in operations that require environmental permits, operations that professionally collect waste, operations for transportation and brokering of waste, etc.

4.3.2 Transportation of waste

In Finland, all organizations and operators that professionally collect, transport, or buy and sell waste (waste brokers) are required to register as commercial transporters in the waste register (see below). This includes foreign transporters. An application should generally be sent to the regional ELY Centre but for some operations, a notification can be made to the municipal environment protection official. For certain types of waste (hazardous waste, POP-waste, etc.), a transporter also needs to have additional documentation stating the origin and the end destination of the transport. The national waste transporters are mainly supervised by the ELY Centres. However, the municipalities also perform "indirect" monitoring of transports as a part of their supervision of various operators and facilities for waste management.

For international shipments of waste, documentation according to the EU Regulation (EC 1013/2006) on Shipments of Waste is required. This entails a waste transfer permit or a green waste transfer document, depending on the waste and the receiving country or the country of origin. The transporter also needs a registration in the Finnish waste management register mentioned above.

4.3.3 National waste register and tracking of waste

SYKE manages a waste management information system (*Jätehuoltokompassi*). The service combines several data registers, including the Finnish waste management register, which contains information on all approved and registered waste transporters and brokers. The system is electronic and is accessed through a website. For a registration to be approved, the operator is required to have all necessary permits. The system can be used by supervisory authorities, operators, or the public to check whether an operator is an approved transporter (SYKE, n.d. (a)).

2. POP-waste is waste containing Persistent Organic Pollutants (POP) (European Commission, 2019).

Together with the Ministry of the Environment, SYKE also manages an electronic register for waste transfer documentation – the SIIRTO register (SYKE, n.d. (b)). Transfer documents are required for, for example, hazardous waste, POP-waste, septic tank sludge, construction and demolition waste, and contaminated soil. Correct documentation allows tracking of the origin of the waste. Transfer documents should be prepared by the waste producer, and the transporter is required to acknowledge the document and carry it during the transfer. If waste is collected from a household, the carrier is responsible for preparing the transfer documents instead (SYKE, 2024).

4.3.4 Schematic overview

The following page shows a schematic overview of the different actors involved in the supervision of waste and in what areas they operate, see Figure 6. The colored arrows denote supervision.

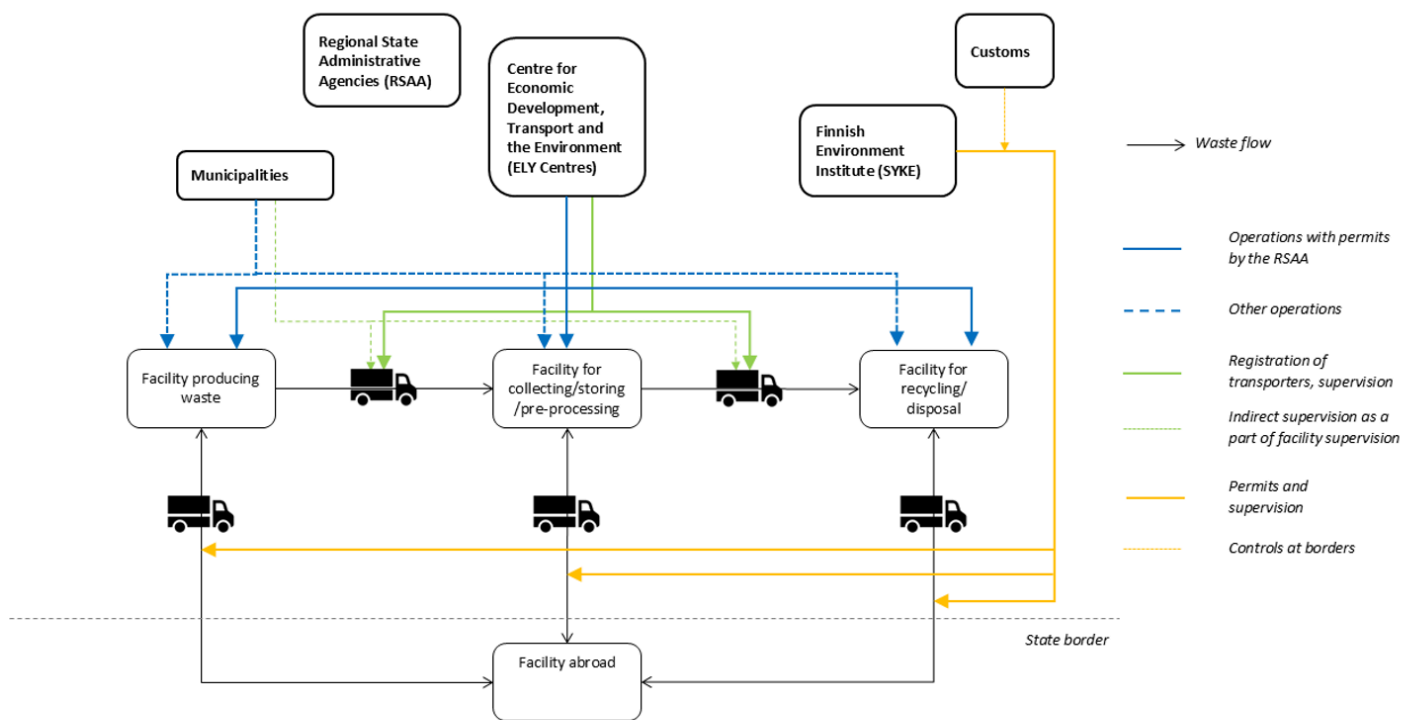


Figure 6. Finland - schematic overview of the different actors involved in supervision of waste and in what areas they operate.

4.4 Iceland

Iceland has 64 municipalities and is divided into 8 regions. On a national level, the Environment Agency of Iceland (EAI) (*Umhverfisstofnun*) operates under the direction of the Ministry for the Environment and Natural Resources. They are responsible for supervision of all permit holders within waste management, except waste collection sites, unless the latter is located within a site under the supervision of the EAI. Iceland also has nine Public Health Authorities (*Heilbrigðiseftirlit*) that are responsible for supervision of waste collection sites as well as general supervision in waste management that is not covered by permits. Each municipality has its own elected council, which is responsible for local matters. The municipalities (*Sveitarfélög*) are also responsible for the waste collection system but not for any supervision.

There are two main laws in Iceland regarding supervision, waste, and environment: the Waste Management Act (***Lög um meðhöndlun úrgangs nr. 55/2003***), and the Act on Hygiene and Pollution Prevention (*Lög um hollustuhætti og mengunarvarnir nr. 7/1998*). These acts are implementations of the Waste Framework Directive (2008/98/EC), and Directive (2010/75/EU) on Industrial Emissions (IED), respectively. Although Iceland is not a member of the EU, they are a part of the European Economic Area Agreement (EEA) which requires them to adopt some EU regulations, including the Waste Framework Directive (2008/98/EC).

4.4.1 Supervisory authorities

This section provides descriptions of the supervisory authorities within the waste management area and their respective responsibilities in Iceland. In [Section 4.4.4](#), a schematic overview is presented to visualize the different actors involved in the supervision of waste and in what areas they operate, see [Figure 7](#).

The Environment Agency of Iceland (*Umhverfisstofnun*)

The EAI operates under the direction of the Ministry of the Environment, Energy, and Climate. The EAI's role is to be responsible for the promotion of environmental protection, nature conservation, a sustainable use of Iceland's natural resources, and public welfare. EAI supervises and enforces environmental policies, issues permits, conducts inspections, and ensures compliance with environmental regulations.

The EAI is responsible for issuing permits and doing inspections on waste management sites that require a permit from the EAI, such as landfills and incineration plants. Additionally, the EAI ensures that hazardous waste is managed in accordance with legislation. The EAI ensures that permit holders comply with the terms of their permits as stipulated by law. The EAI is also authorized to delegate the supervision and enforcement of coercive measures, covered by the Waste Management Act, to the public health authorities acting on its behalf.

The EAI approves notifications for import, export, and transit of waste specified further in a regulation issued by the Ministry. The EAI is also responsible for monitoring transboundary shipments of waste and supervises the transport of waste between countries.

Public health authorities (Heilbrigðiseftirlit)

There are nine different Public Health Authorities (PHA) in Iceland. Reykjavik Public Health Authority serves only one municipality. All other Public Health Authorities serve more municipalities, between 4–13 municipalities each.

The Public Health authorities supervise operators and waste management for activities that require permits from the Public Health Authority, for example, waste facilities or transport of waste. They also monitor sites where waste is collected to later be moved to larger waste management sites. The Public Health Authorities collaborate with the EAI as necessary regarding supervision and inspections of waste management.

Municipalities (Sveitarfélögin)

The 64 municipalities are responsible for the waste collection system but not for any supervision.

Other authorities

Besides the EAI and the Public Health Authorities, there is an overlap between the EAI and the Customs. The EAI and the Customs cooperate to a certain extent, for example, with matters relating to transboundary shipments of waste. The EAI and the Custom may also exchange important information.

Producer of waste

All companies and private persons have a duty to sort their waste correctly, whereas the producer of the waste is responsible for the classification.

4.4.2 Transportation of waste

National transportation of waste is dependent on registration by the Public Health Authority, according to the Act on Hygiene and Pollution Prevention. For example, this could be waste transport from an operator to a harbor. Transportation of hazardous materials needs a permit from the Public Health Authority.

Iceland follows the EU Regulation (EC 1013/2006) on Shipments of Waste, which has been implemented in Icelandic law. The EAI is responsible for the supervision of transboundary shipments of waste. Transportation of waste between countries is regulated by the EAI according to the Regulation on Registered Business Operations according to the Act on Hygiene and Pollution Prevention (*Reglugerð um skráningarskyldan atvinnurekstur samkvæmt lögum um hollustuhætti og mengunarvarnir no. 822/2010*). Cross-border transports need permits from the EAI.

When transporting waste between countries, several factors must be considered. It is prohibited to export waste for disposal unless it is a hazardous material, which then requires obtaining the necessary permits. Non-hazardous waste may be transported internationally for reuse, provided the required forms are completed. Note that Iceland is not a part of the EU. Although Iceland is a part of the European Economic Area (EEA), transports between Iceland and the other Nordic countries are transports crossing the outer border of the EU.

4.4.3 National waste register and tracking of waste

Before the 1st of May each year, operators must submit a report to the EAI detailing the waste they have treated during the previous calendar year. This report should include information on the types and quantities of waste, their origins (categorized by industry and municipality), and the disposition of each type. The EAI must ensure that national statistics, derived from operators' reports, are published online to meet international agreements.

4.4.4 Schematic overview

The following page shows a schematic overview of the different actors involved in the supervision of waste and in what areas they operate, see Figure 7. The colored arrows denote supervision.

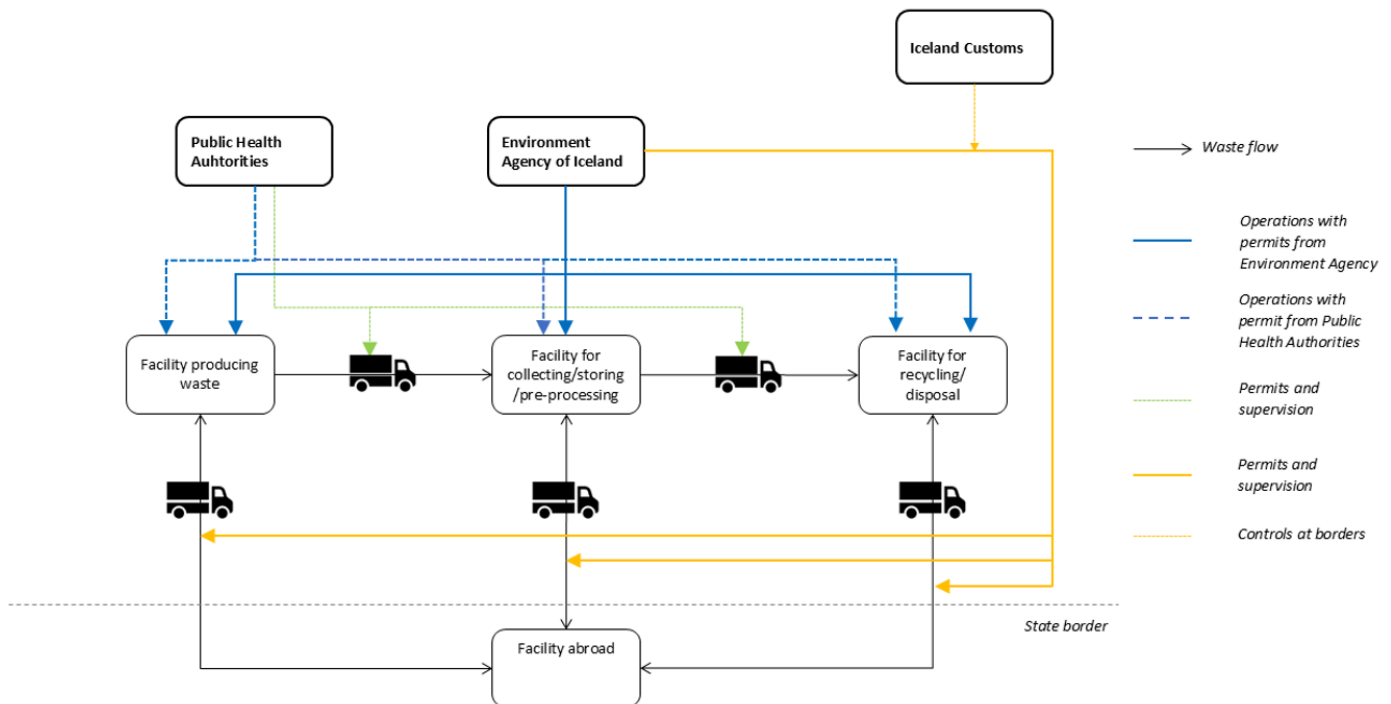


Figure 7. Iceland – schematic overview of the different actors involved in supervision of waste and in what areas they operate

4.5 Norway

Norway has 11 counties (fylker) and 356 municipalities (*kommuner*). On a national level, the Ministry of Climate and Environment is responsible for national environmental policy, legislation, and coordination. The Norwegian Environment Agency (EA) (*Miljødirektoratet*) implements policies, monitors environmental conditions, manages protected areas, and sets standards for pollution and conservation. In the counties, the county governor acts as the state's representative and coordinates environmental policies between the national and local governments. The municipalities manage local environmental issues including waste management.

The core environmental legislation is the Pollution Control Act (*LOV 1981-03-13 nr 06 Lov om vern mot forurensninger og om avfall (forurensningsloven)*) and the Nature Diversity Act (*LOV 2009-06-19 nr 100 Lov om forvaltning av naturens mangfold (naturmangfoldloven)*). The Waste Regulation (*FOR-2004-06-01 nr 930 Forskrift om gjenvinning og behandling av avfall (avfallsforskriften)*) and the Pollution Control Regulation (*FOR-2004-06-01 nr 931 Forskrift om begrensning av forurensning (forurensningsforskriften)*) stipulate detailed regulations regarding waste management, recycling, disposal of waste and pollution from waste treatment. Although Norway is not a member of the EU, they are a part of the European Economic Area Agreement (EEA) which requires them to adopt some EU regulations, including Waste Framework Directive (2008/98/EC)).

4.5.1 Supervisory authorities

This section provides descriptions of the supervisory authorities within the waste management area and their respective responsibilities. In [Section 4.5.4](#), a schematic overview is presented to visualize the different actors involved in the supervision of waste and in what areas they operate, see [Figure 8](#).

Norwegian Environment Agency (*Miljødirektoratet*)

The Norwegian EA administers regulations on waste and writes guidelines for how they should be enacted. According to the Pollution Control Act, the Agency is one of the Pollution Control Authorities (*Forurensningsmyndighet*) and is thereby in charge of granting pollution permits, including permits covering waste treatment.

The EA issues permits and supervises waste producers in industrial and offshore operations, facilities managing hazardous waste, waste incineration facilities, recycling companies, and waste brokers. The supervision can be coordinated and/or performed together with the county governor. The EA also usually supervises the systems for producer responsibility and the reuse of concrete waste (*Miljødirektoratet*, 2022).

Furthermore, the EA is responsible for the supervision of international waste transportation under the EU Regulation (EC 1013/2006) on Shipments of Waste, which is carried out in collaboration with Norwegian customs. The EA also cooperates with the Norwegian Maritime Directorate and the Norwegian Coast Guard for supervision of the export of end-of-life ships (Miljødirektoratet, 2021).

County Governors (*Statsforvalteren*)

The county governors grant permits and process notifications for those waste management facilities that the Norwegian EA has formally delegated to the county governors. The delegation of responsibilities is set out in a notification to the county governors. The county governors are also the supervisory authority of those facilities. The legal basis for their issuing of permits and supervision is the Pollution Control Act, the Pollution Control Regulation, and the Waste Regulation. The supervision can be coordinated/performed in conjunction with the EA. Operations being monitored include landfills, facilities for reception and storage of waste, car scrap sites, composting facilities etcetera. The county governors also guide and supervise municipal waste operations (Statsforvalteren, 2024).

The county governors supervise other operations as well, making sure that they follow the delivery obligations and other duties according to the waste legislation (Statsforvalteren, 2024). One example is the supervision of the retailers of EE-products and their obligation to accept discarded products (Miljødirektoratet, 2021). Supervision can be performed as thematic campaigns, focusing on one type of operation of a certain type of waste management.

The county governors also process waste management plans from harbors and supervise their operations (Statsforvalteren, 2024).

Municipalities (*Kommuner*)

Municipalities are responsible for collecting and treating household waste. The municipalities are also required to establish a waste management plan on how to reduce and handle waste and approve waste management plans for operations within the municipalities.

Municipalities are the authorities responsible for the prevention of littering, which includes investigating operations that have caused littering. The exception is when the operation has a permit issued under the Pollution Control Act by the county governor or the Norwegian EA, in which case the littering matter should be processed by the authority that issued the permit. An example of this may be littering from an industrial operation.

The municipality may be responsible for supervision of the use of concrete waste in construction work unless the Norwegian EA has appointed another authority. If the concrete is used in public road construction, the county governor is responsible for the supervision.

Within the municipality's area of authority, the municipality must also monitor the general pollution situation and waste management. This means, for example, that the municipality should have unrestricted access to properties where pollution or waste issues have occurred or may occur (Miljøverndepartementet, 1998).

Other authorities

Other authorities that can be involved in the supervision of waste management include the Norwegian customs which control the import and export of waste, as well as the police, which investigates environmental crimes.

Producer of waste

Those producing waste must sort their waste correctly and dispose of their waste following national and supplementary regional/local regulations. For example, municipalities are obliged to offer source separation of household waste to their citizens and to deliver the waste that has been source-separated for recycling. Similar rules apply to companies producing municipal waste.

Particular rules apply to those who produce and receive hazardous waste. Producers of hazardous waste are obliged to declare their waste, whereas the operators with permits to receive or store hazardous waste are required to lodge annual reports to the supervisory authority. The operators are also responsible for the classification of their waste.

4.5.2 Transportation of waste

Norwegian transporters of waste are required to register their business with the national business registry, the Brønnøysund Register Centre.^[3] There is no other requirement for specific permits or notifications for waste transportation within Norway. National shipments of waste are also not a prioritized area for supervision. Transporters do, however, need to adhere to the ADR-regulations relating to the transport of hazardous waste, while professional actors transporting waste for other parties are required to declare hazardous waste and bring along the actual declaration form on the shipment. Transporters also have a general responsibility to ensure that the transportation does not cause unacceptable levels of pollution.

For international shipments of waste, documentation according to the EU Regulation (EC 1013/2006) on Shipments of Waste and the Basel Convention is required. An exporter in Norway must apply to the EA for consent to export waste, depending on the waste and the receiving country or the country of origin. Both exporters and importers of waste are also required to annually report all shipments of notifiable waste to the Norwegian EA (Miljødirektoratet, 2023). Note that Norway is not a part of the EU. Although Norway is a part of the European Economic Area (EEA), transports between Norway and the other Nordic countries are transports crossing the outer border of the EU.

3. The Brønnøysund Register Centre provide order and overview of information on financial issues, ownership, and liability in businesses in Norway.

4.5.3 National waste register and tracking of waste

Norway has a national waste register (*Avfallsregisteret*) managed by the Norwegian EA. This register is part of the KOSTRA system (Municipality-State-Reporting), and it compiles data from municipalities and inter-municipal waste companies (SSB, 2023).

Tracking of hazardous waste is managed through three different registers: the Waste Declaration (owned by the Norwegian EA), Pollution (industry's self-reporting to the Norwegian EA), and the import/export database of the Norwegian EA (SSB, 2023).

As mentioned above, all shipments of waste, both imports and exports, must be reported annually to the Norwegian EA (Miljødirektoratet, 2023).

4.5.4 Schematic overview

The following page shows a schematic overview of the different actors involved in the supervision of waste and in what areas they operate, see Figure 8. The colored arrows denote supervision.

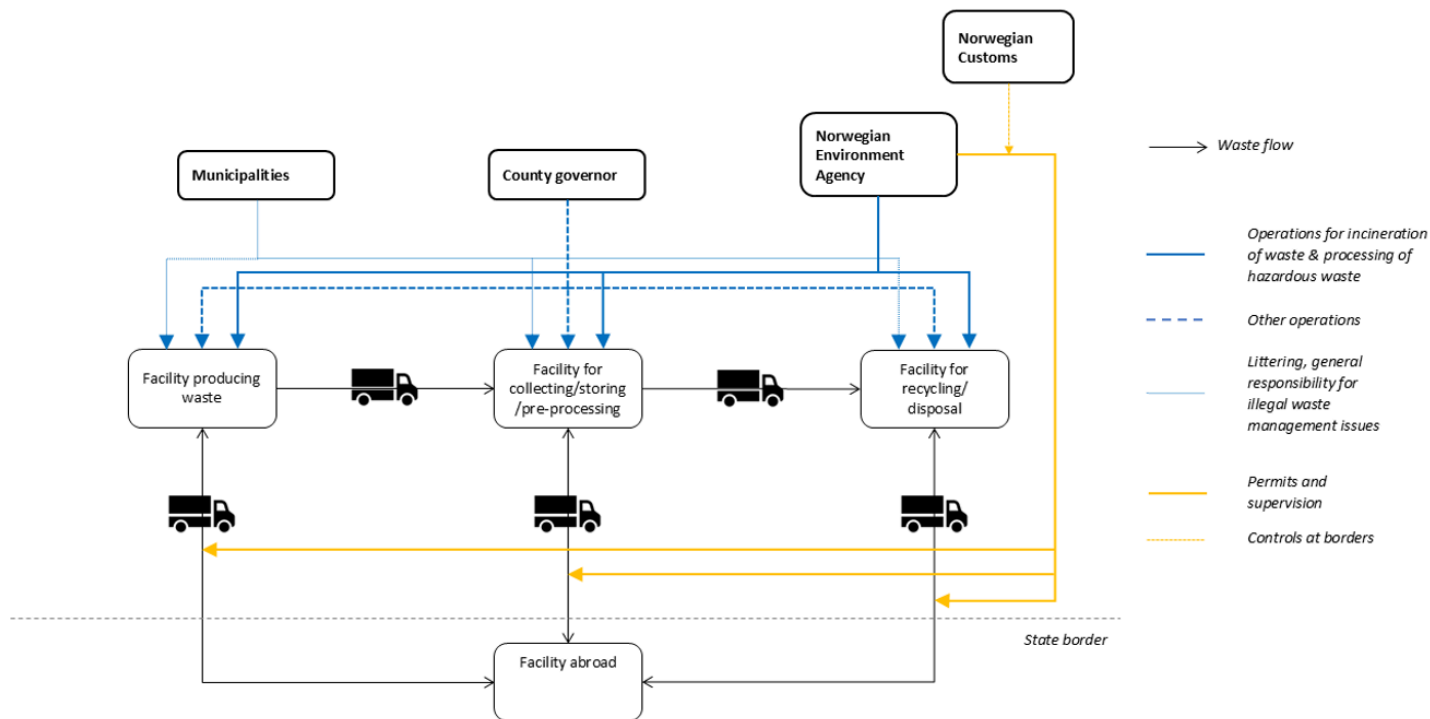


Figure 8. Norway – schematic overview of the different actors involved in supervision of waste and in what areas they operate.

4.6 Sweden

Sweden has 290 municipalities (*kommun*) and 21 counties (*län*). In each county, there is a County Administrative Board (*länsstyrelsen*) responsible for the state administration in that county. The Ministry of Climate and Enterprise oversees national environmental policies, legislation, and international environmental agreements. The ministry develops strategies and regulations for environmental protection and sustainable development. On a national level, the Swedish Environmental Protection Agency (EPA) (*Naturvårdsverket*) implements environmental policies, monitors environmental conditions, conducts research, and provides guidance to other agencies and the public on environmental matters.

In Sweden, the Environmental Code (*Miljöbalken (1998:808)*), the Regulation on Waste (*Avfallsförordningen (2020:614)*), Regulation (1998:899) on environmentally hazardous activities and health protection (*Förordning (1998:899) om miljöfarlig verksamhet och hälsoskydd*), and Regulation (2013:251) on Environmental Assessments (*Miljöprövningsförordningen (2013:251)*) are the main legislations that regulate waste management and the permits.

In Sweden, the responsibility to examine an activity's environmental impact and to grant permits for environmentally hazardous activities, or to accept notifications for operations with moderate or little environmental impact, is broken down between authorities. This division is based on the classification regulated in the Regulation on Environmental Assessments, which is the implementation of the Directive (2010/75/EU) on Industrial Emissions (IED). Accordingly, the Land and Environment Courts are in charge of the permit procedures for A-operations, the regional County Administrative Board for B-operations, and the local municipality for C-operations.

4.6.1 Supervisory authorities

This section provides descriptions of the supervisory authorities within the waste management area and their respective responsibilities. In [Section 4.6.4](#), a schematic overview is presented to visualize the different actors involved in the supervision of waste and in what areas they operate, see [Figure 9](#).

Swedish Environmental Protection Agency (*Naturvårdsverket*)

The Swedish EPA is Sweden's central environmental authority. Its primary mission is to safeguard and improve Sweden's environment, addressing pressing issues such as climate change, biodiversity loss, and pollution. Its mission concerning waste encompasses several key objectives and responsibilities aimed at reducing the environmental impact of waste, improving resource efficiency, and fostering a circular economy. The Swedish EPA sets standards for handling, treatment, and

disposal of waste to minimize environmental and health risks and guides municipalities and businesses on adhering to waste management laws.

According to the Regulation (2011:13) on Environmental inspections (*Miljötillsynsförordning (2011:13)*), the Swedish EPA is responsible for supervision of extended producer responsibility for specific materials, for example batteries, disposable products, electronic equipment, cars, and tires, as well as for littering fees for producers of single-use disposable products.

The Swedish EPA is also involved in permit processes for international waste transportations, which is then supervised by the regional County Administrative Board. The Swedish EPA is further responsible for communication with other states in matters of illegal waste transportations, and for the supervision of illegal waste transportations of Swedish origin when such are encountered abroad. This is regulated in the Regulation on Environmental inspections.

County Administrative Board (*Länsstyrelsen*)

As mentioned above, the regional County Administrative Board, or more specifically; the delegation of environmental assessment, processes permit applications for waste operations classified as B-operations. However, the County Administrative Board is responsible for the supervision of both A- and B-activities unless this task gets delegated to a local municipality. The County Administrative Board also manages permits and notifications for waste transporters, and permits relating to foreign operators conducting waste management or transportation in Sweden. They also have a shared role with the Swedish EPA in issuing supervision guidance to the municipalities.

According to the Regulation on Environmental Inspections, the County Administrative Board further manages matters relating to the dumping of waste in water. It is also responsible for the supervision of the dumping and incineration of waste from ships and aircrafts.

Five^[4] out of 21 Boards have a specific responsibility for supervision related to the EU Regulation (EC 1013/2006) on Shipments of Waste, i.e. permits for transportation of waste as well as controls of transports across borders at ports and airports. That includes reviews of documentation and routines at operations that send or receive waste from abroad. The County Administrative Boards are also required to consult and cooperate with customs, the police authority, and the Coast Guard about monitoring matters subject to the EU Regulation (EC 1013/2006) on Shipments of Waste.

According to the Regulation on Environmental Inspections, the County Administrative Boards are also responsible for coordinating cooperation between

4. Länsstyrelsen i Stockholms län, Länsstyrelsen i Västra Götalands län, Länsstyrelsen i Skåne län, Länsstyrelsen i Norrbottens län, Länsstyrelsen i Dalarnas län

the police, the public prosecutors' office, and the supervising authorities to prevent criminal activity within the area of the Environmental Code and related EU regulations.

Municipalities (*Kommuner*)

According to the Regulation on Environmental Inspections, municipalities are responsible for supervising the transports of waste within the municipality, even for national transports, in cases when the EPA or County Administrative Board is not responsible. Municipalities are also responsible for monitoring operations that do not have waste management as their main activity but produce waste within their operation. Notifications for waste management facilities (C-activities) are processed by the municipalities. Municipalities also manage notifications and supervise the reuse of waste for construction purposes when it is classified as a C-operation or a U-operation (other operation).

Supervision tasks that are the responsibility of national monitoring bodies, for example, monitoring of A- and B-operations, can be delegated to municipalities if it is requested by the municipality according to the Regulation on Environmental Inspections.

Since 2023, municipalities are legally required to perform preventative measures against crime according to the Law (2023:196) on Municipal Responsibility for Crime Prevention Work (*Lag (2023:196) om kommuners ansvar för brottsförebyggande arbete*). For example, they are required to map out the current situation and develop an action plan. This enables municipalities to map waste-related crimes within the municipality.

Other authorities

Other authorities involved in the work against waste crime are primarily the police authority, customs, and the Coast Guard. The police enforce laws against environmental crimes and can support inspections related to waste management. Customs may do a preliminary screening of transports and check that a waste carrier has the necessary permits and documentation. If an illegal waste transfer is suspected, customs should contact the responsible County Administrative Board.

Producer of waste

The operators must ensure that they have the appropriate documentation and permits. In Sweden, the operators of facilities with potential environmental impact are also required to conduct self-monitoring as part of their regulatory responsibilities. This self-monitoring ensures that operators proactively manage and mitigate their environmental impact in compliance with laws and permits. The demands on operators involve systematic observation, measurement, and reporting of various environmental parameters. This is regulated in Regulation (1998:901) on operator self-monitoring (*Förordning (1998:901) om verksamhetsutövares egenkontroll*).

According to the Regulation on Waste, the producer of waste is also responsible for making sure that the company they hire to collect their waste has the required permits, except if the collector is the municipality or its operator.

Furthermore, the operator also has the responsibility to make sure that the waste is sorted and classified correctly according to the Regulation on Waste.

4.6.2 Transportation of waste

A company that professionally transports waste in Sweden either needs to have a permit or make a notification to the municipality, depending on the amount of waste handled per year and transport. A company that transports hazardous waste is required to obtain a permit. The County Administrative Board holds a register on the approved transporters.

When transporting hazardous waste, the transporter needs to bring a so-called transport document. However, it is a shared responsibility between the transporter and the producer of the hazardous waste to ensure the document exists and that its information is accurate.

For international shipments of waste, documentation following the EU Regulation (EC 1013/2006) on Shipments of Waste is required. The Swedish EPA is also involved in permit processes for international waste transport, which are then supervised by the regional County Administrative Boards.

4.6.3 National waste register and tracking of waste

Any activity that produces, transports, collects, brokers, trades, or treats hazardous waste is obligated to record the information specified in the Regulation on Waste, as further detailed regulation by the Swedish Environmental Protection Agency NFS 2020:5 on the obligation to record and report and to submit information of hazardous activities to the register on waste (*Naturvårdsverkets föreskrifter NFS 2020:5 om antecknings- och rapporteringsskyldighet och lämnande av uppgifter om farligt avfall till avfallsregistret*). The party responsible for making a record must also report the information to the Swedish Environmental Protection Agency's waste register. Supervisory authorities can request data from the register as part of the supervision.

4.6.4 Schematic overview

The following page shows a schematic overview of the different actors involved in the supervision of waste and in what areas they operate, see Figure 9. The colored arrows denote supervision.

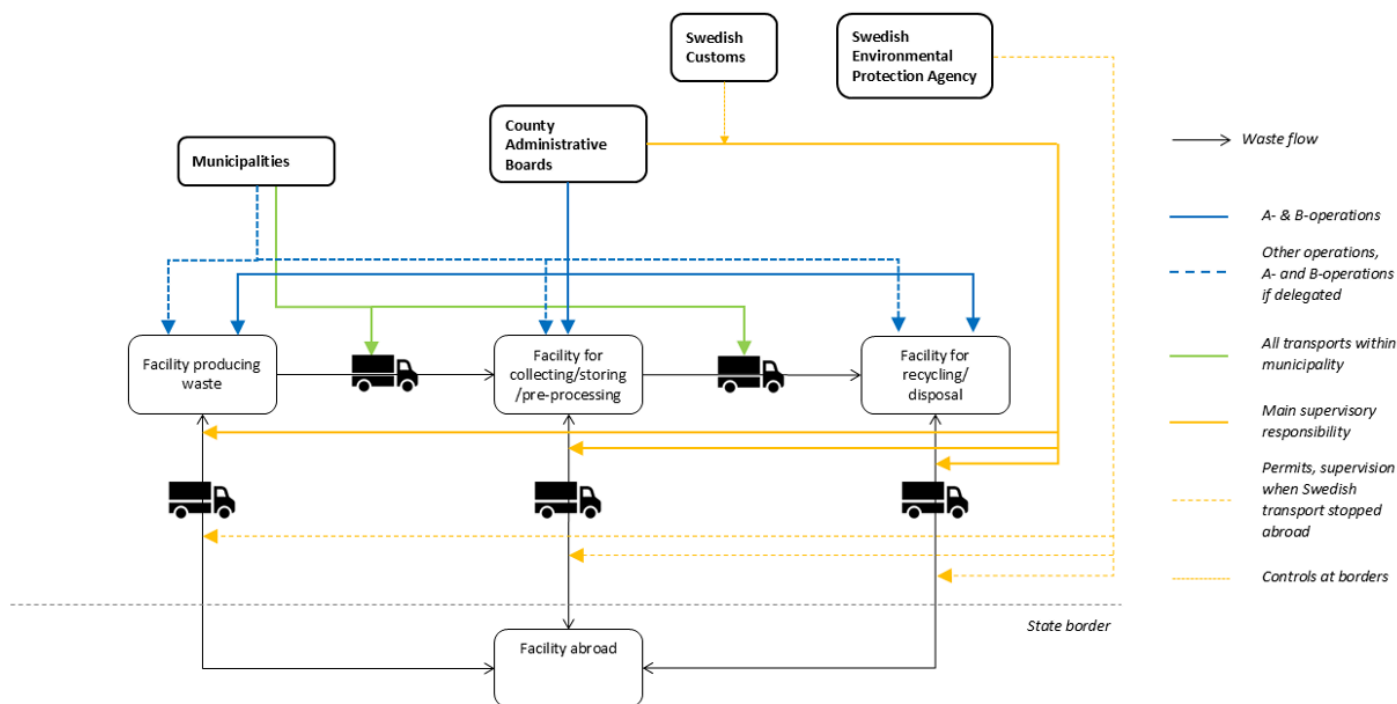


Figure 9. Sweden – schematic overview of the different actors involved in supervision of waste and in what areas they operate.

4.7 Comparison of structure

This section offers a comparison and analysis of the structure of supervision in the Nordic countries. The section is divided into three separate parts analyzing the supervisory authorities in general, the transportation of waste, and the National waste register and tracking of waste.

4.7.1 Supervisory authorities

The level of supervisory authorities involved in the supervision of waste in the Nordic countries varies; see Table 4. Most of the countries have both local and national levels, and there is a small variation on the regional level. For example, the local authorities can be municipalities, regional authorities can be county administration boards, and national authorities can be environmental protection agencies. In some cases, there is some overlap between the authorities in the supervision work and their responsibilities, as described in this chapter.

Table 4. Level of supervisory authorities in the Nordic countries. X = yes, (X) = partly. Empty = no supervision on that level.

Level	Denmark	Faroe Islands	Finland	Iceland	Norway	Sweden
Local	X	X	X		X	X
Regional			X	X	X	X
National	X	X	(X)*	X	X	(X)**

*On the national level in Finland, SYKE is responsible for the supervision of international shipments of waste but is not performing any other supervision. For example, SYKE also provides guidance and counseling relating to international waste shipments, see more in Section 4.3.

** On the national level in Sweden, the EPA is only doing certain, limited operative supervision, for example relating to international waste shipments and the producer's responsibility. The EPA mostly provides guidance to municipalities and businesses on adhering to waste management laws and sets regulations and standards, see more in Section 4.6.

This difference in the division of supervision could partly be explained by the size of the country, where Iceland and the Faroe Islands both have fewer inhabitants and occupy less space. Denmark, however, has approximately as many inhabitants as Norway but does not have any supervision on a regional level. Both Finland, Norway, and Sweden are large countries in terms of population and area, which could explain the more divided responsibility of supervision. See further analysis and comparison in [Chapter 5](#).

4.7.2 Transportation of waste

Generally, the requirements for international shipments of waste are similar in all countries, as they are all part of the Basel Convention. However, when it comes to the national transports, the structure differs; see Table 5. Denmark, Finland, Iceland, and Sweden demand permits or notifications for transporters, while the Faroe Islands and Norway demand no permits or notifications for national transporters. Interviewees from The Faroe Islands indicate that national transportation is managed by a small number of carriers, which may eliminate the need for specific permits. Due to the country's small size and isolation, there is a good oversight of domestic waste transport.

Table 5. Requirements for waste transport in the Nordic countries.

Level of transport	Within national borders	International
Denmark	Transporters must be registered	Must report according to EC 1013/2006
Faroe Islands	No specific permits are required	Must notify the EA
Finland	Must register as commercial transporter in the waste register	Must report according to EC 1013/2006
Iceland	Need permit	Need permit from EAI
Norway	No permit or notification needed Required to register with the national business registry	Must report according to EC 1013/2006
Sweden	Needs permit or notification depending on amount and/or type of waste	Must report according to EC 1013/200. May require notification to EA depending on type of waste and receiving country

4.7.3 National waste register and tracking of waste

Systems for tracking waste vary substantially between the Nordic countries; see [Table 6](#). In Finland, certain producers of waste are obliged to keep records regarding waste. However, there is no general waste register for facilities and the operators are not required to report statistics. Sweden has a waste register for reporting hazardous waste. The Faroe Islands, Norway, and Iceland have methods for collecting data from facilities, which are presented as statistics in different ways. However, regarding the Faroe Islands, there is no shared platform for waste data. Denmark, unlike the other countries, has a more comprehensive system for reporting data into a platform monitored by the EPA. The EPA also has another system for environmental administration where it is possible to see what supervisory authority is responsible for a specific facility and when the last inspection was carried out.

The extent of tracking of waste regarding transports varies as well. Sweden and Norway both have a system for monitoring transports of hazardous waste. Finland has a register with information about all the approved transporters and brokers, enabling businesses to check whether their transporters have the right permit. Denmark has a comprehensive system where all collectors report their data. Faroe Islands and Iceland have no system for tracking data from waste transports.

Table 6. Systems for tracking of waste in the Nordic countries.

Type of waste tracking	Facilities	Transports
Denmark	<p>Operations must report all their data to a waste data system monitored by the EPA.</p> <p>Separate system for digital environment administration, showing information about most polluting companies and environmental inspections. Monitored by the EPA.</p>	Collectors report to the waste data system monitored by the EPA.
Faroe Islands	The two waste management companies must register statistics but there is no shared platform for this.	
Finland	Facilities keep records, but there is no shared platform for this.	Has a register with all approved transporters and brokers monitored by SYKE.
Iceland	Reports from operators treating waste is sent to the EAI and the statistics are published online.	
Norway	<p>National waste register as part of the municipality state reporting (compiles data from municipalities).</p> <p>Separate system for hazardous waste monitored by the EA.</p>	Has a system for hazardous waste monitored by the EA.
Sweden	Have system for hazardous waste monitored by the EPA.	Has a system for hazardous waste monitored by the EPA.

5. Analysis of main themes

In the following chapter, the results from the interviews and the workshop are compared and analyzed. The chapter is divided into seven sections based on the main themes that have emerged during the study, mainly from the interviews. The aim is to highlight similarities, differences, challenges, and good examples from the Nordic countries.

5.1 Resources and financing of supervision

This section examines the methods of financing supervision and assesses whether respondents consider the available resources adequate for conducting the required supervision. A summary of the themes discussed in this section can be found in Figure 10. The countries are rather similar in the sense that most supervision is financed by different types of fees, which is seen as positive by several interviewees. There are some differences in how the countries view the sufficiency of the fees, but a common theme from the interviews and workshop is that there is a lack of time and resources for supervision, which affects the development of methods and cooperation, etc.

Comparison	<ul style="list-style-type: none">• Mainly funding by fees from supervision and/or permits• Differing opinions on the sufficiency of funding from fees<ul style="list-style-type: none">• Iceland and Norway deem it is enough• Sweden, Faroe Islands and Finland deem resources are too scarce
Challenges	<ul style="list-style-type: none">• Financing can affect planning of supervision<ul style="list-style-type: none">• E.g. actions that bring financing may be prioritized above education etc.• Generally, interviewees and workshop attendees mention a lack of time and resources. This limits e.g. development and cooperation.
Successful approaches	<ul style="list-style-type: none">• Fee-based supervision is in line with Polluter Pays Principle• County Administrative Boards in Sweden receive specific, continuous financing for supervision of TSW. Allows for more proactive supervision etc.

Figure 10. Summary of the analysis regarding Resources and financing of supervision.

5.1.1 Comparison of practices

The financing of supervision is generally similar in the Nordic countries. Essentially all the interviewees have responded that supervision is funded by fees for supervision and/or fees for administration of permits and notifications, particularly for supervision of facilities. Supervision of transboundary shipments of waste generally differs a bit from other types of supervision, but it can also be funded by fees from permit management, for example.

In Denmark, the main form of supervision, which is administrative supervision, is funded by fees paid by companies. However, if an on-site inspection occurs, it is currently funded by taxes. In the future, the funding for on-site inspections is also planned to shift to fee-based financing.

Opinions on whether the fees are sufficient to cover the cost of planning and conducting waste supervision differ. Some respondents, for example from Iceland and Norway, state that the fee is sufficient to plan and conduct the supervision of waste. However, one respondent from Norway states that although they work to make the fee relative to the resources needed for that specific supervision, it is not always possible.

» We are working to ensure that the price is reasonable in relation to resource usage, but we have experienced that sometimes it costs more than it yields.

Others, for example from Sweden, the Faroe Islands, and Finland, believe that the resources are scarce and that more funding would enable other types of supervision or developments in the supervision area.

5.1.2 Challenges

Financing effects on planning

One problematic aspect of funding can be conflicts of interest among the politicians that determine the amount of fees. During the workshop, a participant from Sweden raised the issue with politicians on a municipal level in Sweden wanting to simplify for companies to exercise their business by minimizing costs (for example from supervision) and in that way create a stronger economy in the municipality.

An interviewee from Sweden highlights that planning waste supervision with limited resources presents challenges. For example, there can be a trade-off between prioritizing inspections in areas where there is a high likelihood of finding violations resulting in better statistical outcomes or focusing on locations that may uncover serious offenders, such as a remote roadside. However, the latter approach carries the risk of discovering nothing at all, potentially leading to inefficient resource allocation. This dilemma underscores the importance of strategically

distributing resources in supervision to ensure effective outcomes while addressing significant waste violations.

An interviewee from Norway says that, for some authorities, there is a risk that the actions that bring financing, such as supervision, are prioritized above other tasks, such as education and spreading information.

Lack of time and resources

Another issue that most interviewees mention is the lack of time and resources in general. For example, it seems to be a common opinion among the interviewees in all countries that there are too few resources for working with waste supervision. Most interviewees mentioned that they want to do more than they can and have time for, which indicates that the will is there but not the right opportunities. With more time and resources, it would also be easier to develop and improve the supervision to counter illegal waste management, as illustrated in the following quote:

» If there were more resources, it would also be possible to identify and develop those points that prevent effective control today, and detection of illegal activities.

In general, several participants in the workshop and the interviews mention that there are a lot of interesting methods that could develop supervision. For example, systems for data analysis and systems for cooperation between authorities could make the risk assessment more effective and accurate. However, these types of projects need funding. Some participants also bring up that more funding would increase the authorities' possibilities of supervision options regarding the available tools for supervision. For example, it may enable more sampling. Furthermore, more resources could enable the expansion of supervision with more inspections, more time for follow-up, and more competence in the field.

This issue seems to span across different levels of supervision, from local to national level. It is also relevant for both the supervision of facilities and transboundary shipments of waste. Many supervisory authorities have few people with many tasks, both relating to waste management and other types of environmental supervision. This seems to be especially common for municipalities and other local or regional authorities. For transboundary shipments of waste, the planning and timing of supervision can also be limited by the coordination with customs and/or police, who also have limited resources. An interviewee from Sweden mentions that since the supervisory authorities cannot stop vehicles for control by themselves, it is always necessary to have staff from customs or the police on-site.

5.1.3 Successful approaches

Several interviewees are positive about the fee-based supervisory system, highlighting it as effective because it adheres to the Polluter Pays Principle, meaning that the cost of pollution prevention is placed on the polluter.

In Sweden, the County Administrative Boards that work with supervision of transboundary shipments of waste receive specific, continuous financing specifically for this type of supervision. The funding has been increased in recent years to ensure that the units can be staffed even during holiday periods, evenings, and weekends. An interviewee believes that this type of targeted funding is important for the type of supervision required:

» Funding and targeted allocations are a prerequisite for supervision to take place in the way it does. Otherwise, if there was no specific financing for this, the supervision would be “baked into the larger supervision cake”, [...] and it would be difficult to motivate proactive supervision etc.

5.2 Planning of supervision

A central topic in the interviews is the planning of supervision and how different actions are prioritized. A summary of the themes discussed in this section can be found in Figure 11. In all countries, planned supervision seems to be the most common. Planning is generally based on a risk assessment, both for the supervision of facilities and of transboundary shipments of waste. However, the implementation of risk assessments may vary for different authorities in the same country. In Norway, authorities regularly arrange supervision campaigns with specific themes, which seems to work well. Besides planned supervision, supervision may also be reactive.

Comparison	<ul style="list-style-type: none"> Planned supervision is most common in all countries. Planning generally based on a risk assessment, but execution varies. <ul style="list-style-type: none"> Planning of TSW supervision differs slightly from other supervision, but is also based on risk assessment in most countries Reactive supervision can take place in case of complaints from the public or information from other authorities
Challenges	<ul style="list-style-type: none"> Varying degrees of implementation of risk analysis, e.g. depending on resources available. A lack of resources is mentioned by many. Violations due to ignorance or negligence take up a lot of time, leaves less resources to find actually criminal operations.
Successful approaches	<ul style="list-style-type: none"> Denmark will implement a new, nationwide system for automated risk assessment, using information from waste data system. Norwegian supervisory authorities arrange supervision campaigns with specific themes. Seen as an effective way of conducting supervision and bringing industry together

Figure 11. Summary of the analysis regarding Planning of supervision.

5.2.1 Comparison of practices

Supervision of facilities and risk assessment

Overall, the principles for planning supervision of facilities are rather similar between the Nordic countries. In all countries, planned supervision seems to be the most common. Planned supervision in this context means supervision where operators or other objects of supervision are selected in advance by the supervisory authority, based on various criteria. For example, the Norwegian EA establishes a comprehensive three-year supervision plan for their area of responsibility. The plan is formulated on a more strategic level, and the plan is then modified continuously and specified for each year. The supervision plan is risk-based, and the risk assessment considers the type of operation, the size, and whether an operation has had issues in recent years.

In general, planned supervision is, or should be, based on a risk assessment in all countries. This has already been implemented in Norway, Finland, and Sweden. In Sweden, the planning of supervision is regulated by law in the Regulation on Environmental Inspections, which states that supervisory authorities are required to produce a needs assessment for their areas of responsibility. Based on this, an annual supervision plan is developed. In Iceland, risk-based planning has not been fully implemented yet.

The requirement for risk-based planning came into law in 2019, and the EA of Iceland plans inspections based on risk assessments. However, the Public Health Authorities (PHA), which are responsible for regional and local supervision, are still planning their supervision according to the older system, where the frequency of supervision was determined by categories defined in the regulation. In Denmark, risk-based planning of supervision will be implemented in conjunction with the broader renewal of the supervisory system, which come into effect in 2025. The EPA will then use an automated selection model based on several data parameters. The model will utilize information from the national waste data system in combination with post-processing that investigates why an operation was selected. In the Faroe Islands, the country's first waste plan is in the making, and with it, some changes in the organization of waste supervision are expected. Today, risk-based planning of supervision is not systematically implemented, but if there is information about issues with certain facilities, the EPA will prioritize the supervision of these facilities.

Reactive supervision

Aside from planned supervision, unplanned or reactive supervision can be carried out, for example, after receiving complaints from the public. Information on possible issues may also come from other supervisory authorities or, in the case of transboundary shipments of waste, from customs. As mentioned above, most of the supervision at facilities is planned, and reactive supervision only makes up a small part of supervisory actions. One participant from the Icelandic EAI estimates that only 5–10 percent of their supervision is reactive, and the estimate by a participant from the Norwegian EA is similar at 10–20 percent. Participants from the Faroese EPA and the Icelandic PHA mention that they have very few complaints overall, only a handful per year. On the contrary, an interviewee from a Finnish municipal environmental protection authority mentions that reactive supervision due to complaints makes up around 50 percent or more of the overall supervisory activities and inspections. The complaints can, for example, be about littering. The larger share of reactive supervision may be attributed to the fact that the municipality is relatively close to the citizens, which means that the threshold for complaints and information on violations from regular citizens is low. The fact that the municipality operates locally also means that it is easier to go on site and investigate matters. The municipality can act as a channel for transferring information to other authorities if a matter falls under someone else's jurisdiction. It should be noted that although reactive supervision makes up a large part of overall supervision, the supervision of larger operations and facilities by Finnish municipalities is still mostly made up of planned supervision.

Transboundary shipments of waste

As with several other aspects, the planning of supervision of transboundary shipments of waste differs slightly from national supervision, although risk assessments are the main basis for planning supervision of transboundary shipments of waste as well. The EU Regulation (EC 1013/2006) on Shipments of

Waste states that:

» Inspection plans shall be based on a risk assessment covering specific waste streams and sources of illegal shipments and considering, if available and where appropriate, intelligence-based data such as data on investigations by police and customs authorities and analyses of criminal activities.

Finnish SYKE develops an inspection plan on a three-year basis. The plan is based on a risk assessment. They aim to use the data as the basis for the assessment, but as there is not a lot of data available, it is not possible to make a very in-depth risk assessment. To gain additional background for the latest plan, SYKE held meetings with other authorities (for example, customs and police) to gather information to inform the risk assessment. An interviewee provides an example of how selection could be made by saying:

» A specific company may also be selected for monitoring if there are anomalies in the export declarations, so the next time they declare a shipment it will be checked.

Icelandic and Norwegian authorities also plan inspections based on a risk assessment. For the Norwegian EA, the difference compared to "regular" supervision is that the planning of supervision of transboundary shipments of waste is focused on selection based on types of waste, for example, plastics, car parts, or textiles. What waste that is prioritized can change from year to year, and a revision of the assessment takes place in the autumn for the coming year. The Danish EPA plans their supervision based on previous cases, political priorities, and information from police or customs. The Danish Customs Agency has analytical tools that map the flows of waste going in and out of Europe and risk profiles based on available data, which help determine, for example, how many transports should be taken out for inspection for a specific type of waste or a specific destination.

Besides risk assessment based on, for example, statistics, an interviewee from the Swedish County Administrative Board also mentions on-site selection and random selection as a part of choosing where and when inspections should be made. For the supervision of transboundary shipments of waste, the interviewee believes that a compromise must be made between identifying the most likely sites for discovering many illegal waste shipments and performing inspections in more remote locations to deter criminal actors from starting to use these border crossings instead. In the more remote locations, fewer illegal shipments are discovered, and it can be difficult to argue that these types of inspections should be made, as it may not "look as good" on paper to spend many hours performing inspections and stopping only a few or no illegal shipments. However, the Swedish interviewee argues that both types of supervision are important for the supervision to have the intended effect on illegal shipments of waste.

The interviewees give slightly different responses when it comes to reactive supervision of transboundary shipments of waste. In Denmark, 60–70 percent of the supervision of transboundary shipments of waste is seen as reactive supervision by the EPA. Interviewees from other countries mention that supervision due to complaints or suspicions happens and that these types of issues are usually prioritized, but this seems to be a smaller part of the supervisory actions overall. For example, participants from Sweden and Finland mention that they do not receive that many complaints per year for the area of transboundary shipments of waste.

5.2.2 Challenges

As previously mentioned, supervision should be based on a risk assessment for most countries, but there are various levels of implementation. For example, implementation across all supervisory authorities on different levels can be a challenge. When multiple supervisory authorities are involved and their resources differ, it may be difficult to guarantee that risk assessments are conducted equally, for example. In the current system in Denmark, municipalities are fully responsible for the supervision of waste management facilities and national transports. There are 98 municipalities in total, and each municipality handles the planning of supervision in their own way. Municipalities can also prioritize supervision of waste management differently, and some may allocate more resources to it than others. This means that the conditions for operations can vary quite a lot in different parts of the country. In general, where supervision is divided between many authorities, there could be a risk that supervision is not “equal” in all parts of a country. The changes in the Danish supervisory organization, which will be implemented in 2025, along with the new, data-driven model for risk assessment and selection, aim to even out the differences that exist today.

Planning of supervision is often about prioritizing and finding what actions are most critical in order to protect the environment and people's health. However, with a lack of resources, it can also be difficult to find time for strategic work, such as in-depth analyses and systematic planning. Access to data and statistics, as an important basis for effective planning and use of resources, is mentioned by several interviewees. Both interviewees from Norway and Iceland mention that they receive data on exports and imports of waste from customs and that this data is important for their planning.

Both interviewees from Sweden and Finland mention that operators who are not intentionally illegal but who are negligent or unaware of the legislation can consume a lot of time and resources from supervisory authorities. This makes it harder to find criminal operations where the whole business idea is based on illegal waste management. An interviewee from Finland notes that the legislation is made to be followed and that it is not designed for the supervision of actors that are actively trying to violate the legislation.

5.2.3 Successful approaches

Risk-based assessment is or should be the basis for planning of supervision in all countries. An interviewee from the Icelandic EAI states that risk-based assessment works well and is very important for guidance on how to prioritize and where to increase or decrease the number of inspections.

Denmark's new system for automated risk assessment is an example of how waste data can be used systematically to plan supervision. The system is nationwide, meaning that the conditions will be equal for the whole country. The differences in how waste supervision is prioritized by the municipalities can hopefully be leveled out, resulting in more equal conditions for operations in different parts of the country. As a lack of resources is a pressing matter for many supervisory authorities, the fact that the initial screening is done automatically streamlines the work and reduces the time spent on the selection of operations for supervision. However, there is some uncertainty associated with this system, as it is based on data delivered by the operators themselves. An interviewee from the Danish EPA also reports that as the waste data system is quite extensive and has a lot of columns that need to be filled out, it means that the data provision is sensitive for reporting errors.

The Norwegian EA and the county governors regularly arrange supervision campaigns with a specific theme or focus. The focus can be on one type of operation of a certain type of waste management. For example, the county governor organized a supervision campaign in 2020 focusing on dealers of electrical and electronic (EE) products and their obligation to accept discarded EE products, as this is seen as an important part of preventing illegal export of this type of waste. The campaign has been repeated in 2024. Another example from 2020 is a campaign focused on fires in waste facilities, that was conducted in cooperation between the EA, the country governor, the local fire brigade, and the Norwegian Directorate for Civil Protection (DSB) (Miljødirektoratet, 2021). These campaigns are seen as an effective way of conducting supervision while also bringing the industry together in improving an area of waste management, as operations are often prone to comparing themselves with their competitors.

5.3 Method and technology in supervision

This section covers the different methods of supervision, as well as some reflections on challenges and successful approaches. A summary of the topics discussed in this section can be found in Figure 12. There seem to be three main components of supervision within waste management, and these are administrative supervision, visual inspections, and interviews. These are performed to various degrees by different supervisory authorities. Supervision of transboundary shipments of waste generally entails more visual inspections as well as unannounced supervision. Good cooperation with customs also seems to be quite common for the supervision of transboundary shipments of waste. Overall, unannounced supervision and supervision outside office hours is rare. Sampling as a part of supervision is also very rare.

Comparison	<ul style="list-style-type: none">• Three main components of supervision seem to be: Administrative supervision, visual inspection and interviews.<ul style="list-style-type: none">• Can be done on separate occasions or together as one yearly audit.• TSW supervision entails more visual inspections and unannounced supervision/control than supervision of facilities.
Challenges	<ul style="list-style-type: none">• Taking samples as a part of supervision is very rare.<ul style="list-style-type: none">• Lack of samples can cause issues if reported to the police – may demand evidence for further investigation.• Both unannounced supervision and supervision outside office hours seems to be rare for facilities. Opinions differ on the importance of this.
Successful approaches	<ul style="list-style-type: none">• Planned supervision and inspections based on risk assessments seems to be effective and well-functioning, according to interviewees.• Established cooperation with customs for TSW supervision is quite common and seems to work well.

Figure 12. Summary of the analysis regarding Methods and technology in supervision.

5.3.1 Comparison of practices

General supervision

The different methods of supervision are generally similar between all the Nordic countries. General supervision in practice is usually based on three main components; see Table 7. These different parts may be done on separate occasions or all together as a part of a yearly audit, for example. The methods can also vary depending on how the supervision is planned; see [Section 5.2](#) above.

Table 7. Main methods of general supervision in the Nordic countries.

Main components – supervision in practice		
Administrative supervision/documentation control	Visual inspection (on-site, photos)	Interviews with the operator/employees

One part of the supervision is administrative and is used in most cases. This part can, for example, include control of documentation, relevant permits, and routines at the facilities. Document control can also occur for waste transports. The control of documentation may be done separately, but it can also be done at the same time or in connection with a visual inspection. How often document control is performed varies. As an example, one participant from the Danish EPA estimates that there are around 300,000–350,000 operations in Denmark that are subject to supervision, including both the national and municipal level. With their new risk-based selection model for supervision, they estimate that there will be around 27,000 instances of administrative supervision per year. The administrative control of selected operations is performed by the EPA, and if it is deemed necessary, the operation will be selected for a physical inspection, which can be done either by the EPA or the municipalities depending on the type of operation.

Aside from the administrative part of the supervision, on-site inspections are common. For example, an interviewee from Iceland mentions that it is the main method for them and that all senses should be used during an inspection, such as smelling, seeing, and hearing. Visual inspections of facilities, containers, or transports can be done to control how different processes work or should be carried out. For example, to control how the waste is sorted or if the allowed amount is handled correctly. Interviewees from Sweden also mentioned that aerial photos can be used by the County Administrative Boards to perform some visual inspections digitally. An interviewee from Norway mentions that they prepare checklists before inspections and a list of questions that should be asked during an inspection or an interview. There is also a comprehensive routine from the

Norwegian EA on how supervision should be performed. During visual inspections, samples may be taken, but it is rarely done in any of the countries in this study. The visual inspections are mostly planned based on risk assessments (see [Section 5.2](#) above) and are mostly carried out during office hours.

Finally, several interviewees mentioned that interviews are also implemented as a method of supervision. The interview can be done with executives and/or employees at a facility to investigate how well things work. Interviews may also be held with drivers in the case of the transportation of waste. An interviewee from the Faroe Islands mentioned that when doing interviews, they are trying to interview employees at different levels in the organization. Then it is often possible to quickly determine whether it works well or not.

Announced or un-announced supervision

Another aspect is that most supervisory inspections of facilities are announced to the operator ahead of time. One participant from Sweden says that there is a strong supervision culture in Sweden that the operator should do self-controls and that supervision of facilities by authorities must be announced beforehand. In general, unannounced supervision of facilities seems to be very uncommon in most countries. The Norwegian EA is an exception, as a representative reports that around half of the inspections performed at facilities are unannounced and that they strive to make most inspections unannounced.

Transboundary shipments of waste

As with several other aspects, the supervision of transboundary shipments of waste differs slightly from national, general supervision of facilities. Transboundary shipment supervision generally entails more unannounced supervision and visual inspections. However, document control is also done, for example, to determine whether transporters have the necessary permits or notifications, that they have made correct waste classifications and more. Supervision of transboundary shipments of waste is often carried out by scanning containers. In Sweden, an interviewee mentioned that some supervision of waste shipments may also be done with drones for easier visual inspection. In Iceland and the Faroe Islands, inspections carried out in harbors are the most common, since the countries are islands. Generally, there are no designated locations for the supervision authorities to carry out transport inspections in any country, apart from the usual checkpoints used by, for example, the police.

There seems to be a clear pattern that authorities who perform supervision of transboundary shipments of waste generally have good cooperation with customs. For transboundary shipments of waste, customs especially in Finland and Norway, and to some extent Denmark, seem to have a larger role and cooperation in scanning containers for exports, looking for transboundary shipments of waste. In these cases, there is an established cooperation between the supervisory authority and the customs. This is also discussed in [Section 5.4](#) below.

5.3.2 Challenges

Samples

One of the main issues regarding supervision is the matter of taking samples. Today, it is generally very rare to take samples of waste during supervision. This applies to both general supervision and the supervision of transboundary shipments of waste.

There may be a need to increase sampling, which is expressed by several interviewees. In Sweden, an interviewee mentioned that the norm of taking samples should be changed due to the importance of samples as evidence in some cases. Similarly, an interviewee in Finland also mentions that sometimes when a case goes to court, you realize that more facts and accurate information about the analyses from samples would have been needed.

Even if samples seem to be uncommon, samples can be taken in special circumstances. For some countries, for example in Denmark, the Faroe Islands, and Finland, it seems that there needs to be an explicit suspicion of a violation or such for samples to be taken. Another example is that samples may be taken by the operator as part of the conditions in the permit or notification, but it is rarely done by the supervisory authority themselves. In these cases, the operator usually receives an order to take samples by the supervisory authority. In Sweden, Norway, Iceland, the Faroe Islands, and Finland, the supervisory authority may order an operator to take samples, for example, because of findings during supervision. However, interviewees from Finland mention that they do not want the operator to take samples unsupervised, meaning that a supervisory authority should be on-site and that the analysis should be done by a third party. Some interviewees mention that they, as supervisory staff, are not trained in taking samples. Therefore, it is usually necessary to bring in a third party to do the actual sampling and ensure that it is done correctly if the operator does not perform the sampling themselves.

Thus, all countries are similar in the sense that the supervisory authorities rarely take samples. However, the practices and attitudes of supervisory authorities in different countries can differ. This is exemplified in the quotes from three different interviewees below:

» More financial means have been requested for this matter. It must be approved by a unit manager or director and someone from accounting, which is a rather long process. [...] [Samples are taken] not very often; about 1-2 times a year, which will hopefully increase after 2025.

» No, very little [samples]. [...] I do not have expertise in taking samples. [...] But we can require the company to take samples and use an accredited firm for analysis and ask for a report.

» Samples are very rare, we rely on the visual inspection. If we see something that looks strange, for example combustible waste with a lot of organic material, we tell the operator to sort it out at the reception facility and report it.

It seems like it is perhaps not only a matter of tradition or "culture" within supervision that limits sample taking, but that a lack of resources or expertise on the subject are also possible limitations for taking samples.

Unannounced supervision and office hours

There seem to be different experiences regarding unannounced supervision between the countries. For the supervision of facilities, some interviewees think that unannounced supervision is necessary since planned supervision could be to the operator's advantage. This is illustrated in the following quote:

» Unannounced inspections are needed. It is easy to hide illegal practices and 'clean up' before the inspectors arrive.

Another interviewee thinks that whether it is announced or unannounced supervision is of less importance.

» When it comes to announced or unannounced supervision, supervisory authorities do not necessarily think that there is much point in coming unannounced. But there is a great expectation from the general public and politicians etc., who think this is important. It is okay for us supervisors to come unannounced, but with professional operators today we do not see much difference if we come announced or unannounced.

Either way, unannounced supervision can be difficult for several reasons, for example, due to lack of time and prioritization or even due to the financing of the supervision. During the workshop, one participant raised an issue with unannounced supervision where the inspectors may travel a long way to a facility, and then the operation is closed, or the responsible managers are not on-site. This costs a lot of money, and it is not possible to charge the operator for it. In summary, unannounced supervision can enable controls where the operator has not had time to hide possible evidence. However, there is no actual knowledge of how effective this is.

The matter of unannounced supervision is in some ways related to office hours, as both unannounced supervision and supervision outside office hours may have different outcomes compared to the more commonly announced supervision. Today, all general supervisory inspections are typically carried out during office hours. An interviewee from Sweden mentions that inspections for transboundary shipments can be done during evenings and nights, but this does not seem to be as common in the other Nordic countries. There seem to be differing opinions on the effects of office hour supervision in the different countries. Some interviewees believe that this can affect supervision because most of the illegal activities may occur in the

evenings when no supervision is performed. The matter is also brought up in the workshop. A Finnish participant states that there are issues with supervision only happening during office hours, as “all the bad things” happen in the evenings, outside office hours in their experience. An interviewee from Iceland has a slightly different perspective. The interviewee believes that the time of day does not affect the result of supervision, but instead that unannounced supervision has a greater effect. The Norwegian interviewees do not believe that only office hour supervision has a significant effect on the supervision, but that there is no guarantee that everything can be found only during office hours.

5.3.3 Successful approaches

Overall, most of the interviewees think that the methods used for supervision work well. Most of the interviewees think that planned supervision and inspections based on risk assessments are the most efficient and well-functioning parts of supervision. Interviewees have also mentioned that all parts of supervision are important and that it is necessary to have them all as a combination. Furthermore, interviewees mention that visual inspection regarding waste is an important complement to digital inspections or document controls. An interviewee from Norway mentions that a tour of the whole facility and visual inspection is often done first thing when they arrive at a facility. They find this to be a good strategy as waste can be spread in different parts of a facility and by asking about specific waste piles or containers, they can gain a good understanding of how well the staff knows the system and whether waste is handled according to the documentation. This is also how they discover the most anomalies or violations.

Collaboration, as mentioned above, has been mentioned as a challenge but also as one of the successful approaches. For example, the collaboration with the customs, other administration bodies, and municipalities. The collaboration with other authorities seems to be important for supervision in general; see more information presented in [Section 5.4](#).

As previously mentioned, supervision of transboundary shipments of waste generally differs somewhat from other types of waste supervision. A Swedish interviewee mentions that both unannounced supervision and proactive supervision are relatively common in the supervision of transboundary shipments of waste and that it is important for them to perform their supervision effectively. In general, the financing and regulations for this area put the supervisors in a different position compared to other types of supervision, according to the interviewee:

» Within transboundary shipment supervision - what works best is that we can actually work freely, operationally and proactively, in a way that is generally not common in environmental supervision. It has given many positive consequences with cooperation with authorities etc.

5.4 Cooperation with other authorities

This section investigates coordination between waste supervisory authorities, other authorities such as law enforcement, and cooperation with the operators. Furthermore, it discusses international cooperation on waste supervision. A summary of the themes addressed in this section can be found in Figure 13. The results from the study show that the regulations of some countries define and divide responsibilities between supervisory authorities more clearly than others. Overlaps with other authorities exist and can cause ambiguities. Authorities in most countries working with transboundary shipments of waste have established cooperation with customs, which seems to work well. Lack of time and resources limits opportunities for cooperation for some supervisory authorities, and there is limited sharing of data between authorities.

Comparison	<ul style="list-style-type: none">• Overlaps exist between different supervisory authorities. Some countries have clearer division of responsibilities in law, for others legislation is less clear and may cause ambiguities.• Cooperation with other authorities, e.g. customs, is more common for TSW.<ul style="list-style-type: none">• TSW supervisors also have networks for exchanging experiences.
Challenges	<ul style="list-style-type: none">• Lack of time and resources for supervisory authorities limits opportunities for collaboration and providing guidance to other authorities and operations.• Sharing of data with other authorities is limited, even within countries. Increased sharing of data could be useful for finding criminal operations.• There are few opportunities for local and regional supervisory staff to cooperate and exchange experiences.
Successful approaches	<ul style="list-style-type: none">• Cooperation and dialogue with operators is an important tool.• Cooperation with customs can partly compensate for lack of resources in the supervisory authority for TSW and ensure controls of TSW outside office hours.• Opportunities for cooperation and exchanging experiences are appreciated, especially as an opportunity to make useful connections.

Figure 13. Summary of the analysis regarding Cooperation with other authorities.

5.4.1 Comparison of practices

Overlaps between supervisory authorities

Based on the interviews, the division of responsibilities between the supervisory authorities is defined in laws and regulations for all countries. However, in some countries, the legislation regarding responsibilities seems to be clearer than in others. For example, in Denmark, a new Administrative Act will define what supervisory authority is responsible for the supervision of certain types of facilities. In Finland, the Environmental Protection Act and the Waste Act define which operations and facilities require permits. Appendix 1 of the Act contains a relatively detailed list of operations that require permits, and a paragraph in the Environmental Protection Act defines what types of permits are processed by the ELY Centers and which permits are handled by the municipal authorities. The interviewees from Finland state that there is not much overlap in responsibilities in the way they are defined by the law, but that there are still some gray areas where a discussion is required. In these cases, the municipality and the ELY Centers coordinate through meetings, emails, or over the phone to clarify the situation. The Faroe Islands also have quite a clear division of responsibilities in the Environmental Protection Act. So-called particularly polluting activities are defined in Chapter 5 of the Act, and a list of the operations that fall under Chapter 5 can be found as an appendix to the Act. All Chapter 5 operations apply for permits with the EA, which is also the supervisory authority for these operations. Other operations are the responsibility of the municipalities.

In Sweden and Norway, the division is not as clearly defined in legislation. In Norway, the ultimate responsibility lies with the Ministry of Climate and Environment, but matters relating to waste management are delegated to the EA. The EA has in turn delegated some of the waste management and supervision to the county governor, which can delegate some responsibility to the municipalities. The delegations rule out overlaps in responsibilities, but there are some areas where regulations might cause some ambiguities, especially between the county governor and the municipalities. It depends on what part of the legislation is concerned with a specific matter, and that is not always easy to determine. For example, the municipalities have a general responsibility relating to dumping of waste and illegal waste management. Therefore, complaints about littering or dumping of waste received by the county governor are often first sent to the municipality for evaluation. However, the county governor is the supervisory authority for several facilities that could be concerned in these cases, which may lead to some uncertainty in the responsibilities. Moreover, the legislation does not regulate how coordination between authorities should be performed, but the county governor often has an important role as a hub between the national level and the municipalities. This is not specifically linked to waste management; it is rather a

general role that the county governor can have. As a general principle for all levels of supervision, one supervisory authority may not perform supervisory activities for an operation that is another authority's responsibility, unless it is a planned joint supervision where one authority acts as an observer while the other performs the actual supervision.

In Sweden, there is some direction in the legislation regarding coordination between authorities, but the wording is quite general. The Environmental Supervision Ordinance states that a supervisory authority has a responsibility to notify other authorities and ensure that there is coordination when a possible overlap in tasks is discovered. However, it is not always given what this responsibility entails, and smaller municipal authorities may not have enough resources to arrange proper and regular coordination. The division between different supervisory authorities in Sweden is defined by law to some degree, based on the classification between A-, B-, and C-operations (see [Section 4.6](#)). However, there are overlaps in responsibilities in many cases. In addition, supervision which is normally the responsibility of a County Administrative Board, may be delegated to municipalities instead. This type of delegation is quite common, and the situation concerning supervision may therefore differ significantly in different parts of Sweden.

Overlaps relating specifically to transboundary shipments of waste

During the interviews and the workshop, it is quite clear that the people working with transboundary shipments of waste are specialists within their field, while they do not work that much with other types of waste supervision. Yet there is usually some overlap between authorities working with transboundary shipments of waste. Most waste that is exported or imported has a connection to a waste management facility, which in turn is supervised by a separate authority or unit within an authority. Normally, the division between the different types of operations is quite clear, but exactly how the supervision should be managed in cases where another authority finds an issue related to transboundary shipments of waste during their supervision is not always well-defined. In Sweden, the County Administrative Boards with responsibility for transboundary shipments of waste have developed their reasoning for these situations together with other County Administrative Boards, which supervise facilities. In Finland, the ELY Centers responsible for supervision of facilities can also take international waste shipments into consideration during their supervision and should then report the results of their inspections to SYKE (responsible for transboundary shipments of waste). The situation is similar when looking at national waste shipments. The ELY Centers are the competent authority for this in Finland, while the municipalities also monitor shipments and whether they are done properly; only it is done as a part of their supervision of the waste management operations or operations that produce waste.

Cooperation with other authorities

In all countries except the Faroe Islands, the supervisory authority responsible for transboundary shipments of waste has established cooperation with customs. In Norway, the customs are responsible for scanning containers in ports. The customs receive instructions from the Norwegian EA on what types of shipment should be scanned. For example, the EA may want customs to scan based on the destination country and/or the type of content, such as, plastics or electronics. If something needs to be controlled further, the customs will call inspectors from the EA to come on site. In Finland, the situation is similar. SYKE does their own inspections as well, but customs may also check that transporters have necessary documentation, scan containers, and so on. While SYKE only operates during office hours, customs are always on site in harbors, for example. If a suspicious shipment is detected by customs outside office hours, they will hold the transporter at the border until SYKE can come and do an inspection.

The Icelandic EAI also cooperates with customs on illegal shipments of waste, and it was decided last year (2023) that cooperation with customs should be increased. Customs both scan shipments and collect information on shipments that is then made available to the EAI. In Iceland, however, there is an overlap with the Maritime Department of the Icelandic Transport Authority (*Samgöngustofu*) specifically for ships. There are two regulations concerning waste management relating to ships. Smaller ships (under 500 brutto-tons) fall under general waste regulation, while bigger ships are handled in a separate regulation on ship recycling and are the responsibility of the Maritime Department. According to an interviewee from Iceland, the transporters are not always aware of the difference, which can cause issues for shipments and the documentation.

When discussing the cooperation between the customs and supervisory authorities, it should be noted that there seems to be no similar cooperation that enables continuous supervision outside office hours for facilities and national waste transports in any of the countries. In the workshop, participants also mentioned a forum for supervisory staff working with transboundary shipments of waste, where they meet twice a year to exchange information and discuss general issues within the area, although no specific cases are mentioned. The participants mention that this is a good opportunity to meet people and make connections that can be useful in the future. The Nordic Council of Ministers also has a Nordic Waste Group with representatives from authorities on the national level. However, there seems to be no similar network for other levels of authorities or other types of supervision.

International cooperation

As mentioned above, there are some international groups on cooperation concerning supervision and transboundary shipments of waste. These groups generally exchange experience on a strategic level, discussing methods and general

issues. When it comes to specific cases, there are no formal structures for international cooperation that the respondents are aware of. Although some mention that it is possible to report certain issues to the national authorities, who then can communicate to the other country in question, for example, to inform on findings of illegal waste transport from their country. However, there is no knowledge of to what extent that type of communication is made.

5.4.2 Challenges

Lack of time and resources

Cooperation and coordination between authorities is emphasized by many as a vital part of tackling waste crime, but it is also an area where there are many challenges. A general challenge, as in many other areas of waste supervision, is insufficient available resources for many supervisory authorities. Performing supervisory activities and processing permits and notifications are often prioritized over cooperation, coordination, and providing guidance on different matters. By extension, this could mean that supervisory authorities are not aware of each other's areas of responsibility, which could lead to violations being missed or that information about issues is not forwarded to the competent authority. During the workshop, a participant from Sweden noted that some crimes relating to waste transports go under the radar because customs might not see a waste shipment as goods and therefore do not make the controls as they should. In most countries, the interviewees see cooperation with customs as a strength, but the information above indicates that customs staff may need education and guidance to perform their part in waste supervision in an effective manner.

Cooperation and sharing of data with other authorities

Another matter relating to transboundary shipments of waste in Sweden is that the supervisory authority is fully dependent on coordination with customs or the police to do any controls on road transport at all. The inspectors at the County Administrative Board cannot stop vehicles themselves; they must have police with them to stop waste shipments and carry out inspections. This limits inspections to when customs or the police are available or perform other controls where the waste inspectors can do their work in parallel. A similar matter is that the supervisory authority for waste is not a part of law enforcement, and therefore they cannot exchange information with police as easily regarding suspicious operations or ongoing cases. Interviewees from the supervisory authorities in most countries say that they share information from supervisory activities with police in case of a police report, but that supervisory authorities rarely receive information from the police.

The lack of sharing of available data between authorities is also raised as a challenge. During the workshop, there is a discussion on accessing additional

information on companies, for example, from tax authorities, and how supervisory authorities may find a basis for risk assessment and planning of supervision that may not have been available from their documentation. Especially deliberate criminal operations may be possible to find when combining information from different types of authorities. An interviewee also stated that cooperation and collaboration between different authorities are crucial for tackling waste crime. The interviewee believes that higher punishments will not have an effect unless all relevant authorities can properly do their part to pressure the criminal operators "from all sides." A difficulty is implementing a practical system for cooperation and not only talking about the issues on a general level.

International cooperation for local and regional supervisory staff

During the workshop, there is also a discussion on how increased international cooperation between authorities on a regional and local level is needed, especially concerning specific cases. Today, some participants consider it difficult to know if waste that is exported ends up in the right facility, for example. Better ways of communication for supervisory staff on local and regional levels could enable ways of controlling receivers of waste shipments or informing about suspected legal violations. This is discussed as a key issue in combating waste crime on an international level. Furthermore, there is currently no cooperation between the Nordic countries regarding efforts to combat waste crime, which might also be needed given the extent of the issue.

5.4.3 Successful approaches

Aside from cooperation between the different authorities, interviewees from several countries mention that cooperation or dialogue with the operators themselves is also important. For example, an interviewee from Iceland stated the following in response to a question regarding what part of the supervision works the best:

» In general, working together with the permit holders. We may make our demands and assist them in finding a solution, may require a bit of patience but working with them is likely to give the best results.

Similar views relating to communication with operators are also expressed by interviewees from Norway and Sweden.

As previously mentioned, most countries cooperate with the customs in their supervision of transboundary shipments of waste, and this cooperation seems to work quite well in most cases. Customs can at least partly compensate for a lack of staff or other resources in the supervisory authority; they work around the clock and have systems for collecting data on shipments that can be used by the supervisory authorities. Another example of successful cooperation with law

enforcement comes from a Finnish municipal participant. The municipality has close, informal cooperation with the police in matters regarding environmental crime. The cooperation allows the municipality to contact the police rather easily when they suspect issues during supervision. The police and the municipality share information, discuss cases that need to be addressed, and have a shared attitude about what is in the legislation. If the municipality has a case where they are almost certain of a violation, they can contact police partners and bring them to the site before they make an investigation request or an official report. Then they may discuss together if a formal investigation is necessary. This cooperation seems to work very well, but it is not formalized. The cooperation is based on individual connections between current employees at both authorities, so it can collapse if employees change jobs.

Between the countries, there already exists some structures for cooperation, such as the Nordic Waste Group and the regular meetings for supervisory staff working with transboundary shipments of waste. As mentioned above, participants of the workshop believe that this is a good opportunity to meet people and make connections, making it easier to know who to contact if any questions or issues arise in the future. Some participants also mentioned that the workshop that was held as a part of this study was also an example of a good opportunity to network.

5.5 The burden of proof

This section explores which actor has the burden of proof during supervision, for example, when a violation is suspected. The analysis further investigates how waste classification is determined and who is responsible for making decisions on classification when opinions differ. A summary of the themes discussed in this section can be found in Figure 14. Supervision is generally *trust-based*, meaning that supervision is mainly based on data provided by the operators. This is generally seen as something positive, but several interviewees also believe that too much supervision is trust-based today, and that more controlling supervision would be needed. The responsibility for accurate classification of waste lies with the waste producer, which can be an operator. If a case is reported to the police, this can cause difficulties, as the burden of proof is then moved from the operator to the prosecutor.

Comparison	<ul style="list-style-type: none"> Supervision is generally "trust based", meaning that supervision is mainly based on data provided by the operators. Overall, the waste producer holds the primary responsibility for the accurate classification of waste. <ul style="list-style-type: none"> Supervisory authorities can provide guidance or a second opinion.
Challenges	<ul style="list-style-type: none"> Several interviewees believe that too much of supervision is trust based today. Controlling the accuracy of data provided by the operators can be challenging. The burden of proof moves from operator to prosecutor if a case is reported to the criminal justice system. <ul style="list-style-type: none"> Prosecutor may have difficulties gathering sufficient evidence.
Successful approaches	<ul style="list-style-type: none"> Generally, it is seen as positive that the burden of proof lies with the operator – requires knowledge of own operation. Thorough investigation and assessment by the supervisory authority can provide valuable information to legal justice system.

Figure 14. Summary of the analysis regarding the burden of proof.

5.5.1 Comparison of practices

Trust based supervision

Generally, the supervision is so-called trust-based, which means that it is the operators' responsibility to monitor their activities, take samples, and report information to the supervisory authority if needed. The regulatory authority plans and performs supervision based on the information provided by the operators. The authorities may demand additional measures or self-monitoring actions from the operator in case of a suspected violation, or if further documentation is needed as a basis for planning, for example. All Nordic countries have a supervisory system that is trust-based, where the supervisor mainly examines information given by the operator itself. Moreover, dialogue or instructions to the operator is usually the first step in case of violations in all countries (see [Section 5.6](#)).

Classification of waste

One key issue concerning waste management is the classification of waste. Waste can be classified into several categories based on its origin, properties, and the way it is managed. The classification is important to maintain correct and functioning waste management. It also affects how and what waste you can transport. The waste classification is the responsibility of the waste producer in general, which can be individuals, businesses, or other entities that produce waste. The classification of waste is in general similar between all the countries.

For example, in Sweden, the operator is responsible for the classification and has the burden of proof, but the supervisory authorities can also assess the classification during supervision. The Swedish EPA provides guidance and recommendations on how to classify, but the operator is always responsible for their own waste. If a case is turned over to law enforcement, the burden of proof is moved from the operator to the prosecutor.

In Norway, Finland, and Denmark, it is quite similar to Sweden. The operator is responsible for classification and has the burden of proof. Other authorities can reconsider the classification. Regarding the burden of proof, the authorities in Finland must also document and prove their classification of what type of waste it is. In Denmark, the Danish EPA will be responsible for the classification after the producer's classification. For example, if there is a need for classification during supervision, the matter must be taken to the Danish EPA, and then the waste will be classified there.

In Iceland, the producers also classify their waste. The burden of proof lies partially with the producer, but the receiver has a responsibility to control that the waste falls within the categories of waste that they are permitted to receive.

Regarding waste shipments, the different authorities must agree on the classification. If they do not agree, then the strictest opinion rules and determines the classification of the waste.

In the Faroe Islands, the waste producer is also responsible for the classification. For example, they are also responsible for filling out the correct classification in transport documents.

Overall, the waste producer holds the primary responsibility for the accurate classification of waste, supported by the regulatory framework and oversight from relevant authorities in each country.

5.5.2 Challenges

Trust based supervision

An issue that was raised, mainly by participants from Sweden, during interviews and the workshop is the difference between trust-based supervision and controlling supervision, and that too much of the supervision is trust-based today. As mentioned above, this means, for example, that supervision is planned based on data provided by the operators themselves, which implicates an assumption that the reported data is always correct. Controlling the accuracy of data and knowing when to trust the available data can be challenging, as the operators may either willfully provide incorrect data or make incorrect classifications of waste due to lack of knowledge, for example. A Swedish interviewee states that the current "culture" within supervision, to fully rely on and trust information and data provided by the operators, is not feasible and that other methods are needed. However, the interviewee also believes that the supervisory authority needs to be responsive and that a dialogue with the operators is crucial to ensuring their understanding and compliance:

» We should do controls, we should primarily do what we need to do. That said - how do we do this in the best way for the operators? That's where we need to get help from the operators, so that they accept this and understand it, and give us feedback so that our work is as smooth as possible with them.

Transitioning cases to the legal justice system

During the workshop, there was a discussion on the difficulties of handling over cases to the legal justice system because of the need for proof. As mentioned, during supervision, the burden of proof primarily lies with the operator. The operator must demonstrate compliance with waste management standards, often needing to provide documentation or evidence that their practices meet regulatory requirements. However, when a case is reported to the criminal justice system and becomes a matter for the courts, the burden of proof undergoes a significant shift. Here, the responsibility shifts from the operator to the prosecutor, who must gather sufficient evidence to establish the occurrence of a crime. The prosecutor may then have difficulties gathering sufficient evidence because of, for example, a lack of resources. And therefore, the prosecutor may struggle to meet the high evidentiary standards required in criminal proceedings. It is also possible that, by the time the case is investigated by the legal justice system, the potential evidence has been destroyed or moved.

Moreover, the supervisory authority may suspect that criminal activity is happening but cannot collect their samples as proof. Then when the case is reported to the legal justice system, the samples are needed to start the investigation.

5.5.3 Successful approaches

Generally, there is a positive attitude to the fact that the burden of proof lies with the operator during supervision. This is because it requires companies to have sufficient knowledge of their operations to make sure they comply with environmental legislation. Especially concerning crimes committed because of lack of knowledge, this system enables the operator to learn about their operations and the legal requirements.

Even though the question of proof can be difficult in the overlap between supervisory authorities and the legal justice system, an interviewee from Sweden means that if the supervisory authority manages to complete the investigation of a suspected illegal activity, it may be easier for the legal justice system to make their case by using the supervisory authorities' assessment as the basis for their case. However, that demands that the supervisory authority continues its work even though the case is handed over to the police authority.

5.6 Consequences of violation

This section investigates what actions the supervisory authority can take when a violation is suspected or confirmed. A summary of the topics discussed in this section can be found in Figure 15. Instructions and warnings to operators are usually the first step after a confirmed violation. This is also seen as an important part of supervision for many – a way of "nudging" operators in the right direction. Other consequences can be economic sanctions, such as penalty fees or fines. There are significant differences between the countries regarding how often the police are contacted or a report is filed in case of a violation. Sweden is the only country where supervisory authorities have an explicit obligation to report violations to the police.

Comparison	<ul style="list-style-type: none"> • Instructions or warnings to an operator is usually the first step. • Economic sanctions can be used in several countries. <ul style="list-style-type: none"> • Finland, Iceland, Norway and Sweden can impose penalty fee immediately. • In Denmark and the Faroe Islands fines can be issued after contact with the police. • Only Sweden has an explicit obligation to report to the police.
Challenges	<ul style="list-style-type: none"> • Police often request extensive evidence from supervisory authorities immediately after reporting a crime. This is rarely available. • Penalty fees for waste crimes are generally low, and the advantages of committing a crime can outweigh the cost of a fine.
Successful approaches	<ul style="list-style-type: none"> • Instructions and warnings is an important part of supervision, "nudging" the operators in the right direction. • Especially at the local level, communication with operators is reportedly a key factor for compliance.

Figure 15. Summary of the analysis regarding Consequences of violations.

5.6.1 Comparison of practices

Participants from all six countries answered that the supervisory authority can give instructions and warnings when they come across a law violation. The instruction can, for example, be to demand that the operator take samples to investigate possible environmental damage. Instructions can also be used to adjust the operation to ensure compliance with environmental and waste legislation. The requirement may have a time limit, meaning that the changes or investigation must be completed within a specified period. Generally, this is the method most used in all Nordic countries.

Economic sanctions are used by several countries, but in some different ways. Supervisory authorities in Norway, Finland, Iceland, and Sweden can impose a penalty fee immediately when the violation is discovered. However, the participant from Iceland says that fines are rarely used. A participant from Denmark states that there is a possibility to issue fines after the matter has been reported to the police. In the Faroe Islands, an economic sanction can only be given by the police authority.

» It is the police who write the report and then give the report to us. In this area, we cannot issue administrative fines; only the police can do that. And then we provide a statement on whether a law has been broken and a recommendation on the size of the fine. But we can only give recommendations.

In all countries there is a possibility to prohibit an operation if the damage done is extensive, but the interviewees are only aware of a few cases where this has been done.

The supervisory authorities also have the possibility to report a violation to the police in all countries. However, it varies to what extent this is done. Sweden is the only country where the authorities, in some cases, are obliged to report the crime to the police. Interviewees from Finland and Sweden say contacting law enforcement is common, but interviewees from Norway, Denmark, Iceland, and the Faroe Islands say it is not that commonly done.

5.6.2 Challenges

When it comes to instructions or warnings, there are different opinions on how effective it is. For example, some raise the question that it demands resources for follow-up, which they do not always have. A participant from Finland says it can be difficult to follow up on prohibitions on specific parts of an operation:

» That the entire operation should be halted is quite easy to monitor, but if only a part of it is to be halted, it can be very difficult to see whether they have actually done it or not.

Interviewees from both Norway and Sweden have raised an issue about reporting violations to the police. In both countries, it is possible for the supervisory authority to report law violations to the police, but the police often request extensive evidence since they themselves do not have the resources to gather the evidence needed in the case. The interviewees, however, state that the supervisory authority does not gather that kind of evidence in their supervision either. Moreover, the supervisory authorities' methods are often based on trust, which means that they instruct the operator to take the samples and gather the necessary information. This comes into conflict with the presumption of innocence, since the burden of proof lies with the prosecution to demonstrate the accused's guilt, not the accused.

One participant from Sweden also raises the issue that supervisory authorities sometimes think that their work is done when the matter has been handed over to the police, which causes them to not act as a supervisory authority. On the contrary, they should hand it over to the police and then continue with their work to deal with the problem with the operation.

» There is no risk of disrupting the preliminary investigation. Such arguments exist as well. All prosecutors across the country say that they do not need to worry about it. [...] On the contrary, it might actually be beneficial for the criminal case if supervisory measures have been taken to make corrections, as it clearly shows that this is not a minor offense but rather a significant pollution issue.

During the workshop, there was a discussion on how sometimes the penalty fee for committing a waste crime is set so low that it does not effectively deter the illegal activity. Instead, the low cost of the fine can be outweighed by the financial gains from committing the crime. This means that even after paying the penalty, the offender may still profit, making it economically advantageous to violate waste laws. The penalty therefore fails to reflect the severity of the offense, and the harm caused, thereby failing to act as a meaningful deterrent.

5.6.3 Successful approaches

Some interviewees describe the work with instructions or warnings as an important part of the supervision. One interviewee means it is a way of "nudging" the operators in the right direction and that good cooperation with the company is important. Especially at a local level, communication with the operators is a key factor for compliance with environmental and waste legislation.

Apart from that, no interviewees have raised specific examples of effective consequences of violations.

5.7 The greatest challenges for supervision of waste management

In sections 5.1-5.6 above, central topics from the interviews and the workshop have been discussed. This section focuses on summarizing the greatest challenges within the supervision of waste management, based on the interviews and the workshop. This section also relates the challenges to the matters discussed in previous sections and to the similarities and differences between the Nordic countries.

5.7.1 Summary of the greatest challenges

The following question was asked both in the interviews and during the workshop:

» What are the greatest challenges in the work against illegal waste management?
What prevents effective supervision today?

The answer to this question has varied depending on the country and the role of the respondent, although some common traits can also be noted. A summary of the answers from the different countries is shown in Table 8.

Table 8. Summary of answers to the question on the greatest challenges.

Denmark	Faroe Islands	Finland
<ul style="list-style-type: none"> • Lack of adequate resources • Lack of useful live data • Uneven level of supervision in different municipalities <i>(Upcoming changes hopefully improves the situation)</i> 	<ul style="list-style-type: none"> • Small country, far away • Lack of time and resources. Small organizations, insufficient personnel • Supervision not prioritized, too few inspections on-site 	<ul style="list-style-type: none"> • Lack of resources, insufficient personnel, little time for development • Keeping up the competence level, educating new employees • Lack of data for green-listed waste • Difficult to confirm information for facilities abroad.
Iceland	Norway	Sweden
<ul style="list-style-type: none"> • Lack of time, high workload for supervisors • Unclear regulations • Handling/supervision of big ships 	<ul style="list-style-type: none"> • Difficult to find time for good risk assessment • Need better information/data for planning and prioritization • Ensuring permits etc. when exporting waste outside own region or abroad • Unclear regulations for end-of-waste 	<ul style="list-style-type: none"> • Lack of effective collaboration between authorities • Too low sanctions for waste crime • Resistance to change hinders the adoption of new methods or approaches. • Trust-based supervision • Lack of tools for effective supervision of transboundary shipments

5.7.2 Comparison and analysis

Availability of data and tracking of waste

As is evident from [Table 8](#) above, some issues are mentioned by interviewees from several countries. For example, interviewees from both Denmark, Finland, and Norway mention that there is a lack of data available regarding different aspects of waste management and operations, which affects planning and prioritizing supervision. Interviewees from Denmark mainly mention a lack of live data, meaning that even though they have a rather extensive waste data system, the data is often reported with a delay and that issues may therefore not be noticed until sometime later. A Finnish interviewee specifically mentions a lack of data for green-listed waste regarding transboundary shipments but also mentions that upcoming regulations will hopefully improve this situation.

Generally, increased waste tracking and better availability of data are discussed as something that would be helpful, both to make better risk assessments in the planning process and to control operations during supervision. None of the countries have a comprehensive system for all waste

data, although some have it for specific waste streams or specific treatment facilities. Denmark is the only country that includes all types of waste in their waste data system, not only hazardous waste. However, as mentioned above and in previous sections, there are issues with their system as well.

The interviews have not covered the need for data in a specific manner, although this was raised as a common issue during the workshop. The discussion mainly focused on the sharing of data between authorities or between nations as helpful for better supervision, both concerning waste data specifically and information concerning legal compliance in other fields.

Unclear regulations

Participants from Iceland and Norway mention issues with unclear regulations, which causes difficulties both for supervisory authorities and operators as it can be difficult to interpret who is responsible or what documentation is necessary for different matters. There is a risk that some areas or responsibilities are overlooked when the division between two supervisory authorities is not clear. This also relates to what several interviewees have brought up regarding violations stemming from a lack of knowledge, rather than conscious crime, when unclear regulations can cause operators to unintentionally break regulations. The difficulties with unclear regulations, and especially unclear division of responsibilities, are brought up by other countries as well. For example, one participant from Sweden raised the issue of supervision authorities not following through with their work when a case is reported to the police. This is unfortunate because the supervisory authority should continue its work while the police carry out theirs, which is not always clear to the supervisory authority.

Trust-based supervision and deliberate criminal activity

Sweden is the country whose respondents bring up issues with trust-based supervision the most, pointing out that although there are benefits to having the operators perform self-control, it also leaves room for mistakes and conscious violations. Swedish interviewees also mention that there is a very traditional view on what supervision should entail, such as self-control, and that supervisory inspections should be announced. Resistance to change makes it difficult to bring new methods or approaches into use. In the other countries, trust-based supervision is not explicitly brought up, but some interviewees mention, for example, that they believe some operators are untruthful in their reporting or that they can clean up issues before inspection when the supervision is announced beforehand. A Finnish interviewee believes that the most difficult violations to discover are those committed by people or operations that provide seemingly correct documentation as a cover for illegal waste management. These types of operations are likely not possible to find using trust-based supervision, and perhaps other forms of supervision are needed. One reason for this to be specifically identified as an issue in Sweden could be the demand of the Swedish supervisory

authorities to report violations to the police, making them especially attentive to legal violations and deficiencies in the method for identifying breaches of the law.

The situation in the Faroe Islands differs quite a lot from the other countries in this study. The Faroe Islands go under Danish legislation and are seen as a part of Denmark in some areas and are seen as a separate country in others. The interviewees also mentioned that being a small country far away poses different challenges for waste management and supervision. Having small organizations with many tasks is also an issue for supervisory authorities. However, interviewees from the Faroe Islands mention that having a smaller number of companies and operations overall means that the supervisory authorities can have closer relations with operations and more detailed knowledge of what the operations entail. The Faroe Islands does not have an active waste data system, but the interviewees still believe that they have a good overview of the companies under their supervision due to the country's small size.

Lack of time and resources – a common issue

One thing that is common for participants from all countries is the issue of scarce resources in some way, something that also has been reflected in several of the different sections of this report. For some, there is a lack of time and a high workload for supervisors, and for some, it is difficult to get the needed competence, especially concerning new regulations. Planning supervision always entails prioritization, as it is not possible for supervisory authorities to check everything that they theoretically could control within their area of responsibility.

It is worth noting that participants from all countries bring up the lack of resources as an issue, even though the countries have quite different systems for supervision of waste management (see [Chapter 4](#)). For example, in Denmark, Finland, and Sweden, it seems that a larger portion of the supervision is placed with the local authorities (municipalities), whereas in Norway and Iceland, more of the supervision happens on a regional or national level. The reason for these differences has not been specifically discussed in the interviews or the workshop, but it may be interesting to investigate further and discuss the benefits and downsides of the different systems. Perhaps the accessibility of the country is one thing that affects what division of responsibility works best. For example, one factor could be whether road transport of waste is possible or if there are fewer points of exit and entry, as in the cases of Iceland and the Faroe Islands. Another factor affecting what system is the most efficient could be the size and population of a country. A larger country may have more regional and local differences, which could be why, for example, Sweden has a more local focus in their supervision. Sweden is also the only country where the supervision of transboundary shipments of waste is divided between different supervisory units. However, some interviewees have also mentioned the difficulties of having many smaller supervisory units, as it is more difficult to ensure comparable methodology and priorities in all parts of the country. For example,

Denmark is moving some supervision from the municipalities to the national EPA to streamline risk assessment and prioritization in supervision.

Since both lack of resources and difficulties in the division of responsibilities have been brought up, one could further discuss if and how the supervisory authority and the legal justice system should cooperate when a waste crime is suspected. Some have also mentioned that neither the police authority nor the supervisory authorities have the resources to collect the evidence needed to make a legal case. Furthermore, the differences in the burden of proof can make the transition of a case from supervisory authority to the legal justice system complex. However, it is worth noting that effective supervisory methods, supported by improved waste tracking and data sharing, could serve as valuable evidence both for supervision and if a case proceeds to the legal justice system.

Lack of international collaboration

During the interviews and especially during the workshop, issues in communication with other authorities were raised, both nationally and internationally, regarding uncertainties in waste shipments. During the workshop, it was therefore suggested that better possibilities to communicate internationally between regional and local authorities could also mean an increased capacity to address cross-border waste challenges, such as tracking exported waste. Moreover, increased communication between the Nordic countries could also bring benefits in waste supervision generally; for example, cooperation regarding efforts to combat waste crime could streamline the work in all Nordic countries. By sharing knowledge, experiences, and best practices, these countries could strengthen their supervisory processes and improve their work against waste crime.

5.7.2 Comparison and analysis

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It is worth noting that participants from all countries bring up the lack of resources as an issue, even though the countries have quite different systems for supervision of waste management (see [Chapter 4](#)). For example, in Denmark, Finland, and Sweden, it seems that a larger portion of the supervision is placed with the local authorities (municipalities), whereas in Norway and Iceland, more of the supervision happens on a regional or national level. The reason for these differences has not been specifically discussed in the interviews or the workshop, but it may be interesting to investigate further and discuss the benefits and downsides of the different systems. Perhaps the accessibility of the country is one thing that affects what division of responsibility works best. For example, one factor could be whether road transport of waste is possible or if there are fewer points of exit and entry, as in the cases of Iceland and the Faroe Islands. Another factor affecting what system is the most efficient could be the size and population of a country. A larger country may have more regional and local differences, which could be why, for example, Sweden has a more local focus in their supervision. Sweden is also the only country where the supervision of transboundary shipments of waste is divided between different supervisory units. However, some interviewees have also mentioned the

difficulties of having many smaller supervisory units, as it is more difficult to ensure comparable methodology and priorities in all parts of the country. For example, Denmark is moving some supervision from the municipalities to the national EPA to streamline risk assessment and prioritization in supervision.

Since both lack of resources and difficulties in the division of responsibilities have been brought up, one could further discuss if and how the supervisory authority and the legal justice system should cooperate when a waste crime is suspected. Some have also mentioned that neither the police authority nor the supervisory authorities have the resources to collect the evidence needed to make a legal case. Furthermore, the differences in the burden of proof can make the transition of a case from supervisory authority to the legal justice system complex. However, it is worth noting that effective supervisory methods, supported by improved waste tracking and data sharing, could serve as valuable evidence both for supervision and if a case proceeds to the legal justice system.

Lack of international collaboration

During the interviews and especially during the workshop, issues in communication with other authorities were raised, both nationally and internationally, regarding uncertainties in waste shipments. During the workshop, it was therefore suggested that better possibilities to communicate internationally between regional and local authorities could also mean an increased capacity to address cross-border waste challenges, such as tracking exported waste. Moreover, increased communication between the Nordic countries could also bring benefits in waste supervision generally; for example, cooperation regarding efforts to combat waste crime could streamline the work in all Nordic countries. By sharing knowledge, experiences, and best practices, these countries could strengthen their supervisory processes and improve their work against waste crime.

6. Conclusions

In this chapter, the conclusions of the study are presented to highlight similarities, differences, challenges, and good examples from the Nordic countries. The conclusions drawn from the analysis in chapters 3 to 5 are presented as bullet points and organized by section. [Section 6.10](#) provides a guide to good examples brought up by some of the participants during the study. [Section 6.11](#) includes [Table 9](#) highlighting common challenges along with suggestions for areas of continuous Nordic cooperation.

6.1 Waste crime in the Nordic countries

- Crimes relating to waste management in the Nordic countries seem to be similar in general, with certain variations. These variations may depend on the size and geographical conditions of the country, for example.
- Some variations could be explained by the interviewee's knowledge of different violations, as some have many years of broad experience within the field, and some have only worked within a specific area of waste management supervision.

6.2 Supervisory systems

- What levels of supervisory authorities (local, regional, national) that are involved in the supervision of waste in the Nordic countries varies. A reason for the variation could be the differing sizes of the countries.
- The occurrence and methods of transport control vary, particularly concerning domestic waste shipments.
- There are significant differences in how waste tracking is implemented across the Nordic countries. Enhancing waste tracking and better utilizing data (from both the waste sector and other authorities) could improve risk analysis and oversight.

6.3 Resources and financing of supervision

- Fee-based supervision is the most common approach, aligning with the polluter pays principle.
- A common theme across all countries is the lack of time and resources for supervision. Additional funding may allow more proactive supervision and the development of methods.

6.4 Planning of supervision

- Planned supervision is the most prevalent approach, with Norway, Finland, and Sweden implementing risk-based planning. In contrast, Iceland, Denmark, and the Faroe Islands are either working on or partially applying risk-based planning, but not in a systematic manner.
- Local knowledge plays a crucial role in planning supervision.
- Reactive supervision is generally uncommon at facilities. An exception is Finland, where it constitutes approximately 50 percent or more of overall supervisory activities and inspections by municipal environmental protection authorities.
- A shortage of resources is a key factor contributing to inadequate supervision planning.

6.5 Method and technology in supervision

- Supervision methods are largely similar across the Nordic countries.
- Generally, sampling is uncommon across all these countries. However, increased sampling during inspections can strengthen the evidence available to regulatory authorities, making it easier to impose fines and support law enforcement and prosecutors in building robust cases against offenders.
- Cooperation with other authorities is both challenging and essential for effective supervision, particularly concerning transboundary shipments of waste.
- Opinions on unannounced supervision vary. While it can facilitate controls before operators have a chance to conceal evidence, its effectiveness is not well documented, and it can be challenging to finance.
- There are varying opinions on the effectiveness of office-hour supervision. Some participants noted that issues often arise outside office hours, suggesting that most problems occur in the evenings. Others believe that the time of day has less impact on supervision outcomes than the use of unannounced visits.

6.6 Cooperation with other authorities

- A clear legal division of responsibilities among supervisory authorities helps streamline their work and reduces ambiguities.
- Time and resource constraints often hinder effective cooperation.

- Data sharing between authorities is limited across all countries. Greater data sharing could enhance the detection of criminal operations.
- There is a deficiency in international cooperation and forums for:
 - Strategic communication about combating waste crime.
 - Regional and local-level cooperation and communication on specific cases.

6.7 The burden of proof

- Supervision is typically trust-based, which is generally viewed positively. However, several interviewees expressed that there is currently too much reliance on trust and that more stringent, control-based supervision is needed. The responsibility for accurate waste classification rests with the waste producer, who may be an operator.
- When a case is reported to the police, it can create challenges as the burden of proof shifts from the operator or producer to the prosecutor.

6.8 Consequences of violation

- Instructions and warnings are the most common consequences for violations across all countries. This approach is generally seen as positive, as it helps "nudge" operators in the right direction and encourages them to improve their understanding of their operations.
- There are notable differences between countries regarding the frequency of involving the police or filing a police report for violations. Finland and Sweden are the only countries where contacting law enforcement is common. Sweden is unique in having a specific obligation for supervisory authorities to report violations to the police.
- In some cases, penalty fees for waste crimes are set so low that they fail to effectively deter illegal activities. The relatively small cost of the fine may be easily outweighed by the financial benefits of committing the crime.
- No country has identified effective methods for structural cooperation between supervision and legal justice systems. Instead, there appear to be challenges in aligning the various authorities' approaches, particularly in evidence collection.

6.9 The greatest challenges

- None of the countries have a comprehensive system for all waste data, although some have it for specific waste streams or specific treatment facilities. Generally, increased waste tracking and better availability of data are discussed as something that would be helpful, both to make better risk assessments in the planning process and to control operations during supervision.
- Unclear regulations can cause difficulties both for supervisory authorities and operators, as it can be difficult to interpret who is responsible or what documentation is necessary for different matters. This also relates to what several interviewees have brought up regarding violations stemming from a lack of knowledge, rather than conscious crime, when unclear regulations can cause operators to unintentionally break regulations.
- Trust-based supervision is only brought up as an issue in Sweden, however, interviewees from other countries mention that they believe some operators are untruthful in their reporting, or that they can clean up issues before inspection when the supervision is announced beforehand. One of the most difficult violations to find can therefore be those committed by operations that provide seemingly correct documentation as a cover for illegal waste management. These types of operations are likely not possible to find using trust-based supervision, and perhaps other forms of supervision are needed.
- All countries have issues with scarce resources. For some, there is a lack of time and a high workload for supervisors, and for others, there is a lack of possibility of getting the needed competence, especially concerning new regulations. This specifically causes issues conducting:
 - sufficient planning and risk assessment
 - communication and cooperation with other authorities
 - conducting reactive, unannounced, and around-the-clock supervision
 - sample taking
- There is a lack of international cooperation and communication regarding cases on a regional and local level.

6.10 Good examples

This section provides an overview of good examples that have been raised during the study. The examples are presented in Figure 16 and further described in the section below.

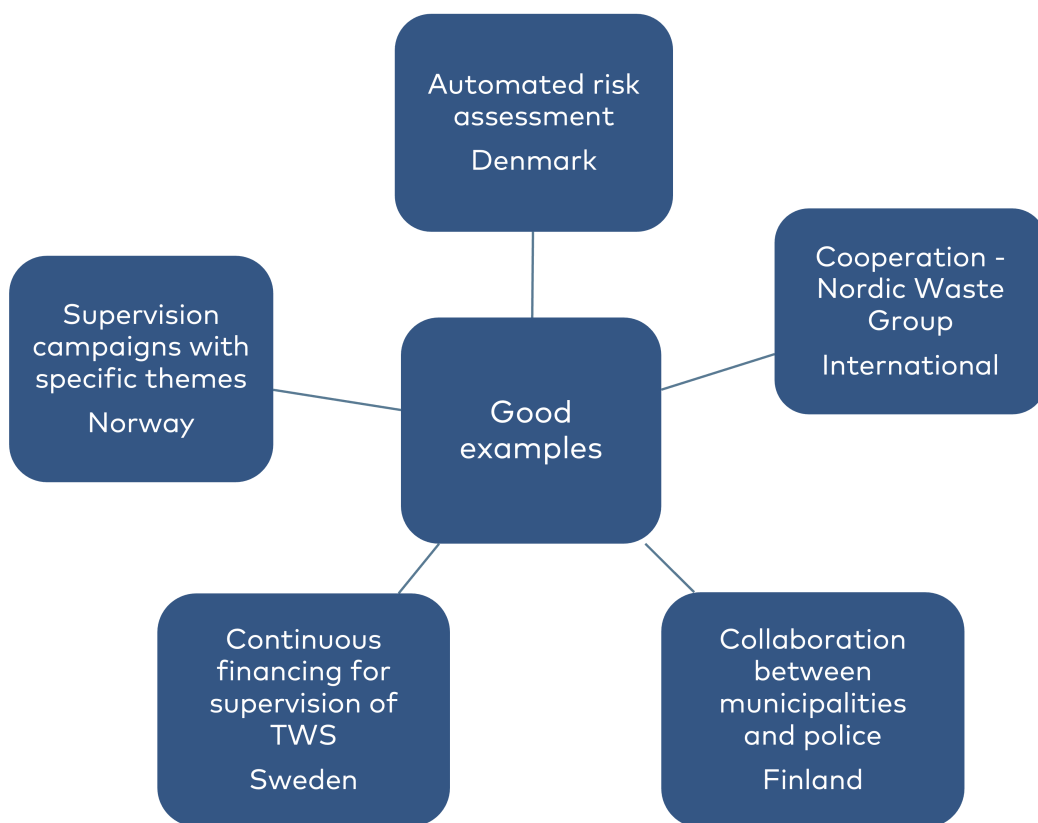


Figure 16. Presentation of cases of good examples.

6.10.1 Denmark – New system for automated risk assessment

In Denmark, there is a new system that will be implemented for automated risk assessment. It is a good example of how waste data can be used systematically to plan supervision. The system is nationwide, meaning that the conditions will be equal for the whole country. The differences in how waste supervision is prioritized by the municipalities can hopefully be leveled out, resulting in more equal conditions for operations in different parts of the country. As a lack of resources is a pressing matter for many supervisory authorities, the fact that the initial screening is done automatically streamlines the work and reduces the time spent on the selection of operations for supervision. However, there is some uncertainty associated with this system, as it is based on data delivered by the operators themselves.

6.10.2 Sweden – Continuous financing for supervision of transboundary shipments of waste

In Sweden, the County Administrative Boards receive specific, continuous financing for the supervision of transboundary shipments of waste. This allows them to have more proactive supervision than if the supervision was solely based on fees from supervision or handling of permits.

6.10.3 Norway – Supervisory campaigns

The Norwegian EA and the county governors regularly arrange supervision campaigns with a specific theme or focus. The focus can be on one type of operation of a certain type of waste management. An example from 2020 is a campaign focused on fires in waste facilities that was conducted in cooperation between the EA, the country governor, the local fire brigade, and the Norwegian Directorate for Civil Protection (DSB). These campaigns are seen as an effective way of conducting supervision while also bringing the industry together in improving an area of waste management, as operations are often prone to comparing themselves with their competitors.

6.10.4 Finland – Successful collaboration between municipalities and the police

In Finland, there is cooperation between municipalities and the police regarding environmental crimes. The cooperation allows the municipality to contact the police rather easily when they suspect issues during supervision. The police and the municipality share information with each other, discuss cases that need to be addressed and have a shared attitude about what is in the legislation. If the municipality has a case where they are almost certain of a violation, they can contact police partners and bring them to the site before they make an investigation request or an official report. Then they may discuss together if a formal investigation is necessary. This cooperation seems to work very well, but it is not formalized. The cooperation is based on individual connections between current employees at both authorities, so it can collapse if employees change jobs.

6.10.5 International cooperation

There already exist some structures for international cooperation concerning waste management, such as the Nordic Waste Group and the regular meetings for supervisory staff working with transboundary shipments of waste. As brought up in the study, participants of the workshop believe that this is a good opportunity to meet people and make connections, making it easier to know who to contact if any questions or issues arise in the future.

6.11 Areas of continuous Nordic cooperation

The aim of the study is to showcase good practices, build knowledge, and facilitate exchanges of experiences. Furthermore, it aims to foster continued cooperation between the Nordic countries. Therefore, the results of the study have culminated in two common challenges, that could be effectively addressed through collaborative efforts at the Nordic level. Table 9 summarizes the challenges and proposes actions for addressing these challenges within the Nordic cooperation.

Table 9. Summary of challenges and areas of continuous Nordic cooperation.

Challenges	Areas of continuous Nordic cooperation
<p>Availability of data and tracking of waste</p> <p>Improving waste tracking and data-sharing capabilities between authorities can facilitate better coordination and informed decision-making, ultimately strengthening oversight and accountability in waste management practices.</p>	<p>Develop methods and systems for:</p> <ul style="list-style-type: none"> • Increased waste tracking • Better availability for sharing data between authorities
<p>Lack of international cooperation and communication</p> <p>Improving international cooperation and communication among Nordic countries is essential for effectively addressing waste crime, as it allows for coordinated responses, better resource use, and targeted strategies for local and regional challenges.</p>	<p>Utilize national authorities and the existing international networks as a catalyst for:</p> <ul style="list-style-type: none"> • Developing forms for international cooperation on combating waste crime • Developing platforms and systems for international communication regarding specific cases on a regional and local level

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Appendices

Appendix A

[Interview questions](#)

Appendix B

[Agenda and questions, Workshop Supervision of Illegal Waste Management](#)

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