Green Inland Ports

Good Practices

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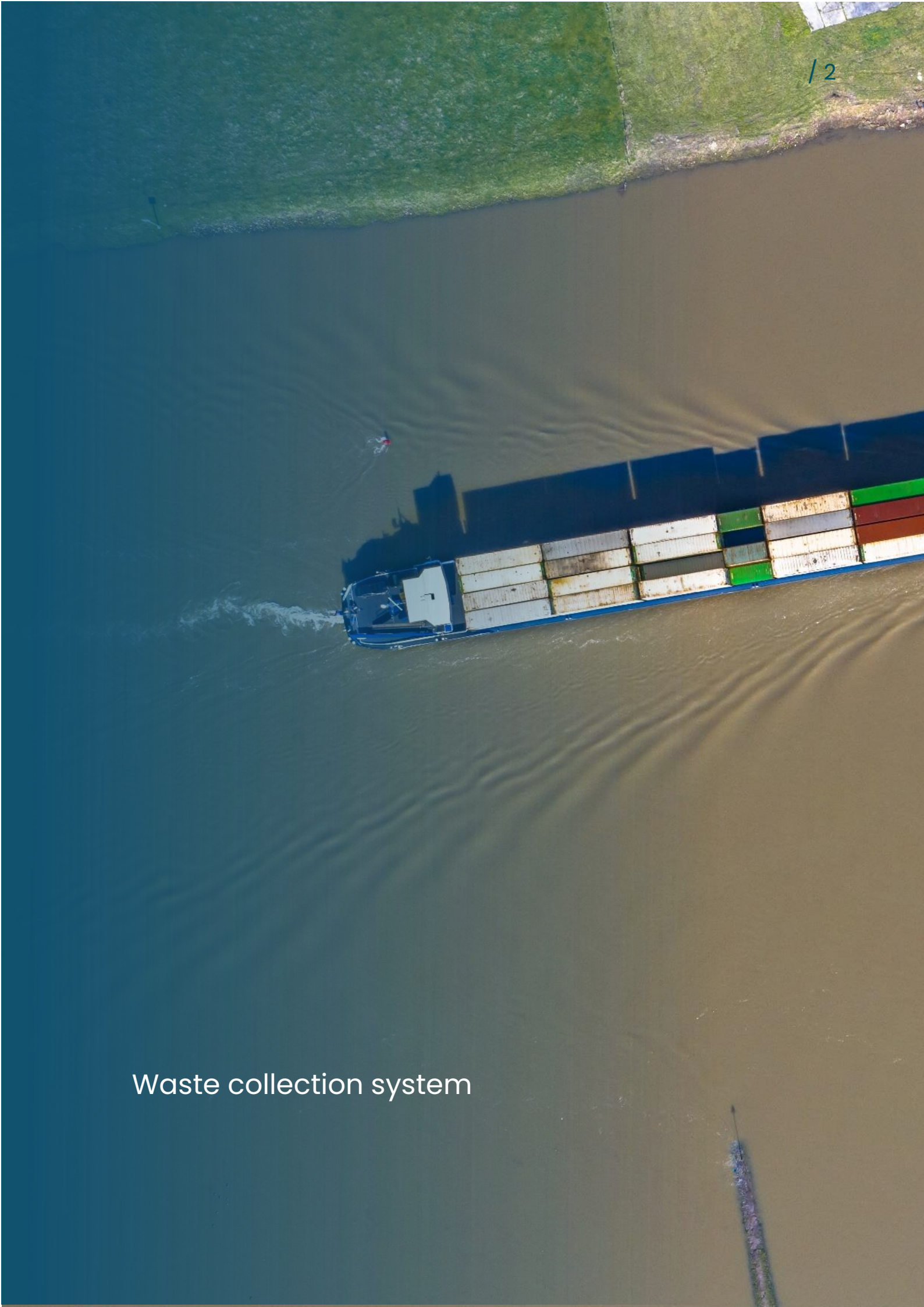

Waste collection system

Waste collection system

1.1 Description

Ships create different types of waste, such as oil waste, cargo waste, degassing/venting waste (vapour) and other waste (including domestic waste, sludge, slops and special waste).

When ships deliver their waste in ports, there are often costs involved in addition to the normal port dues. To prevent ship waste from ending up in the environment due to these additional costs, it is important that ship owners are encouraged to deliver their ship waste to the port. In fluvial areas (per river), there may be measures in place to prevent waste from being discharged into the river, which endangers water quality.

Examples

Convention on the Collection, Deposit and Reception of Waste from 'Navigation on the Rhine and Other Inland Waterways (CDNI)'

One example is the Convention on the Collection, Deposit and Reception of Waste from the CDNI, which entered into force on the 1 November 2009 in Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland. The CDNI bans the disposal of waste generated onboard ships or as part of their cargo. The CDNI promotes the prevention of waste generation, directs this waste to reception facilities throughout the waterway network, ensures funding under the 'polluter pays' principle. Additionally, supports compliance monitoring for waste discharge into surface water (CDNI, n.d.-a). The 2023 edition of the CDNI can be read here.

The Danube region

The Danube has a unique ecosystem with a high level of biodiversity. Transportation volumes across the Danube are expected to increase significantly in the future. At present, there are large differences and a lack of coordination in countries through which the Danube flows regarding the management of ship waste. The countries along the Danube have different social, economic and political systems. An increase in Danube transport will therefore result in increased environmental risks related to illegal discharge of ship waste into the Danube (Interreg & Keep.EU, 2024, Berger, H. et al., 2014). A strict regulatory framework or convention has not yet been implemented, but the project includes the following conducted activities (Danube Region Strategy, 2017):

- Preparation of coordinated ship waste management concepts at national level;
- Development of pilot activities for the collection and disposal of hazardous and non-hazardous ship waste;
- Creation of a basis for the development and implementation of an international funding model for oily and greasy ship waste; and
- Promotion of cross-border communication and knowledge transfer through harmonisation activities.

Niedersachsen Ports

Another example is the Niedersachsen Ports. To comply with the MARPOL regulation regarding marine pollution from ships, facilities have been set up in the ports to ensure professional recycling and disposal of ship-generated waste. In order to increase the number of ships delivering their waste to the ports, the Niedersachsen Ports require incoming ships to pay a lump sum for waste disposal. Only if the ships actually deliver their waste at the waste reception facilities in the port area, they will receive 70% of their lump sum back. This incentive ensures that ships do not discharge their waste at sea, but deliver it properly (Wadden Seaports, n.d.).

Examples of ports that have implemented waste management systems

The results of a survey (2024) of Green Inland Ports project show that many ports have already implemented a waste management system or are in the process of implementing a waste management system. Some examples from the survey are summarised below:

- The port of Lyon has set up a special plant that valorises waste.
- Port of Brussels has set up a department responsible for cleanliness and waste management within the port area, covering the canal and land.
- The port of Karlsruhe has implemented special bins for different types of waste to encourage a circular economy and recycling.
- Port of Switzerland (Basel) has a comprehensive waste management system for their own offices and for ships. This includes the collection and separation of glass, cans, PET, batteries, household waste, cardboard and paper.
- In the port of Belgrade, each port terminal or passenger terminal has a contract with a public company that provides waste management.
- Port of Seville has a comprehensive plan for managing waste generated within the port. The plan is accompanied by a zero-waste strategy where the goals is to recycle and recover 100% of port waste, avoiding landfill as much as possible.
- Many ports, such as Hutchison Ports Venlo, Port of Wittingen, Port of Aalborg, Port of Andernach have indicated efforts to differentiate waste streams.

1.2 Aim

Implementing a proper waste management system is important to prevent waste and hazardous materials from entering the environment.

As outlined in CDNI (n.d.-a) the objective includes increasing efforts in the prevention, collection, disposal, and reception of waste resulting from vessel operation to contribute to:

- Protection of the environment
- Improving the safety of inland navigation
- Improving water and air quality
- Contributing to the health and well-being of personnel and users

According to Interreg & Keep.EU, (2024), the aim of the WANDA (Waste management for inland Navigation on the Danube) project is to establish a sustainable, environmentally friendly and transnationally coordinated approach to ship waste management along the Danube by:

- Developing national concepts for ship waste management

- Implementing pilot projects
- Developing a financing model for the operating system based on the polluter pays principle

In the near future, restrictions imposed by state borders will disappear by creating a sustainable shipping waste management system along the Danube from a conceptual, operational and financial point of view (APPD, n.d.).

For port-level initiatives, the main goal in many cases is to comply with rules, regulations and conventions. Other goals include ensuring water and land quality and achieving a more circular economy.

1.3 Ports and opertors with a waste collection system

- Port of Karlsruhe
- Port of Mulhouse Rhine
- Port of Brussels
- Bremerhaven
- Niedersachsen Ports
- Groningen Seaports
- Port of Antwerp-Bruges
- Port of Rotterdam
- HAROPA Port
- Port of Switzerland (Basel)
- Compagnie Nationale du Rhône (Port of Lyon)
- Port of Dörpen
- DeltaPort (Wessel)
- Bayernhafen
- Port of Belgrade
- Port of Andernach
- Port of Hamm
- Port of Aalborg
- Port of Wittingen
- Port of Seville
- Port of Venlo
- Van Berkel Logistics

1.4 Stakeholders

- The port authority: They can initiate processes and requirements to improve waste management, such as the lump sum requirement implemented by Niedersachsen Ports. This requirement encourages ships to deliver their waste at the port instead of discharging their waste at sea or in the river. It also ensures proper waste handling agreements with local waste companies, or other waste handling and recycling agreements.
- Shipowners/ship's crew: This good practice can be implemented in many ways and will encourage shipowners/ship's crew to deliver in their waste properly and avoid discharging it in the water.

- Local waste companies: In most cases, waste handling is performed by a local waste management company. The company may be required to set up a treatment facility within the port area, which is especially convenient for large ports with a lot of waste generation.

1.5 Voluntary or mandatory

Many countries and river basins have legislation prohibiting waste and pollution ending up in rivers (Ministry of Transport Public Works and Water Management, 2010) (EC, 2000). This is mandatory in the countries concerned.

Since the 1 November 2009, the CDNI has entered into force in Belgium, Germany, France, Luxembourg, The Netherlands and Switzerland. The CDNI is a convention on the collection, deposit and reception of waste generated during navigation on the Rhine and other inland waterways.

- According to Article 6 of the CDNI, (2023), the receipt and disposal of oily and greasy ship operating waste is financed by a disposal fee levied on motorised ships, other than seagoing ships, that use gasoil. The amount is the same in all Contracting States and is based on the total cost of receipt and disposal, less any revenue from recycling the oily and greasy waste from the operation of the ship, and of the quantity of gas oil delivered.
- According to Article 7 of CDNI, (2023), for the receipt and disposal of other ship operating waste, the Contracting States will jointly establish a funding system that provides for the cost of receipt and disposal of such waste to be included in port or berthing dues or charged to the ship.
- According to Article 8 of CDNI, (2023), the charterer or consignee shall bar the costs of unloading the residual cargo, washing the vessel and disposing of cargo related waste in accordance with Part B of the Implementing Regulation. The discharge of waste or cargo from ships in the waterways referred to in Annex 1 is prohibited; exceptions to this prohibition are allowed only in accordance with the provisions of Annex II and its appendices.

1.6 Realised/potential impact

The realised or potential impact of this good practice depends very much on the type of waste, recycling possibilities, and the possibilities for reuse or recycling it in the surrounding area. Niedersachsen Ports, for example, sees a steady increase in the amount of ship garbage collected through their refund programme between 2020 and 2022. .

1.7 Possible obstacles

The European Federation of Inland Ports, (2016) lists the following barriers to the implementation of waste collection systems within (inland) ports:

- Many ports struggle with a lack of space to install collection and treatment units on their premises. One solution could be to install the treatment facilities (just) outside of the port area. However, this means that the transportation of waste has to be arranged.
- The development of waste treatment facilities can be hampered by a generally negative public opinion about waste. People (residents, recreationists, commuters, workers) are not always open to waste collection and treatment facilities, as they may be perceived as visual

and odour nuisances. This can hinder the development of business cases related to waste collection and treatment.
- Current waste management systems are quite regulated and complicated. An example is that the waste management company must issue a receipt before the ship leaves the port. This also applies when the ship leaves in the evening or at night. This can lead to administrative pressure and employees working day and night.
- The results of the Green Inland Ports survey (2024) show that ports generally find it difficult, on average, to implement this good practice (score of 5.3 on a scale of 1 (very easy) to 10 (being very difficult). However, there are not enough respondents without a waste collection system to make a statement about how interesting this might be for them.

1.8 Key learnings

- Rules and regulations for waste management in inland ports already exist at national, European and fluvial (river basin) level. Ports can design their strategies if they prevent waste from entering the environment.
- A very important factor is what happens to the waste after it is collected. Recycling and repurposing waste can contribute to a circular economy, adding value and reducing environmental harm.
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1.9 Sources

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