



# Actors and legislation

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OVERVIEW OF ACTORS AND LEGISLATION RELEVANT TO  
SEWAGE COLLECTION STATIONS IN CENTRAL BALTIC  
REGION

BATSECO-BOAT WORK PACKAGE 2, TASK 2.1

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## 1. Glossary

Black water	Toilet waste waters generated by humans
Central Baltic	Geographical area which includes land and sea areas around Northern Baltic Sea, southern Bay of Bothnia and Gulf of Finland
Deck fitting for boat toilet waste	Connecting part mounted on the deck of a leisure boat, where the pump-out nozzle penetrates to pump-out the boat toilet waste
Diaphragm or membrane pump	Pump which creates vacuum with the help of rubber film
Dry toilet	Toilet that operates without water flush
Eccentric pump	Eccentric disc pumps consist of a cylinder and pumping element mounted on an eccentric shaft. As the eccentric shaft is rotated, the pumping element forms chambers within the cylinder, which increase in size at the intake port, drawing fluid into the pumping chamber. The fluid is transported to the discharge port where the pumping chamber size is decreased. This action squeezes the fluid out into the discharge piping
Eutrophication	Process of where water is overly enriched mainly by nutrients (P and N) leading to excessive growth of algae and oxygen depletion.
Evacuation column	Vertical pipe for ventilation of a pump-out station's holding tank
Grey water	Water resulting from washing or cleaning, but does not contain toilet waste
HELCOM	HELCOM (Baltic Marine Environment Protection Commission - Helsinki Commission) is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area
Holding tank	Fixed tank mounted in a leisure boat where sewage or toilet waste is collected for temporary storage

Impeller or centrifugal pump	Pump, which uses an impeller (a vaned rotating disk) to move the fluid around in a circular movement. The rotational energy typically comes from an engine
Leisure boat	Watercraft or recreational craft with hull length commonly less than 24m, that are intended for leisure or sport use
Leisure boat harbour	Refers to home or guest harbour, port or marina
Nozzle	Cone shaped head or tip of a hose connected to the deck fitting of a leisure boat and with a hose to a pump-out station
Peristaltic pump	In a peristaltic pump, the fluid is contained within a flexible tube fitted inside a circular pump casing. A rotor equipped with rollers compresses the fluid as it turns, facilitating the movement of the fluid. Moreover, as the tube opens to its natural state after the passing of the cam fluid flow is induced to the pump
Pump-out station	Device designed to extract and collect sewage (toilet waste) from leisure boats
Sewage collection system	Network of different kind of pump-out stations for the use of boaters
Sludge	Semi-solid matter that is produced by a waste water treatment process or by a sanitation system
Waste water	Water polluted by human waste (incl black and grey waters) or by other human activity, excluding bilge waters generated by the water craft and collected separately

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## **2. Introduction**

### **2.1. The BATSECO-BOAT project**

Visiting leisure boat harbours in the Baltic Sea area fascinates both national and international visitors, many of whom explore the coastal and archipelago areas using small leisure boats. Boat tourism is an important and popular way to spend a summer holiday in archipelagos and coastal areas, which provide beautiful and peaceful maritime nature experiences. However, staying and living for weeks in a leisure boat requires similar kind of community services to what we usually have at home, but require a somewhat different organisation. Usually it is the small boat harbours that provide and sell most of these services to boaters.

The possibility of emptying toilet waste from leisure boats can be considered a fundamental service for boaters, which, when neglected, has a crucial impact on boaters' comfort during. However, this basic service suffers from problems, such as lack of easily accessible and functional sewage pump-out stations; non-harmonized sewage collection equipment; and lack of easily accessible information regarding location and functionality. It is also important to reduce visitor detours (having to make extra trips to other stations, when the nearest station is full or malfunctioning) by improving information regarding the pump-out station network and its' operability. Moreover, it can be difficult for international visitors to know what kind of waste handling and pump-out services that exist. Both Sweden and Finland have an extensive archipelago with an active leisure boat life where boaters commonly cross between the countries. Although toilet waste collection systems have been in place for several years, there is need to address both technical and managerial challenges. In Estonia, where the boating culture is very young, the coastline is open and waters are shallow, the coverage of sewage collection services is low. Thus, it is important to upgrade the service level in Estonia. Cross-border collaboration and exchange of experiences has the potential to facilitate mutual support, good examples and a more systematic approach to the management of toilet waste from leisure boats across the Central Baltic region.

The BATSECO-BOAT (Best Available Technologies of Sewage Collecting for Boat tourism) project is a collaborative project between three countries in the central Baltic region: Finland, Sweden and Estonia. The aim is to 1) increase tourism across the Central Baltic Region by investing in best available technologies for sewage collection and management and 2) create improved service facilities for leisure boats visiting small harbours in the Baltic Region.

By installing new pump-out stations, the BATSECO-BOAT project also contributes to the objectives of EUSBSR (EU Strategy for the Baltic Sea Region) in keeping the sea cleaner by facilitating collection of nutrients from toilet waste from leisure boats and thereby reducing a source of algal growth and eutrophication. The project supports the tourism industry with a cross-border approach that benefits both entrepreneurs and public authorities, and the Baltic Sea environment as whole.

The main results of the BATSECO-BOAT project include an upgrade of the sewage collection services in 18 leisure boat harbours in Estonia, in Finland and in Sweden. The upgrade is realised by

investments into the best available technology of sewage collection, including both new and renovated pump-out stations. This upgrading ensures good level of unified sewage collection services in the participating leisure boat harbours across the Central Baltic region for the next 15-20 years, way beyond the duration of BATSECO-BOAT project.

The BATSECO-BOAT-project continues for three years (2018-2020) and is coordinated by the Brahea Centre at the University of Turku. Other Finnish project partners are Keep Archipelago Tidy, the Swedish partners Ecoloop AB, UCV/Campus Roslagen and Norrtälje municipality and the Estonian partners are Hoia Eesti Merd (Keep the Estonian Sea Tidy) and Viimsi municipality. The BATSECO-BOAT project is funded by EU's Interreg Central Baltic program, the total budget of the project is 1,48 million euro.

## **2.2. Aim of this report**

The BATSECO-BOAT project aims to improve the capacity and service level of sewage sludge collecting in small leisure boat harbours along the Estonian coast and in Finnish and Swedish archipelago areas. The project focuses on identifying and investing in the best technical solutions for sewage collecting pump-out stations, highlighting the local needs and requirements, cost-effectiveness and user-friendliness.

Prior to installing collection stations, it is important to gain an understanding of relevant legislation and important actors who are involved in or affected by the installation of these stations. Different actors can be responsible for different parts of the procurement, installation and maintenance process. It is also important to consider location, technical issues and user friendliness. These latter issues are dealt with in separate reports.

This report will focus on describing actors and relevant legislation for Finland, Estonia and Sweden, with the example of Norrtälje municipality in Sweden as a case study. The aim is to gain an overview of relevant actors and legislation relevant to each project country, to learn from common challenges and examples of solutions and to conclude with recommendations and considerations for those planning to install sewage collection stations in one of the three countries.

## **3. Actors and relevant legislation in Finland**

### **3.1. Legislation at national level**

Legislation in regards of sewage waste from leisure boats fall under the National Ministry of Transport and Communication. The law itself was introduced early in 1979, but was modified and made more accurate, to the current version of the law from 2009.

It is stated in the Environmental protection act for marine transport ("*Miljöskyddslag för sjöfarten*" 1672/2009) that the release of untreated sewage water from a leisure boat is forbidden from all boats. This ban has been in force since 2005. If there is a water toilet onboard, the toilet must be

connected to a holding tank, which can be emptied at a suitable reception facility. In practise law means, if a toilet is used a holding tank or other such a device is needed (i.e. a bucket with a lid).

### **3.2. Reception facilities**

In the Environmental protection act for marine transport (1672/2009), it is also stated that a harbour that mainly serves leisure boats and has fifty (50) or more places for boats, is required to have reception facilities for waste coming from boats, including sewage waste. Boat place means that a fee is collected for using the place and in this case means one of the four following: 1) a mooring place in guest harbour; 2) a mooring place in home harbour; 3) a winter docking place or 4) a docking place. The municipality in which the harbour is located, is responsible to ensure that the law is implemented. In practise it is, however, quite difficult to ensure that all harbours have organised their waste collection accordingly.

The law allows for the harbour to cooperate with other actors by having joint facilities. If this option is used, it is crucial 1) to inform boaters clearly where the nearest reception facilities are located and 2) to have a mutual understanding detailing the cooperation. In case of cooperation the harbours are treated as one, with respect to waste reception facilities.

It is impossible to estimate how many sewage waste reception facilities that are presently in use in Finland, as there is no central system in which all are registered. Keep the Archipelago Tidy Association holds a list of reception facilities, and the list includes all the facilities that have been made known to the association. When writing this report, there were 154 stations in the coastal areas of Finland and 125 stations in the Finnish Lake District, altogether 279 stations. KAT updates the list every few years, and previously it was updated in 2016. The list can be found at: <https://www.pidasaaristosiistina.fi/ymparistotietoa/rehevoityminen/imutyhjennys/imutyhjennyspaikat>

## **2.3 Inspection**

### *2.3.1 Inspection of harbours*

Harbours for leisure boats need to make a waste management plan, in which all waste types and collection systems are planned. The plan needs to be approved by the local municipality's environmental officer. To ensure that the plan is followed accordingly is the responsibility of the municipality.

### *2.3.2 Inspection of leisure boats*

A boat (motor or sail) which is in length at least 5.5 metres long needs to be registered with the Finnish Transport Safety Agency (Trafi). Any watercraft where the engine power declared by the manufacturer is at least 15 kW, i.e. more than 20 horsepower, also need to be registered. The obligation to register a watercraft also applies to other motorized watercraft (even though the Recreational Craft Directive 2013/53/EU does not include them), such as personal watercraft, as

well as watercraft owned by the State and local authorities.<sup>1</sup> The register is maintained by Finnish Transport Safety Agency (Trafi) and in March 2018 there were 208 327 boats in the register, of which 188 339 were motorboats, 14 091 sailboats and 5 897 other boats.<sup>2</sup>

Most of the boats which need to be registered in Finland belong to boat clubs. Boat clubs hold registers of their members and boats that sail under the club's official flag. To obtain the right to

use club flag, the boat needs to be inspected yearly by a licensed inspector. Licenses to inspect are granted by the Finnish Sailing and Boating Federation (Suomen purjehdus ja veneily, SPV). Inspectors are not officials and work on a volunteer-basis. Their work can be best described as boat consultancy. They are there to help and advice and are widely seen as the key players in maintaining boat safety for users and the environment. Each registered boat is inspected annually. In the annual inspection, safety equipment is inspected: inspector and the boat owner go through together that everything is in place, as required. This annual inspection also gives the chance for the boat owner to ask guidance on using the boat, its equipment or any other boating/boat related issue.

## **2.4 Challenges experienced**

Since the law forbidding the release of sewage waste from leisure boats was introduced already in 2005, a few challenges have been identified. 1) The collection network is lacking in capacity, meaning that the locations of the stations are too scattered and thus the distance between them is too great; 2) a technical challenge is that the suction of many pumps is not sufficient enough to allow speedy emptying of boat tanks ; 3) the stations, especially the fixed stations are located in places which can be challenging to approach by bigger boats, the locations can also make queuing difficult and also impact petrol selling business if the dock is being occupied by a customer who is "just" emptying septic waste.

There are approximately 30 floating septic tanks in Finland, which are operated and owned by KAT. Most of these have been operating for ten or more years. The positive side of the floating stations is that, those can be placed in a location which serves many boaters. One problem with the stations which affects lifetime and maintenance of the stations, is that their material (aluminium meant for sea use) is starting to weaken from inside due to corrosion caused by the strong sewage waste inside the tank (as will be discussed in more detail in other reports resulting from the BATECO-boat project).

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<sup>1</sup> [https://www.trafi.fi/en/boating/watercraft\\_register](https://www.trafi.fi/en/boating/watercraft_register) (ref: 21.8.2018)

<sup>2</sup> email: Ville Räisänen, Trafi, 21.8.2018



## **4. Actors and relevant legislation Estonia**

Traditionally, Estonia does not have a very active leisure boat community, partly since for historical reasons as access to boats and sea was largely restricted during the Soviet era. During the 1990'ies interest grew, however, and there are now several yacht clubs and guest harbours in Estonia, although the boating season is shorter than in e.g. Sweden or Finland due to the lack of the protective environment of archipelago.

### **3.1 Actors and legislation at national level in Estonia**

Estonia is a contracting party of the HELCOM agreement, and thus, in principle there should be no disposal of sewage waste from leisure boats, and Estonian government has not formulated any additional national legislation on top of this agreement. Estonia also complies under the MARPOL convention, which in Annex IV, stipulates the handling of sewage waste from leisure boats and yachts (although it does not apply to leisure boats with a capacity of fewer than 15 people, and is therefore is of lesser relevance to this project).

The Environmental Board is responsible for receiving waste management plans from local harbours, while the Estonian harbours register is administrated by the Maritime Administration. Every harbour is obligated to register in an on-line database, which includes a registry of harbour master, contact details, and technical and service specifications of the harbour (including a waste plan). The Maritime Administration has the authority to administer sanctions to harbours who do not fulfil the requirements. However, there are harbours who choose not to register for fear of not being able to fulfil the service obligations as well as liability towards boat-owners in case of damage.

However, there is currently no national authority that has the responsibility to conduct regular inspections of small harbours to ensure implementation of the HELCOM agreement or other environmental regulations.

### **3.2 Actors and legislation at local level**

Under the HELCOM agreement, leisure boat owners are obligated to collect and empty their sewage waste correctly, while harbours are obligated to provide collection facilities. Harbours are obligated under the "Port Act" to have a waste handling plan in place and to submit this to the Estonian Environmental Board at national level.

However, since there is no national law or regular official inspections, it is not possible to ascertain the extent of the fulfilment of this waste handling plan, nor can it be established whether individual boat owners are aware of the obligation to correctly dispose of their sewage waste.

If a harbour is reported to the Environmental inspectorate, local environmental inspectors and national environmental inspectors can visit a site independently or together. However, this is for severe situations, not as a regular control.

### 3.3 Challenges and opportunities

There is a low willingness to pay for sewage collection services among the local boaters due to the short season and since many boaters mainly conduct day trips. Moreover, leisure boats in Estonia are seldom equipped with water toilets and holding tanks, since the majority have smaller boats. This gives harbours little reason to invest in sewage collection stations, since the opportunity for cost-recovery is low. Some harbours may invest in relatively cheaper, mobile technology in order to fulfil the requirements "on paper", however, in many cases these are not used by the boat-owners, due to the awkward handling involved.

Many municipalities lack capacity to prioritise the environmental questions, and often staff have other main prioritised duties. Thus, both knowledge and financial resources may be low for engaging in or inspecting sewage collection in harbours.

On the other hand, there is an interest from business and national government to promote tourism and visits by international guests to Estonia – *e.g.* leisure boaters from Finland and Sweden, as well as in interest to improve the services for local boat owners. As such, the standard of service as well as technology should be similar to that of the other countries in the Baltic region.

Harbours can apply for funding to invest in services, *e.g.* in pump-out stations from both Enterprise Estonia as well as the EU. The harbours do, however, need to be able to have the financial capacity to provide co-financing. By receiving support, the harbour also obligates itself to provide services at a standard that complies with the recommendations by the Ministry of Economic Affairs and Communications.

In summary, there is a lack of official inspection and sanctions on both national and local level as to whether the HELCOM agreement is being fulfilled in Estonia, although it is suggested that *e.g.* the Maritime Administration could follow-up on sewage handling as part of its' duties. While further knowledge is needed regarding attitudes and habits of boaters in Estonia, the desire by business and national government to promote Estonia as an attractive destination for leisure boat tourism, can serve as a driver for improving sewage collection.

## 5. Actors and relevant legislation in Sweden

Since the law forbidding the emptying of sewage waste from leisure boats was introduced at a later date than in Finland, there is an uncertainty among the Swedish actors surrounding how the law should be implemented, who is responsible for what parts and how to finance sewage collection facilities. Therefore, an in-depth study was conducted with Norrtälje municipality as a case study.

Apart from a review of legislation, the method involved three actors workshops: 1) the first one involved broad participation including several departments from the municipality, boat clubs, relevant national authority and technology producers; 2) the second workshop involved relevant departments from within Norrtälje municipality only, and focussed on the municipal organisation with the specific question of responsible actors for planning, procurement and maintenance of two collection stations; 3) the third workshop again involved broad participation from a range of municipal departments (environment and health, waste services, water services and the planner for sustainable development), Keep the archipelago tidy, representatives from boat clubs and marinas. The methods are described more in-depth in the document "guidelines for mapping of actors".

### 4.1 Actors and legislation at national level

At national level there is a law prohibiting the release of sewage waste from leisure boats (TSFS 2015:10 och TSFS 2010:96). The law was implemented in April 2015 and is therefore relatively recent (nearly four years at the time of writing this report). The Swedish Transport Agency is responsible for the implementation and control of the law and have the responsibility to inspect leisure boat harbours to ensure that these have the necessary sewage collection facilities.

The disposal of the sewage waste collected, is regulated by the national legislation and regulation relevant to waste disposal. Depending on how the sewage is collected it is affected by different regulations. If the sewage is collected and treated as sewage waste in accordance to decentralised or non-municipal sewage waste and is regulated by The Environmental Code ("*miljöbalken*"). If, however, the sewage reaches the municipal wastewater supply, it will be regulated by the laws that apply, as described below.

At national level there are three national authorities responsible for sewage waste, depending on how it has been generated and/or collected (Figure 1). The most relevant national authorities for sewage collection from leisure boats are the National Transport Agency and the Swedish Environmental Protection Agency.

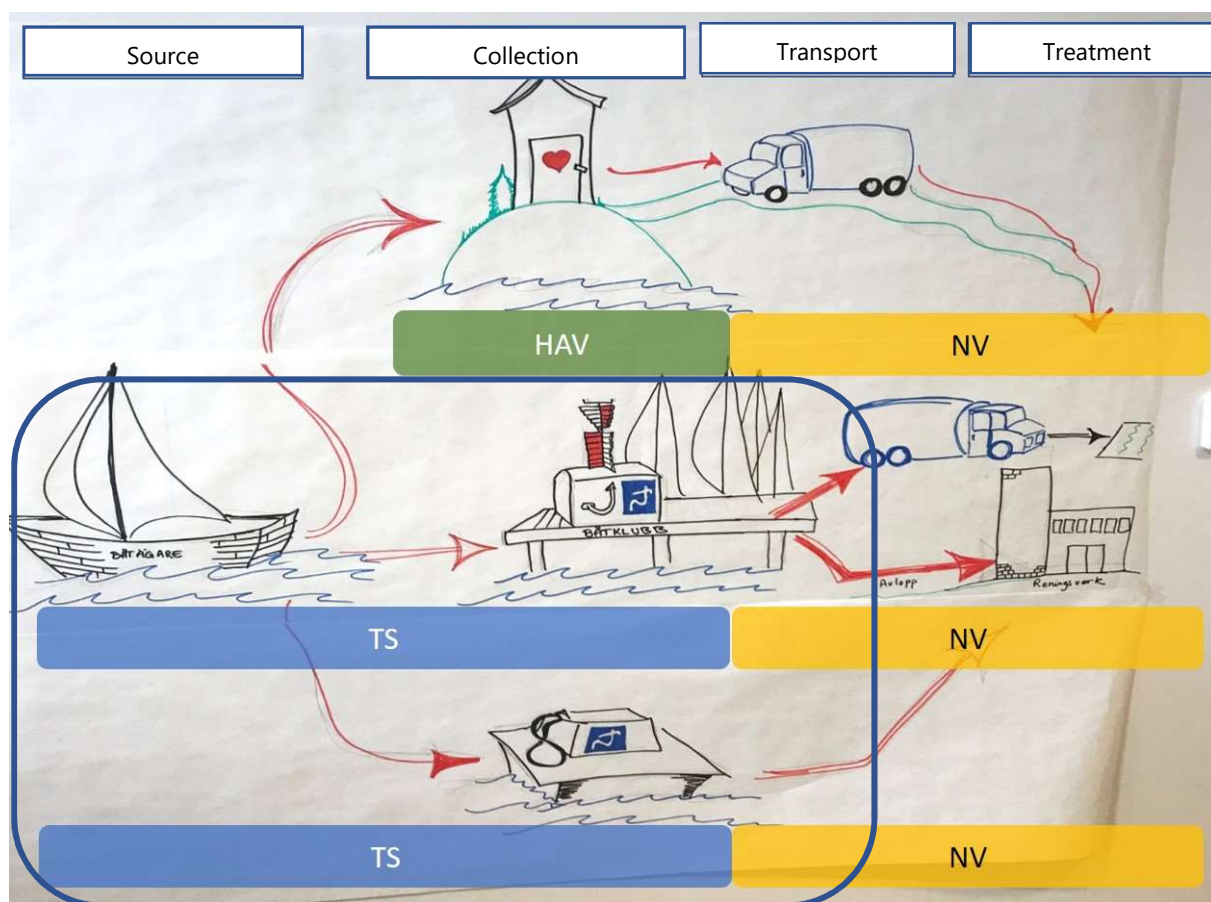


Figure 1. System description detailing boat, collection, transport and treatment. The national authorities responsible for each part are marked (HAV = the Swedish Agency for Marine and Water Management; NV= the Swedish Environmental Protection Agency; TS = the National Transport Agency), as well as a blue line indicating the focus of the BATSECO-BOAT project.

**The National Transport Agency** ("Transportstyrelsen", TS) is responsible to ensure implementation of the law prohibiting release of sewage waste from leisure boats into the sea (TSFS 2015:10 and TSFS 2010:96). The National Transport Agency is responsible for carrying out monitoring and control of leisure boat harbours, to ensure that they fulfil the law which stipulates their responsibility of receiving waste from leisure boats (SJÖFS 2001:13). Leisure boat harbours are obligated to provide reception facilities for waste, and they also have to have a waste management plan.

**The Swedish Agency for Marine and Water Management** ("Havs -och vattenmyndigheten", HAV) is responsible for national rules and regulation concerning decentralised household sewage systems according to the Environmental Code (*miljöbalken* 1998:808), chapter 9, Environmentally Hazardous Activity and Protection of Health. Control of decentralised household sewage systems are regulated by the General Advice from the Swedish Agency for Marine and Water Management (HVMFS 2016:17), as well as a mandate in the regulation of environmental inspection

(*miljötillsynsförordningen* 2011:13). The agency does not itself conduct inspections of the household sewage systems; this is generally conducted by local municipal authorities.

**The Swedish Environmental Protection Agency** (Naturvårdsverket, NV), is responsible for national law and regulation concerning waste management, as well as guidance and regulation for review of permission and inspection, according to the Environmental Code (*miljöbalken* 1998:808) chapter 15, Waste and the waste regulation, 2011:927. The national authority does not conduct any inspection of waste management activities; this is carried out by local municipalities and the regional authorities or County Boards (*länsstyrelse*).

## 4.2 Actors at local and regional level.

Important actors at local level are the leisure boat owners, boat clubs and interest groups, harbours as well as the various departments within the municipality, where the latter can hold multiple roles as e.g. landowners, environmental authority, responsible actor for waste collection, transport and treatment of the sewage waste from the leisure boats. Important regional actors include The Archipelago Foundation (*Skärgårdsstiftelsen*) and the Regional County Boards. The role of each actor is briefly described below, and a conceptual overview is given in Figure 2.

**Boat owners** are responsible for following the law prohibiting release of sewage waste from small leisure boats (TSFS 2015:10), and to dispose of their sewage waste at a pump-out station or sewage collection tank. Moreover, the general rules of consideration in the Environmental Code prohibit the release of general waste within Swedish marine territory. Possible implications include the risk of paying a fine or imprisonment of up to two years.

Owners of leisure boat **harbours** are responsible for construction, operation and maintenance of sewage pump-out/collection stations, *if there is a need* for such stations (SJÖFS 2001:13). It is also a possibility to collaborate with nearby leisure boat harbours and have a common station, but then a common waste management plan must be established, and the station must be appropriately located.

The definition of a leisure boat harbour according to SJÖFS 2001:13 is, "a place or geographical area which has been established to provide service to leisure boats, excluding small pontoons or simple mooring places". Thus, the definition includes boat clubs, municipal harbours, guest harbours and marinas, irrespective of the number of mooring places. It does not, however, include natural harbours.

Note that a landowner can be the same actor or different to the actor responsible for the harbour. For instance, in Stockholm archipelago, the Archipelago foundation owns several leisure boat harbours and is responsible for the sewage waste collection.

The **regional county board** can also be an actor that owns harbours, since it owns many of the national parks and reserves (although such harbours are often natural ones, and are thus excluded from the law). The regional county board also conducts inspections of waste management.

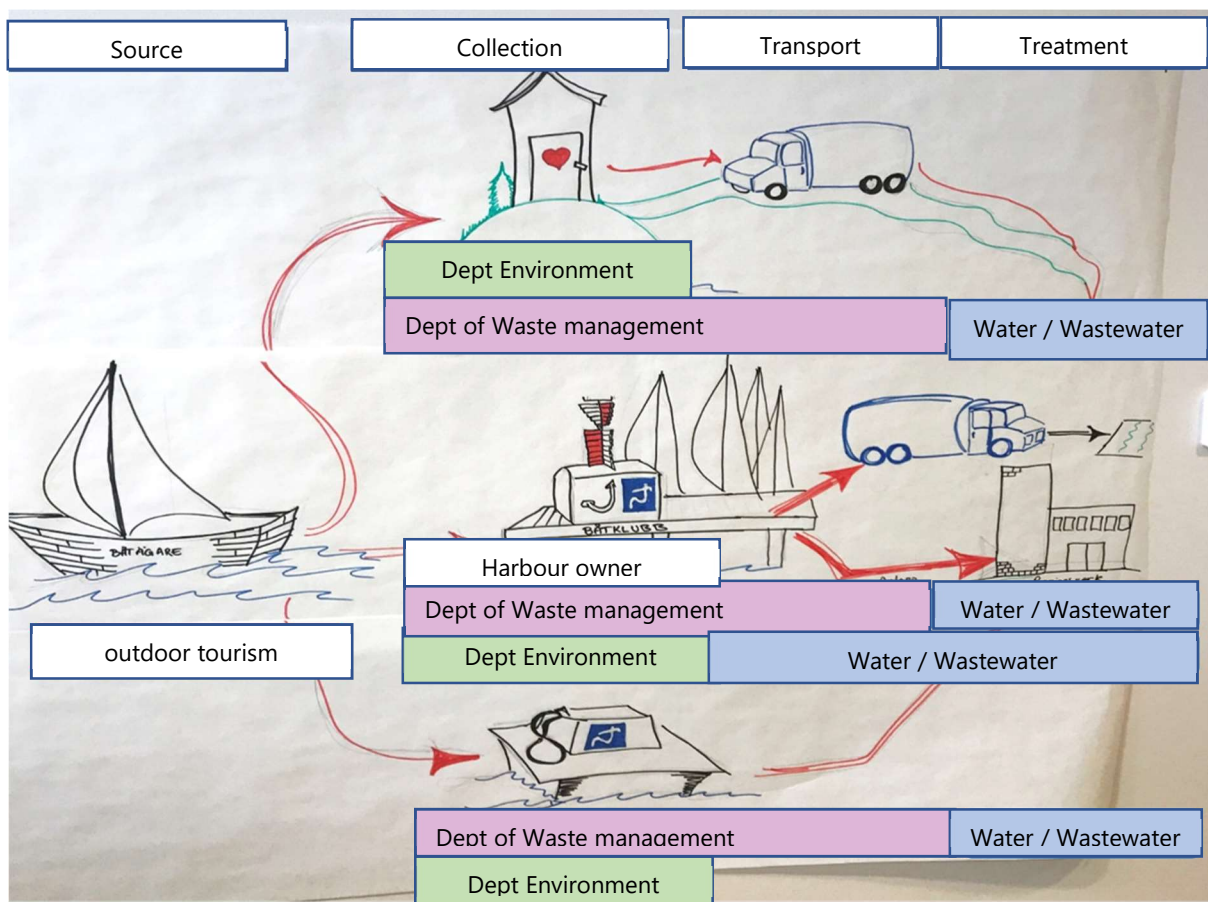


Figure 2. A conceptual overview of actors involved at local level, including local municipal departments (Colour coded: Department of Environment = green; department of Waste management = purple; Department of Water and Wastewater = blue).

The municipality is responsible at local level to ensure that the law regulating sewage waste management from leisure boats is followed. The municipality is also obligated to collect and treat the sewage waste.

The municipal environmental department is responsible for inspection of leisure boat harbours. The focus of the inspection is that there should be no hazard to the environment, but they are not authorized to inspect whether or not the harbour has a pump-out or sewage collection station as this is the jurisdiction of the National Transport Authority. They are also not responsible for inspecting the activities of boat owners. Different licences may be needed from the environmental department, for instance a licence to install a collection station or a decentralised wastewater system. According to the Environmental Code (1998:808), chapter 9 (environmentally hazardous activity and health protection), the municipality has a mandate and responsibility to inspect that activities at the harbour, including sewage collection stations, do not pose a hazard to the environment, as well as a responsibility to inspect collection and transport of waste. Licencing and reporting duty is regulated in (1998:889), the regulation of environmentally hazardous activity and health protection. Environmentally hazardous businesses are listed in the regulation of

environmental impact (2013:251). The municipal environmental department also conducts reviews of applications and inspections of decentralised household sewage systems in accordance with the Environmental code (1998:808) chapter 9, as well as regulation (1998:899) and the General Advice from the Swedish Agency for Marine and Water Management (HVMFS 2016:17) regarding decentralised sewage systems and household waste water.

The municipal waste management department is responsible for the waste collected and abide by the rules that govern waste management. The municipal waste management department establish local regulations according to the Waste Regulation Act ("*avfallsförordningen*" 2011:927), with support from the Waste Regulation Act 74-75 §, and the Environmental Code (1998:808, chapter 15, 9 and 11 §). The waste management department is responsible for transporting the waste to the municipal wastewater treatment plants for treatment.

The municipal water and wastewater management department is responsible for the municipal wastewater treatment plants and associated regulation. If the pump-out station or sewage collection station is directly connected to the municipal wastewater network, the sewage is classed as municipal wastewater. The work is also affected by the law of communal water services ("*lagen om allmänna vattentjänster*", 2006:412) and the municipality makes decisions according to ABVA, the regulations regarding use of communal water and wastewater systems.

### **4.3 Example: Norrtälje municipality**

One of the aims of BATSECO-BOAT was to investigate more in-depth the distribution of roles and responsibilities at Norrtälje municipality. This was achieved by organising three workshops, where discussions were held with the system map presented in Figure 1 as a basis:

- 1) the first workshop invited broad participation from different departments within the municipality, representatives from boat clubs, local interest groups and boat owners, national authorities and technology suppliers;
- 2) The second workshop had a focus on the internal distribution of responsibility within Norrtälje municipality and therefore included representatives from departments from within the department only;
- 3) The third workshop again invited a broader participation of actors from within and out with the municipality, including boat clubs and the Archipelago foundation.

Representatives from participating departments included the departments of waste management, water and wastewater, environmental protection, sustainability strategy, land and construction and the municipal ecology officer. A meeting was also held with the procurement department.

#### **4.3.1 Results from initial workshop**

A range of challenges were high-lighted during the initial workshop, but also opportunities for improvement (see Appendix). Challenges can be roughly be divided into a) user perspectives and communication and b) roles, organisation and financing.

#### a) User perspectives and communication

There is a need to increase access to pump-out and sewage collection stations in the archipelago, especially in the outer parts, where the sanitary waste is becoming problematic.

Communication with boat-owners was high-lighted as very important. There is demand for clear and visual messages, from e.g. municipality or the National Transport Agency, illustrating the positive effects of disposing sewage waste in a pump-out or collection station, rather than releasing it into the Baltic Sea. There is also a need to increase the willingness to pay for suitable toilets in the boats, as well as use of established stations. The participating boat clubs expressed eagerness to contribute to spreading information and messages to their membership. They also suggested information campaigns through the magazine "*Båtliv*", as well as presence at boat shows.

An important message was that it should be easy for leisure boat owners to do the right thing, *i.e.* to dispose sewage waste in a pump-out or collection station. A suggestion was that digital information should be included into existing digital maps or navigations systems, to enable boaters to find the nearest pump-out station.

#### b) Roles, organisation and financing

The roles and responsibility at local level for construction and maintenance of pump-out stations was viewed as unclear. Since there are many different actors who own harbours and carry out a range of activities and businesses, it becomes unclear who exactly is responsible.

Financing of the pump-out stations was also high-lighted as a major challenge, and there is a need to establish who and how these stations should be financed (e.g. should businesses of varying size take the cost, should it be financed through a boat-tax, municipal tax or national financing?). At the moment, the stations mainly present a cost for the owner, without a possibility of cost recovery. Other suggestions for financing were noted, including advertisement or state funds with a common authority to distribute financial resources. It was also suggested that pump-out stations be combined with other types of service (e.g. waste collection and access to toilets). This would require coordination of actors from both within and outwith the municipality.

#### 4.3.1 *Results from internal workshop with the municipality*

During this session the roles and responsibility of departments within the municipality were discussed, using and refining the conceptual overviews presented in Figures 1 and 2.

**National level.** The distribution of roles and responsibilities between national authorities was viewed by the representatives from the municipality as clear in principal. However, in practise, it was not clear what exactly the environmental department was responsible for inspecting versus the responsibility of the National Transport Agency. A challenge at national level is that the National Transport Agency is responsible for ensuring the establishment of pump-out stations, but lack



resources to inspect that this is implemented at local level. Moreover, the knowledge needed regarding demand or need for pump-out stations is found at local level with individual municipal staff, rather than with the National Transport Agency.

**Local level.** At local level the distribution of roles and responsibilities within the municipality were viewed as unclear. In Norrtälje municipality **the waste management department** has taken on responsibility for the establishment and construction of pump-out stations, which strictly speaking should fall outside their tasks (see discussion below).

**Norrtälje water and wastewater department** is responsible for treatment of wastewater. If the pump-out station is connected to the municipal network, the department is responsible for the transport of the sewage. Several pump-out stations are directly connected to the municipal wastewater network. The connected stations do not measure the volume of sewage received, and a question for the department is that of capacity.

**The department for construction and environment** is responsible for inspection of boat clubs according to chapter 2 in the Environmental Code ("*miljöbalken*"), if the activity can be considered as hazardous for the environment. The department is responsible for inspection of decentralised wastewater systems and review and grant permits for pump-out stations. In Norrtälje the department had not inspected boat clubs prior to 2018, but was planning to initiate such inspections.

In the conceptual overview (Figure 2), two important departments were missing: **the department for Land and construction** and the **department for development and economic growth**. A lot of knowledge concerning earlier projects and e.g. localisation of previous stations is connected to a member of staff at the department for land and construction (although that department has no official role connected to pump-out stations). Conversely, the department for development and economic growth is responsible for rural and coastal development, however questions concerning leisure boats are not included in this. However, in 2018, a climate and environment program was established, which also includes the collection of sewage waste from leisure boats, and there is a municipal *sustainability planner* responsible.

#### *Discussions held regarding roles and responsibilities within Norrtälje municipality*

**The waste management department** in Norrtälje is responsible for transport of sewage from pump-out stations located by piers or boat clubs not connected to the municipal wastewater network, as well as transport of sewage from floating pump-out stations. The collected sewage is transported for treatment by the municipal wastewater treatment plant. The department is also responsible for the collection of waste in the many waste collection stations through-out Norrtälje archipelago.

The department has since the 1970s been responsible for establishment, construction and maintenance of several pump-out stations (as well as land-based toilets), although, according to the workshop participants, this is more a planning question which should really be the responsibility of other departments within the municipality. The waste management department

has also been an active partner in earlier EU-funded projects, e.g. "Act for my Baltic Sea", where new pump-out stations were established.

Many of the established pump-out stations are probably not located in the optimum place and are difficult and expensive to operate and maintain. Therefore, the maps over leisure boat movement within the archipelago are of special interest (see separate report) for the planning and establishment of new pump-out stations.


A challenge is the lack of income in order to recover costs for the pump-out stations. Unfortunately, it is difficult to cover the costs, both for pump-out stations and toilets placed to serve the active outdoor tourism, including leisure boat community. This is problematic to the waste management department, since it in practice means that the households and other customers of the waste management department essentially pay for the costs incurred by boat tourists, where many are likely to come from outside the municipality. Therefore, dialogue with the department for rural development and economic growth are important in future planning. It was also noted that guest harbours are only allowed to take a general fee, where the emptying of sewage sludge is included. Moreover, if a fee for emptying sewage sludge were too high, it might discourage correct disposal of the sewage. The question was raised as to whether a tax could be a way to organise the services in order to provide access to the archipelago.

Finally, the question was raised of who within the municipality is responsible for informing boat owners and boat clubs of their responsibility to correctly dispose of their sewage waste, and collecting the sewage waste, respectively.

#### *4.3.2 Planning of two new stations*

The following question was discussed: who within Norrtälje municipality will be responsible for 1) planning, 2) implementation and 3) operation and maintenance of the two pump-out stations within the BATSECO-BOAT project? Together an overview of important actors for each step was constructed (Table 1). The table shows that, in this case, again the waste management department will be the main responsible party for all the steps involved in establishing the two stations. Other relevant departments where those of development and economic growth/planning, construction and environment, and the department of water and wastewater. If the pump-out stations are placed so that they can be connected to the municipal wastewater network, the department of water and wastewater should be involved in the stages of planning, implementation and operation and maintenance. The department of construction and environment should be involved if the pump-out stations will be floating or otherwise disconnected from the municipal wastewater network. An important actor, who is not necessarily from within the municipality, is the relevant land-owner of the land/water where the pump-out station will be located. Other important actors are the boat clubs, as well as involved entrepreneurs for construction, operation and maintenance.

Table 1. Actors involved in planning, implementation and operation and maintenance of pump-out stations

	1. Planning	2. Implementation	3. Operation and maintenance
			
1	Waste management dept	Waste management dept (public procurement)	Waste management dept
2	Planner from dept of development and economic growth	Dept of construction and environment (permission)	Dept of construction and environment (inspection) or dept of water and wastewater (if connected to network)
3	dept of water and wastewater OR Dept of construction and environment	(possibly dept of water and wastewater)	-
4	Land owner	Land owner	-
5	Boat owners, boat clubs, tourists	Relevant entrepreneurs	Relevant entrepreneurs

#### 4.3.3 The ideal situation

The participants at the internal workshop were asked who would be responsible for planning, implementation and operation and maintenance in the ideal situation, if the municipality could start “from scratch”. The response was that the departments for culture and tourism and/or the department for development and economic growth would take responsibility for the planning and establishment of the pump-out stations as well as operation and maintenance. The waste management department would be responsible for the transport of sewage, while the water and wastewater department would be responsible for treatment, as illustrated in Figure 3.

Since there was general agreement that the question of sewage waste management from leisure boats was not handled by the correct departments, it was discussed where it should belong. The question is partly political and therefore an overview of the situation, *i.e. “current state of sewage waste from leisure boats”* should be compiled and presented to the municipal council and possibly to the political decision-makers. There is a great need for a description of the current state, followed by a political decision for the way forward.

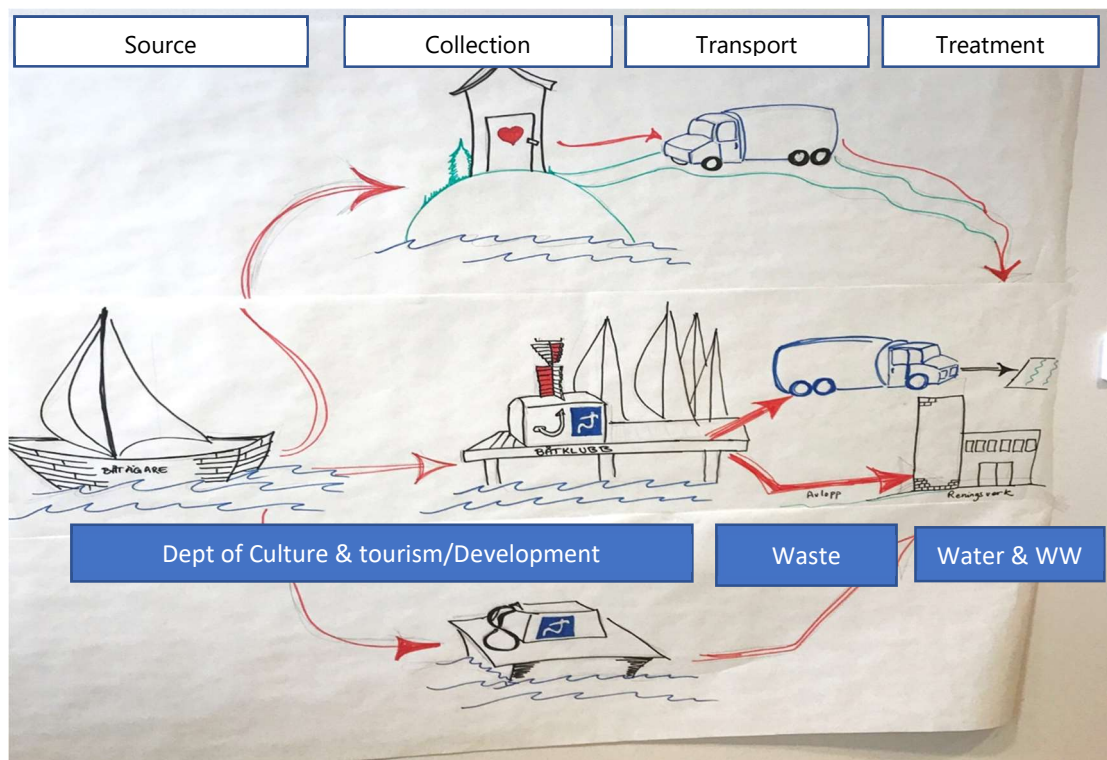


Figure 3. Conceptual overview of responsible actors within the municipality in an ideal scenario.

#### 4.3.4 Lessons learned from Norrtälje case study

One of the key messages from discussions with boat owners, boat clubs and a range of actors from within the municipality, was that although responsible actors and regulation may appear clear at national level, in practise, the roles and responsibilities between different implementing actors and those responsible for inspection, is not clear.

Certain issues can be resolved through improved communication, especially that of the responsibility of boat owners to dispose of their sewage and other waste correctly, as well as the responsibility of boat clubs to provide sewage collection services.

However, the questions surrounding financing, planning, construction and operation and maintenance of pump-out stations requires cross-sectoral work and collaboration at municipal and regional level, as well as political decisions.

## 6. Summary of challenges and opportunities

Several opportunities and challenges were identified for all the participating project countries. In Finland the legislation prohibiting the disposal of toilet waste in the Baltic Sea has been in place for the longest of the three countries (since 2005), while in Sweden the ban was implemented 2015, and Estonia, currently has no national legislation in place on top of the HELCOM agreement. Consequently, sewage reception facilities have not been widely installed in Estonia.

In both Sweden and Finland harbours must provide sewage collection facilities for visitors. In Finland, this applies to harbours with more than fifty mooring places, while in Sweden the definition is more openly described as “*when there is a need*”. In both countries it is an option to collaborate with near-by boat clubs or harbours to have a common sewage waste plan and to share sewage collection facilities.

In Finland the municipality ensures that the law is implemented, while in Sweden the national authority (The Swedish Transport Agency) is responsible. However, in both countries the municipality is responsible for receiving the sewage generated. Interestingly, boats who belong to a boat club in Finland are obligated to receive an inspection by a licensed inspector in order to sail under the flag of the boat club. This is an opportunity to review safety equipment, for boat owners to gain useful advice, including regarding questions of sewage waste collection. This might be an interesting model for other countries to adopt.

Challenges	Opportunities	Comment	S	F	E
Legislation. - viewed as unclear - difficult to follow-up	- information to boaters, clubs and local authority - active visits or delegation by national to local authority	In Estonia the implementation of the HELCOM agreement is not inspected	y	n	y
Land issues	Use municipal land or water	Legislation such as coastal protected areas must be considered	y	y	y
Cost of stations: establishing and maintaining	-cost recovery through advertising? - state financing? - boat tax? - harbours? - user fee? - regional tax for archipelago?	There are several ways to cover costs of stations, but an investigation into the different options with their consequences would be advisable	y	y	y
Lack of collection capacity		Too few stations, too geographically scattered	y	y	y
Encourage boat owners to correctly dispose of sewage waste	- Inform through boaters magazines - information available through boat clubs - well located stations - digital maps of stations	Related to attitude, location, technical issues, information etc (i.e. many of the challenges described below)	y	y	y
Technical issues		Suction	y	y	?
Stations badly located		Problematic for larger boats	y	y	?
Maintenance and life-time issues with stations	Service agreements	Corrosion of tanks, difficulty to locate spare parts, lack of knowledge of how to fit parts	y	y	?
Boaters do not know how to use pump-out stations	- voluntary certified inspectors - serviced stations		y	n	?

\*S=Sweden, F = Finland, Estonia = E. Y= yes, N = not that relevant, ? = insufficient knowledge of situation

## 7. Appendix

Challenges and opportunities identified by workshop participants which included representatives from Norrtälje municipality, national authority, boat clubs, boat owners and technology suppliers.

Utmaningar	Förslag på lösningar
Brist på toaletter leder till nersmutsade skärgårdsöar	<p>Uppmuntra att folk använder befintliga toaletter och tömningsanläggningar.</p> <p>Bygg fler anläggningar</p> <p>Fler toaletter i yttre skärgården, gärna med <i>latrin och soptömning</i></p> <p>Kommunen ansvarig, men kultur o fritid måste engageras</p> <p>Sortering av burkar o flaskor vid sophantering</p>
Att få båtägare som har toa att tömma	<p>Skriv i "båtliv", gör reklam för befintliga anläggningar, visa hur det ser ut när man tömmer (i sjön – konsekvenserna).</p> <p>Båtklubbar kan användas som reklampelare</p> <p><i>Lägg tömningsstationer så att de är lätta att lägga till vid.</i></p> <p>Digitala sjökort med knapp som ger distans och färdledning till närmaste tömningsstation.</p>
Finansiering: i nuläget är tömning en investering som inte genererar intäkter, utan snarare blir en utgift	<p>Reklamfinansiering</p> <p>Statligt anslag för utbyggnad av tömningsstationer, som kan sökas av: klubbar, kommuner, privata aktörer i turistnäringen. Tex genom naturvårdsverket.</p> <p>Öppna stationer som alla får använda</p> <p>Slå fast vem som ska finansiera (verksamheter per storlek, båtskatt, offentliga medel?... förorenaren betalar)</p>
Begränsade medel för investeringar i tömningsstationer och toaletter, liksom drift och underhåll, gör att det är svårt att lokalisera dem på bästa plats	Etablera lämplig aktör att fördela medlen, placera och underhålla (latrintömningsstationer)
Attitydförändring behövs!	<p>Informationskampanj med tydliga visuella budskap om att latrintömning är bra och måste få kosta. Öka betalningsviljan hos båtägare och kommuninvånare för att göra investeringar på 2-5 års sikt (Gemensamt Ansvar: kommun, transportstyrelsen)</p> <p>Info på symposium vid båtmässan</p> <p>Info i "båtliv" om BATSECO</p>