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Antifouling for leisure boats in the Baltic Sea

Mapping the legal situation - National Study: Finland

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Preface

This report has been elaborated as part of the CHANGE research project (http://changeantifouling.com/) funded by the BONUS programme and national research funding institutions, in this case the Academy of Finland. The overall objective of the interdisciplinary CHANGE project is to reduce to a minimum the supply of toxic compounds from antifouling paints used on leisure boats in the Baltic Sea by changing antifouling practices on leisure boats into a sustainable consumption of antifouling paints and practices. As part of the CHANGE project, a mapping of EU legislation as well as national legislation in Sweden, Finland and Denmark has been carried out. This report maps the Finnish legal framework regarding antifouling paints on leisure boats as well as for the use of alternative techniques.

The report starts with an introduction to the overall governance structure of the legislation and the relevant authorities. It then is divided into four areas of law relevant to antifouling paints and practices, including regulation of environmental quality, products, waste management and other environmental issues as well as contaminated land and sediments. Furthermore, the report includes a table containing an analysis from the actors' perspective.

The report is based on a legal-dogmatic research on applicable national legislation based on relevant sources of law as well as relevant reports, articles etc. Finnish legislation is accessible in both Finnish and Swedish languages at the national database http://www.finlex.fi.

The report was finalised in June 2015.

1 Introduction

Sailing and boating is a popular recreational activity in Finland. One of the largest umbrella organisations for boating in Finland is Suomen Purjehdus ja Veneily ry (*Finnish Association of Sailing and Boating*) and has some 330 society members (boat and yacht clubs), which in turn have approximately 60 000 individual boaters and boat owner members. Most of the boat and yacht clubs have their own home marina.[1]

There is no available statistics on the total number of marinas in Finland. The environmental administration has, however, access to an extensive soil condition database, the so-called "MATTI-register", which provides an indicative number of marinas; 209 of which 155 include winter storage. In Helsinki, there are several dozen marinas and approximately 12.000 mooring spots of which one third are available for lease from the City of Helsinki. The remaining are leased by Helsinki-based boat and yacht clubs. Visiting marinas are predominantly managed by private boat clubs.

The issue of contamination by antifouling substances was discussed in connection with contaminated soil being the focus of attention in Finland since the mid-1980s[2]. Due to the hazardous chemicals used in boating (mainly TBT), the focus of attention has extended to cover also boating and boatyards, which in turn led to increasingly detailed investigations of contaminated sediments and the spreading of the same.

The regulatory framework covering antifouling paints and their use in Finland is based on both national law and EU law. It is rather disperse and covers certain general aspects of activities, products and consequences of the use of antifouling substances. This report investigates the said framework and proposes certain measures by which the negative impacts of antifouling paints could be minimized.

2 Governance Structures

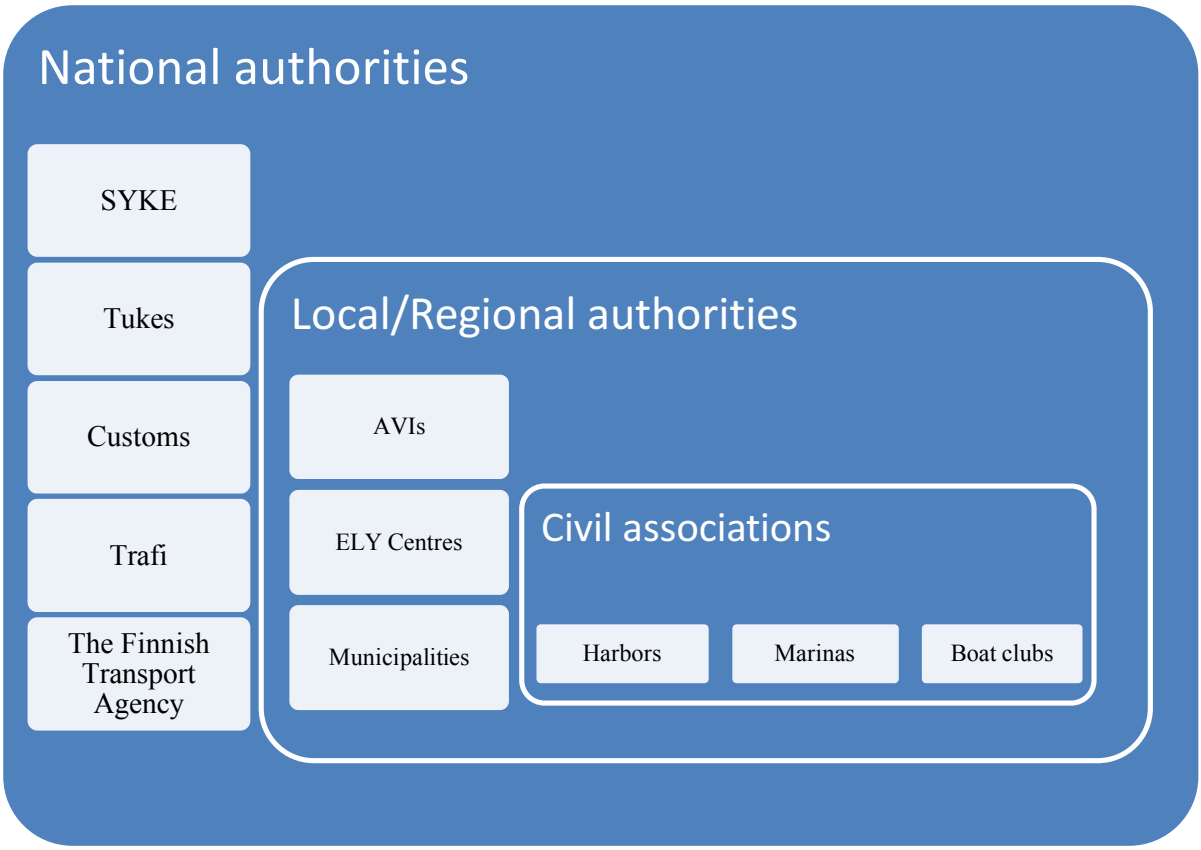
2.1 Summary

The Finnish environmental and maritime legislative system is a combination of general legislation and sectoral more detailed acts. The general environmental legislative act, the Environmental Protection Act (527/2014), lays down the main principles for environmental protection and general regulation on environmental damage. The maritime management and protection is regulated by sectoral acts separate from the Environmental Protection Act of which the main acts are the Marine Protection Act (1415/1994) and the Maritime Environmental Protection Act (1672/2009).

The authorities connected to protecting the marine environment can be categorized as the authorities setting the environmental quality standards and the authorities responsible for supervision and enforcement of such standards. The ministries are responsible for the national legislation while several national and local authorities are responsible for the supervision and enforcement of the same.

[1] Three different types of marinas are identified according to their use: 1) "Home harbors" are marinas from where a boat owner either owns or leases a mooring spot where the boat is kept. The home harbors are usually managed by municipalities, boat clubs or commercial operator. The boats are typically kept in these harbors during the boating season; 2) Visiting harbors are intended for boat camping and sailing and where the boaters may spend the night, maintain the boat or visit stores. Typical visiting marinas are guest marinas, service marinas, open docks or natural harbors; 3) Safe havens are harbors where one can look for shelter when needed for example in case of bad weather or boating equipment malfunction.

[2] An extensive organized surveying of contaminated land areas was carried out under the so-called "SAMASE project" between 1989 and 1994 and in which information on 10.000 potentially contaminated land areas was collected. By 2013, the number of such sites, some of which have already been remediated, had more than doubled to 23.850.



2.2 The environmental and maritime legislative system

The system of Finnish environmental legislation can be described as a hybrid between a system based on a general legislation (such as the Swedish Environmental Code) and a system of separate sectoral legal acts working as customised parcels within their respective area of applicability. The Environmental Protection Act is the general environmental legislative act which implements Directive 2010/75/EC on industrial emissions. The main objectives of the Environmental Protection Act are to prevent pollution of the environment and the generation of waste, to combat climate change and to support sustainable development. The act and the Environmental Protection Decree (713/2014) is applicable to industrial activity and other activity which may cause environmental damage, and which pursuant to the act may be subject to either an environmental permit or a lighter registration procedure with the municipal environmental board. The Finnish constitution stipulates that provisions regarding rights and obligations of persons (physical and organised) must be issued by means of an act. This means that the use of Decrees in the environmental area is thus confined to mere specification of provisions in higher level Acts.

The Environmental Protection Act contains specific rules for certain situations, such as for example the prohibition of pollution of soil and ground water. The act sets out the main principles for environmental protection, for example, Best Available Technique (BAT), Best Environmental Practices (BEP) and the Polluters Pay Principle (PPP). In addition to an environmental permit under the Environmental Protection Act an activity may require other permits, and/or be subject to other requirements under other sectoral legislation. For example, if activity which is subject to an environmental permit may affect a water body, a water permit pursuant to the Water Act (587/2011) may equally be required. In such case, the environmental permit and water permit are issued as a combined permit.

Within the Finnish legislative system, maritime management and law is treated as a separate matter from environmental law and environmental management and protection. The main legal acts in maritime protection is the Marine Protection Act (1415/1994) and the Maritime Environmental Protection Act (1672/2009). The former, the Marine Protection Act, governs the actions of Finnish citizens, organisations, vessels, aircrafts and offshore units everywhere outside the Finnish exclusive economic zone. The act entered into force in 1995 and implements nationally certain obligations of, inters alia, the HELCOM and the OSPAR agreements, and has thus as its starting-point the prohibition of contamination of the sea. The latter, the Maritime Environmental Protection Act is applicable to vessels which travel in Finnish water areas or in the Finnish exclusive economic zone, and to Finnish vessels outside the said areas, and to the reception of waste generated by normal operation of vessels. The Waste Act (646/2011) becomes applicable to such waste when it has been transferred to an onshore waste management facility. The Act on Waterborne Traffic (463/1996) governs non-commercial waterborne traffic, and the purpose of the act is to promote the navigation safety and prevent inconveniences to the environment, fisheries, recreation or other public or private value caused by the use of vessels.

2.3 National authorities

2.3.1 The Finnish Environment Institute (SYKE)

The Finnish Environment Institute ("SYKE") monitors the implementation of the POPs Regulation and the export of banned or severely restricted chemicals regulated by the Rotterdam Convention[3] on the Prior Informed Consent (PIC) procedure and the related EU POP and PIC regulations. SYKE is the designated national authority under the above-mentioned legal acts. Furthermore, SYKE is the primary supervisory authority with respect to the monitoring of compliance with the provisions set out in or issued under the Maritime Environmental Act regarding discharges from ships in Finland's territorial waters and within Finland's exclusive economic zone.

2.3.2 The Finnish Safety and Chemicals Agency (Tukes)

The Finnish Safety and Chemicals Agency Tukes is the Finnish national agency responsible for the chemicals surveillance and an important partner of the European Chemicals Agency. Tukes became operational on 1 January 2011 and is the key player in the promotion of chemical safety.

The Chemicals Act (599/2013) centralizes certain commercial chemical control tasks to Tukes. Its duty is to control the compliance with regulations and restrictions concerning chemical products in accordance with EU legislation, i.e. the REACH Regulation, the CLP Regulation[4], the Detergent Regulation[5], the Biocidal Products Regulation and the POPs Regulation. Tukes is the national competent authority pursuant to REACH, CLP, Biocidal Products and Detergent Regulations, and is equally responsible for organising the related information services.

2.3.3 Customs

Finnish customs ensure that imported and exported chemicals and items containing chemicals meet the requirements set in EU chemicals legislation and the Chemicals Act.

2.3.4 The Finnish Agency for Transport Safety (Trafi) and the Finnish Transport Agency

The Finnish Agency for Transport Safety (Trafi) is the authority for maritime safety. As mentioned above, Trafi manages also the watercraft register and the sailor register in Finland. The Finnish Transport Agency is responsible for the maintenance and development of the network of waterways

[3] The Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade was adopted on 10 September 1998.
[4] Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation).
[5] Regulation (EC) No 648/2004 of 31 March 2004 on detergents (Detergents Regulation).

in Finland. There are slightly less than 8 300 kilometres of coastal routes and 8 000 kilometres of inland waterways maintained by the Transport Agency.

2.4 The regional authorities

2.4.1 The Regional State Administrative Agencies (AVI)

There are six Regional State Administrative Agencies (AVI) (Fi: *Aluehallintovirasto)* in Finland. The agencies work in close co-operation with municipal environmental permit authorities and aim to strengthen the implementation of environmental protection and environmental sustainability. They are the main permitting authorities in matters under the Environmental Protection Act and the Water Act. These acts specify the activities for which permits are required and whether the matter is handled by the AVI or by the municipal environmental protection authorities (on which see further under Section 2.5 below).

2.4.2 The Centres for Economic Development, Transport and the Environment (ELY)

The regional Centres for Economic Development, Transport and the Environment (ELY Centres) (Fi: *elinkeino-, liikenne- ja ympäristökeskus*) monitor the state of the environment and its changes in co-operation with the Finnish Environment Institute. The ELY Centres have certain central tasks with regard to the compilation of the river basin management plans. The centres function as the executive authorities in water management, assess the ecological state of surface waters and assess the anthropogenic activities' impact on waters. The centres are equally responsible for implementation of the plans' programmes of measures and for monitoring the execution of the proposed measures which belong to their field of operation. The said implementation is equally monitored by the ELY Centres in connection with their tasks within their role as supervisory authorities of environmental and water permits. In addition, when a notification on the assessment of contaminated soil shall be provided pursuant to the Decree on Assessment of Contamination and the Necessity of Remediation (214/2007), the notification shall be provided to the applicable ELY Centre.[6]

Furthermore, the ELY Centres moreover monitors compliance with the Maritime Environmental Protection Act and with the provisions issued on the basis of it, insofar as the provisions relate to: 1) waste management planning at harbours; 2) marina reception facilities for ship-generated waste; and 3) fees relating to waste management at marinas. In particular, supervisory duties are also directed at commercial shipping marinas which require an environmental permit in accordance with the Environmental Protection Act.

2.5 The municipalities and their environmental protection authorities

Pursuant to the Environmental Protection Act, the Water Act and the Act on Municipal Environmental Administration (64/1986), certain environmental protection and water management related permit and enforcement powers have been conferred to the environmental protection committee or an equivalent environmental protection body of a municipality or city. The said committee is mainly responsible for permitting and supervising certain small-scale, low-risk activities, the permitting and supervision of which do not require an extensive knowledge-base. Waste management at ports and marinas, and the reception of waste originating from leisure boats, belong to the responsibility area of the committee. The work is in practice carried out by individual office-holders. The committee is supported by the AVI and the ELY Centres within their respective areas of responsibility. Municipalities and cities usually equally own the harbour areas and manage them either by themselves or rent them to boat clubs or commercial operators.

[6] In Helsinki and Turku, the notification is submitted to the respective cities' environmental protection boards.

2.6 Harbours, marinas and boat clubs

Harbour areas are usually owned by municipalities and they are managed by the municipalities themselves or leased to commercial operators or private boat and yacht clubs. The owner of the harbour area is typically responsible for maintaining the docks and boat clubs and offers other services for the boaters, such as electricity and water points, lavatory facilities and club spaces. The boat clubs may thereafter sub-lease the mooring spots to the boat owners.

The boat clubs may operate in a form best suited for their purpose, but usually they are registered associations. As a registered association, a boat club has a board of directors chaired by a commodore. The clubs can be open to anyone or membership may require a recommendation from a board member or another club member. Members usually pay a one-time membership fee and an annual fee, together with the rent of the mooring. The boat clubs normally do not have employees.

3 Environmental quality regulation

3.1. Summary

The Water Framework Directive 2000/60/EC ("the WFD") has been implemented in Finland by the River Basin and Marine Areas Management Act (1299/2004) (the "Water Management Act") and the Decree on River Basin Management Areas (1303/2004) (the "Water Management Decree") while the implementation of the Marine Strategy Framework Directive 2008/56/EC (the "MSFD") was carried through amendment of the Water Management Act and enactment of a Decree on Management of Marine Areas (980/2011) (the "Marine Management Decree").

Finland is geographically divided into eight river basin management areas. Each area has a river basin management plan containing information on the environmental status of the surface waters and environmental objectives for the area. The river basin management plans do not as such point out antifouling paints as an issue even though for example the Kymijoki-Suomenlahti plan does recognize organic tin compounds used as bottom paints for boats. The marine strategy sets out a functional objective of reducing the use of bottom paints for boats by developing and promoting harmless mechanical cleaning methods and extensively taking them into use. This is not, however, recognized as a measure to achieve GES in the draft programme of measures of the marine strategy.

3.1 Implementation of the water directives

In Finland, the WFD has been implemented by the Water Management Act and the Water Management Decree. The implementation of the MSFD was carried out through amendment of the Water Management Act by means of act (272/2011) and enactment of the Marine Management Decree. The statutory objective is that Finnish surface waters shall achieve at least good quality by year 2015. Achievement of the environmental objectives, may, however, subject to certain conditions, be extended to year 2021 or 2027. Good environmental status ("GES") shall equally be achieved in respect of Finnish marine waters by year 2020.[7] The marine strategy covers Finland's marine areas from the coast line until the outer border of its exclusive economic zone.[8] Thus, Finnish coastal waters are subject to two planning systems; the river basin management plans and the marine strategy. The planning and execution of respective systems shall nevertheless be carried out through coordination and with coinciding objectives.[9]

[7] The Water Management Act, Section 21.1(3) and Section 26b.
[8] The Water Management Act, Section 26a.
[9] The Water Management Act, Section 1, 1st subparagraph; The Ministry of the Environment, päätös/decision 13.12.2012 (2012).

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive") has been implemented in Finland by means of the Nature Conservation Act (1096/1996). The said act contains a prohibition of deterioration according to which the natural values of the Natura 2000 network cannot be significantly weakened.[10] Based on the act it is prohibited to destroy or weaken the resting and breeding places of individuals belonging to animal species listed in Annex IV (a) of the Habitats Directive.[11] In cases where antifouling paints are used nearby a Natura 2000 area, the prohibitions could be of relevance in the event the above mentioned animal species that are sensitive to antifouling substances would occur in that particular area.

3.2 The River Basin Management Plans

In line with the concept of river basin districts of the WFD, Finland is geographically divided into eight river basin management areas, which are the following:[12]

1. Vuoksi;
2. Kymijoki-Suomenlahti;
3. Kokemäenjoki-Saaristomeri-Selkämeri;
4. Oulujoki-Iijoki;
5. Kemijoki;
6. Tornionjoki (managed jointly with Sweden);
7. Tenojoki, Näätämöjoki and Paatsjoki; and
8. The Åland Islands has its own river basin management area (managed by the local government of Åland Islands).

The coastal waters of a river basin management area comprise the surface waters within one nautical mile from the baseline.[13] The main instrument of the Water Management Act is the *river basin management plan* which shall be compiled for each river basin management area, and which shall contain, inter alia, information on the environmental status of the surface waters and the environmental objectives of the respective river basin management area. Based on the said information, a programme of measures containing the necessary measures for achieving the aforesaid environmental objectives is compiled as a part of the river basin management plan.[14]

In 2009, the Council of State approved Finland's first river basin management plans pursuant to decision YM018/2009 (the "Water Management Decision"). The plans contain the characterizations of the environmental status of the coastal waters and identifications of the pressure directed at the same, as well as the most central water protection questions. The plans lay down the environmental objectives of the river basin management plans in respect of each relevant sector of society (agriculture, communities etc.) in line with the WFD, and define the related action plans for the purpose of maintaining and/or achieving the said environmental objectives.[15] The river basin management plans for the period 2016-2021 have been drafted,[16] and between 1 October 2014 and 31 March 2015 everyone had the right to present their opinions during the hearings arranged (jointly

[10] The Nature Conservation Act, Section 64a.
[11] The Nature Conservation Act, Section 49.
[12] The Water Management Decree, Section 1.
[13] The Water Management Act, Sections 2(3) and 11.
[14] The Water Management Act, Sections 11 and 12.
[15] Council of State / Valtioneuvosto, YM018:00/2009 (2009), pp. 3-5.
[16] The Ministry of the Environment, *Vaikuta vesiin,* available at: http://www.ymparisto.fi/fi-FI/Vesi/Vaikuta_vesienhoitoon_merenhoitoon_ja_tu(31007) (visited 3 July 2015).

with the hearing on the marine strategy's draft programme of measures).[17] The opinions and comments provided are currently being reviewed.

3.2.1 Environmental status of the coastal waters

Pursuant to the WFD, the surface water status is determined by the poorer of its ecological status and its chemical status.[18] The classification of Finnish surface waters was determined according to what extent anthropogenic activities have altered the waters' ecological[19] and chemical status.

The classification of the chemical status of the surface waters is based on comparing the concentrations of so-called 'Priority Substances' as defined by the WFD, measured in the water body at hand, with the environmental quality standards set for the said substances. The standards are set by the Decree on substances hazardous for the aquatic environment (1022/2006) ("the Hazardous Substances Decree"), enacted on the basis of the Environmental Protection Act, and sets out environmental quality standards for 33 Priority Substances [20] including Hazardous Priority Substances [21] established on EU level by virtue of Annex II of the EQS Directive, as well as environmental quality standards for 15 substances which have been established as harmful on national level.[22]

The decree lays down emission limit values and emission prohibitions.[23] The objective of the decree is to cease the emissions and washings away of substances which are hazardous for the aquatic environment at once or in phases. It is applicable to Finnish coastal waters which are equally subject to the river basin management plans and the marine strategy.[24] In the case of antifouling substances, the decree lays down environmental quality standards for, *inter alia*, tributyltin compounds (tributyltin cation)[25], diuron, bronopol and 1,4-diklorbensen in relation to which certain quantified concentrations may not be exceeded in surface waters and fish.[26] The chemical status is classified as good if the waters comply with the said standards. According to the Water Management Decision, the concentrations of substances hazardous for the aquatic environment and harmful substances do not, for the major part of Finnish surface waters, exceed the environmental quality standards of the Hazardous Substances Decree. Thus far there is not, however, sufficient information with regard to most substances with impact on the chemical state of surface waters.[27]

3.2.2 Contamination by antifouling paints

The river basin management plans do not specifically address the issue of contamination by antifouling substances in surface waters. For example, the *Kymijoki-Suomenlahti* river basin

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[17] The Water Management Act, Section 15; Communication by the Ministry of Agriculture and Forestry dated 1 October 2014, available at: http://www.mmm.fi/fi/index/etusivu/tiedotteet/141001_vesienhoito.html (visited 3 July 2015).
[18] The WFD, Article 2(17).
[19] Based on Newsletter Envelope 3/2013 of the Finnish Environment Institute (available at: http://mmm.multiedition.fi/syke/envelope/Envelope_2013_3/sivu_5.php (visited 3 July 2015), the ecological status of the Finnish marine areas has clearly declined; 60% of Finnish coastal areas have less than good ecological status. The ecological status of the major part of the Finnish Bay and the Finnish Archipelago Sea is tolerable and the status of the archipelago's outer areas is acceptable. The ecological assessment of the status of Finnish waters was updated in 2013. The assessment showed that none of the water areas in coastal regions has a high status (three fourths of the surface area of Finnish coastal waters is in poorer condition), and the conditions of the Archipelago Sea and of the Gulf of Finland are especially worrying. The main problem was identified as the eutrophication of waters.
[20] The Hazardous Substances Decree, Annex I (C).
[21] Within the list of Priority Substances, the 'Hazardous Priority Substances' (toxic, persistent and liable to bio-accumulate or give rise to equivalent concern) are to be identified. The criterions for Priority Hazardous Substances of Article 2(30), Article 16(3) and (6) are consistent with the definition of Substances of Very High Concern (SVHC) under the REACH Regulation, pursuant to its Article 57.
[22] The Hazardous Substances Decree, Annex I (D).
[23] The Hazardous Substances Decree, Annex I (A) and (B).
[24] The Hazardous Substances Decree, Section 2.
[25] Chemical Abstracts Service (CAS) No. 36643-28-4.
[26] The Hazardous Substances Decree, Section 6 and Annex I. C).
[27] The Council of State, YM018:00/2009 (2009), p. 4.

management plan (area 2) merely states that the environmental state of coastal waters in the Finnish Bay is, depending on the area, acceptable, tolerable, and in some cases even poor.[28] As to the contamination by antifouling paints, the plan mentions that organic tin compounds (TBT) have been used as bottom paints for boats.[29] In the related programme of measures it is nevertheless stated that the waste management for leisure boat marinas should be developed and complemented to more accurately reflect the regulation in force.[30] It is not revealed whether the recommended action would have been drafted particularly with the waste from antifouling paints in mind. In the *draft* programme of measures for Uusimaa region for the period 2016-2021[31], waste management of marinas are not recognised as a development measure. Instead it is stated that measures for controlling the risks of watercourse traffic in the Gulf of Finland is addressed by the marine strategy planning.[32]

The main part of the coastal waters in the *Kokemäenjoki-Saaristomeri-Selkämeri* river basin management area (area 3) is classified as acceptable. In certain places the organisms and sediments contain high concentrations of contaminants. These are not, however, addressed in the classification of the chemical state of the waters, as the applicable environmental quality standards are not exceeded.[33] Also here the related programme of measures states that waste management of leisure boat marinas should be developed to reflect the regulation in force. Furthermore, the programme states that the sea sediments are heavily contaminated by TBT in certain areas of South-West Finland, and that the contaminations have spread from the coastal areas in front of Turku and Naantali to the nearby straits.[34] The *draft* programme of measures for the Finnish Archipelago Sea for the period 2016-2021, waste management of marinas are not recognised as a development measure. The draft programme states that the river basin area has held numerous installations in which substances listed in the Hazardous Substances Decree have been used, but it does not address antifouling substances specifically (with an exception to TBT). The contamination of sediments by TBT is nevertheless considered a problem in connection with dredging, and the programme refers to the applicable guidance by the Ministry of the Environment (2004) in defining whether the banking masses are eligible for dumping at sea.

3.3 The Marine Strategy

In 2012 the relevant ministries carried out an initial assessment of Finland's marine environment based on which the good environmental status ("GES") was defined, and the related environmental objectives were determined as a first step of the Finnish marine strategy, the report of which was presented in December 2012 by the Council of State (the "Marine Management Decision").[35]

3.3.1 Contamination by antifouling paints

According to the marine strategy's initial assessment, the majority of Finnish marine waters have less than good environmental status. The presence of heavy metals, organic tin compounds and other hazardous chemicals in the Finnish marine waters are addressed but not quantified. The presence of TPhT and TBT in the flesh and liver of certain fish species are, however, identified.[36] In addition, the assessment states that high levels of certain hazardous substances have been identified in sea sediments of the coastal waters. The antifouling paints of ships and leisure boats were identified as a

[28] Regional Environment Centres (2009), p. 79.
[29] Ibid., p. 55.
[30] The ELY Centre, (2010b), pp. 140 and 142.
[31] Uudenmaan vesienhoidon toimenpideohjelma, LUONNOS 1.10.2014.
[32] Ibid., p. 6.
[33] SYKE and the Regional Environment Centres (2009), p. 116.
[34] The ELY Centre (2010b), p. 34 and 93.
[35] The Ministry of the Environment, 13.12.2012 (2012); the assessment was carried out pursuant Section 26c of the Water Management Act and Sections 6 and 7 of the Marine Management Decree, as well as Commission Decision 2010/477/EU.
[36] The Ministry of the Environment, *Suomen merenhoitosuunnitelman valmisteluun kuuluva meriympäristön nykytilan arvio*, 28.9.2012 (2012), p. 298.

source, and as a consequence, the calculated environmental quality standard of TBT in sea sediments around harbours, shipyards and passages is exceeded in many places. The assessment further states that these substances end up in marine waters through fugitive emissions by production facilities, domestic use, use of certain products, as well as through waste emissions. The assessment assumes that the discharge of TBT by antifouling paints has been essentially reduced or has ceased entirely as a consequence of the 2003 ban of TBT in antifouling paints for ships and leisure boats, which previously was the most significant source of discharge. The current quantified discharge represented by TBT-treated timber is assumed to be a few kilos per year. It is noted, however, that discharges from antifouling paints by ships and boats have not been investigated in Finland.[37]

3.3.2 Good Environmental Status (GES) and Environmental Objectives

Pursuant to Article 9 of the MSFD and in connection with the initial assessment, Finland determined the GES of its marine region on the basis of the qualitative descriptors in Annex III of the Marine Management Decree. The qualitative descriptors no. 8 and 9 correlate with descriptors no. 8 and 9 in Annex I of the MSFD. The initial assessment also defined the environmental objectives for the marine environment in respect of contaminants.

Descriptor 8: Concentration of contaminants in the marine environment:

- GES is achieved when (i) the levels of concentration of hazardous substances do not cause direct or indirect adverse effects to sensitive marine species or species at the top of the food chain and (ii) the levels of concentration of contaminants do not cause adverse biological effects on individual level nor on any level of the food chain, and the health of marine species is not put at risk.
- It was stated that GES has not been achieved.
- The environmental objective is that the concentrations of hazardous substances do not exceed the environmental quality standards set by the Hazardous Substances Decree. In addition, the concentrations of heavy metals in waters, sediments and organisms are close to natural levels and emissions of oil and chemicals do not cause variations in the concentrations of hazardous substances.[38]

Descriptor 9: Contaminants in fish and seafood for human consumption:

- GES is achieved when concentrations of hazardous substances in fish and other seafood for human consumption do not exceed levels established by Community legislation or levels set by other relevant norms.
- The levels of contaminants vary according to fish species and size, and area of the Baltic Sea. The environmental status in this respect is **acceptable** according to HELCOM.
- The environmental objective is that the limit values set by the relevant Commission Regulations[39] are not exceeded. A general objective is the decreasing of concentrations of synthetic compounds.[40]

3.3.3 Functional objectives

The environmental objectives of the river basin management plans and the marine strategy relate to the desired results of the water bodies' environmental state – not the means by which the results are obtained. In respect of means or methods, the marine strategy sets out certain functional objectives regarding the most central pressures on the water bodies. The most relevant substances and substance groups are those identified in the WFD and the Hazardous Substances Decree and the functional objectives are centrally connected to GES and the environmental objectives of descriptors 8 and 9 (above). As part of the functional objectives, the REACH Regulation, the POPs Regulation, the

[37] The Ministry of the Environment (2012), pp. 302-303.
[38] Council of State decision, 19.10.2012 (2012), p. 24.
[39] Commission Regulation 1881/2006 and Commission Regulation 1259/2011.
[40] Council of State decision, 19.10.2012 (2012), pp. 26-27.

Industrial Emissions Directive[41], the Convention on Long-range Transboundary Air Pollution[42], the TBT Convention[43], the National Programme on Hazardous Substances[44] and the Baltic Sea Action Plan[45] are taken into account, for example, in environmental permit procedures and through product regulation. Another functional objective is to reduce the use of bottom paints for boats by developing and promoting harmless mechanical cleaning methods and extensively taking them into use. Hazardous substances causing contamination of sea sediments are to be recognised and the possibilities of their remediation investigated. In this context, it must be ensured that dredging and banking of sediments do not spread the contaminants. The objectives also include the improvement of storage, transport and risk management with respect to chemicals.[46]

3.3.4 The Monitoring Programme and the Programme of Measures

The Council of State decided on the marine strategy monitoring programme in August 2014[47], the main objective of which is to produce relevant information allowing the assessment of the prevailing environmental status of the marine environment. The said information served as a basis for the development of the programme of measures designed to achieve or maintain GES. The occurrence of certain heavy metals (arsenic, cadmium, mercury, nickel and lead) is monitored in fish and sea food for human consumption.[48] Information on monitoring and detailed information on the monitoring methods are collected into a special Marine Monitoring Manual.[49] As a third step of the marine strategy, the sufficiency of the prevailing measures for marine waters are assessed and new measures for maintaining or achieving good environmental status are presented. The programme of measures, which also will further specify the functional objectives, will be finalized during 2015 and the implementation of its measures will begin in 2016.

The *draft* programme of measures was open for comments from 15 January 2015 until 31 March 2015[50] and feedback received during the comment period is currently being reviewed.[51] The draft programme does not identify the use of antifouling paints as a source for the presence of hazardous substances in surface waters. Cybutryne and terbutryn (antifouling substances) are nevertheless mentioned as a biocide used in paints, but not quantified. One of the proposed measures in respect of hazardous substances with impacts on descriptors 8 and 9 is the reduction and monitoring of dioxins and furans (not antifouling substances). In respect of descriptor 9 it is nevertheless proposed as a measure that harbours' waste reception capacity shall be improved. Regardless of the size of harbours (it is not clear whether this includes marinas), waste management should be organised for the purpose of appropriate handling of household wastes and recyclable units. In addition, harbours should advise and guide boaters and hikers on the matters related to waste management. Wastes in the form of dust and scraping of paints are not mentioned. Municipal authorities such as leisure boat marinas are identified as a responsible party for execution of the measure.[52]

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41 Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control).
42 The Convention on Long-Range Transboundary Air Pollution, entered into force on 16 March 1983.
43 International Convention on the Control of Harmful Anti-fouling Systems on Ships, entered into force on 17 September 2008.
44 Kansallinen vaarallisia kemikaaleja koskeva ohjelma (2013).
45 The HELCOM Baltic Sea Action Plan (BSAP) strategy to restore the good ecological status of the Baltic marine environment by 2021 was adopted by all the coastal states and the EU in 2007.
46 Council of State decision, 19.10.2012 (2012), pp. 29-34.
47 The Water Management Act, Section 26h.
48 The Council of State decision 21.8.2014 (2014), pp. 5, 27, 34.
49 The Ministry of the Environment, *Suomen merenhoidon seurantakäsikirja*, (21.8.2014), available at: http://www.ymparisto.fi/download/noname/%7BECF9A983-AC50-4DAB-B237-D7EA3A09664B%7D/103978 (visited 3 July 2015).
50 The Ministry of the Environment, *Vaikuta vesiin,* available at: www.ymparisto.fi/vaikutavesiin (visited 3 July 2015); Section 26j, Water Management Act.
51 The Ministry of the Environment, *Merenhoidon suunnittelu ja yhteistyö*, available at: http://www.ymparisto.fi/fi-FI/Meri/Merensuojelu_ja_hoito/Merenhoidon_suunnittelu_ja_yhteistyo (visited 3 July 2015).
52 ELY Centres (2014), pp. 52–58, 68, 97, 104.

3.4 Legal effects of the River Basin Management Plans and the Marine Strategy

The river basin management plans and the marine strategy do not impose obligations on operators of facilities or on other actors. Instead, state and municipal authorities are merely obliged to "take the river basin management plans and the marine strategy into account" in the applicable parts of their activities.[53] For example, a comparative assessment on the interests between the water management project and the environmental state and utilization of the waters under the applicable river basin management plan is merely to be "taken into account" within the range of the general permit consideration for water permits under the Water Act.[54]

In granting environmental permits under the Environmental Protection Act, the river basin management plans and the marine strategy have been exclusively connected to the provisions on unconditional obstacles for granting environmental permits. According to the provisions, in assessing whether an activity may cause significant contamination of the environment, which as such is an unconditional obstacle for granting an environmental permit, the assessment on the environmental state and utilization of the waters under the relevant river basin management plan and the marine strategy shall also here be "taken into account".[55] It appears that the said provision would provide a more solid ground for not granting an environmental permit in comparison with the assessment for a water permit. This provision is, however, rarely applied.[56]

River basin management plans function as background material and means of interpretation in the permit consideration process, and are not thus directly applied. As mentioned above, in the light of the Finnish Constitution it is not possible for a river basin management plan to lay down obstacles for granting an environmental permit as such, and the principles governing the rights and obligations of private individuals shall be governed by acts. Since the river basin management plans are not acts they cannot set direct obstacles for granting environmental permits. However, in practice the river basin management plans may have a significant effect on the process of considering whether to issue the environmental permit or not (referred to as the "environmental permit consideration"). In the environmental permit consideration, the *permit regulations* have a central role in limiting the activity so that a permit could be granted. The permit decision must also indicate how the river basin management plan has been taken into account in the environmental permit consideration (containing both the consideration of the preconditions for granting a permit and the consideration of the permit regulations). If an activity subject to environmental permit is deemed to cause negative effects to water management, especially concerning the water classifications, the permit could be declined.

3.5 The Hazardous Substances Decree and permitting

The Hazardous Substances Decree is relevant in respect of certain activities subject to environmental permit under the Environmental Protection Act. For example, the regulations of an environmental permit may be stricter than the minimum rules set out by the Environmental Protection Act (for example, by BAT, BEP), if it is required to ensure compliance with an environmental quality standard.[57] In theory this implies that an operator in certain circumstances would have to comply with stricter waste water emission limits in order to ensure that environmental quality standards of a particular water body are not exceeded. In this context is to be noted, however, that the permitting authority (AVI) does not directly apply the environmental quality standards when setting the individual emission limit values of certain waste waters. Instead, the natural state of the relevant water body, other activities, as well as weather and seasonal impacts are assessed as a whole. On the other hand, in respect of activities not subject to permitting, the decree does not impose any direct obligations. This

[53] The Water Management Act, Section 28.
[54] The Water Act, Chapter 3, Section 6, 2nd subparagraph.
[55] The Environmental Protection Act, Chapter 6, Section 49, 1st subparagraph (2), and Chapter 6, Section 51.
[56] Kuusiniemi et al. (2013).
[57] The Environmental Protection Act, Section 70, 1st subparagraph, 2.

elaboration is consequently not applicable to marinas as such are not subject to permitting per se. The ELY Centres shall, within the programme of measures of the river basin management plans present preventive measures by which the environmental quality standards of the Hazardous Substances Decree are not exceeded.[58] "Catching" antifouling practices in marinas would thus appear to be confined to the (often generally described) measures in the relevant programme of measures, and cannot be affected by means of permitting.

4 Product related regulation

4.1 Summary

Product related regulation may be divided into regulation concerning antifouling paints and regulation of leisure boats. Antifouling substances as a biocidal product group have to be approved by Tukes and registered before placed on the market. Certain types of boats need to be registered into watercraft register administered by Trafi.

4.2 Marketing and retail sale of antifouling paints

The Chemicals Act (599/2013) entered into force on 1 September 2013 and aims at centralising the control of chemicals in Finland. It is predominantly a so-called "supervisory act", as the substantive chemicals related obligations are largely regulated on EU level. Thus, the act contains mainly provisions on the supervisory authorities, their tasks, rights and obligations. It lays down certain general obligations applicable to all hazardous substances. Antifouling substances belong to the product group of biocidal products,[59] and in respect of which the Decree on Biocidal Products and the Notification of Active Substances (419/2014) (the "Biocidal Products Decree") and the Decree on Biocidal Preparations (418/2014) are additionally applicable.

A biocidal product cannot be placed on the market unless it has been approved by Tukes. The actor responsible for placing such product on the market (importer or retail seller) is obliged to apply for approval, and the application must contain certain specified qualitative information on the properties and impacts of the active substance(s) of the biocidal product.[60] If an actor intentionally or negligently places a biocidal product on the market without approval, that person shall be sentenced to payment of a fine for *chemical offence*. Severe breaches are tried according to Chapter 48 of the Criminal Act (39/1889), according to which the main environmental crime, *desecration of the environment*, encompasses intentional and grossly negligent breaches of certain provisions of, for example, the Chemicals Act, the REACH Regulation, the Biocidal Product Regulation, the Environmental Protection Act and the Waste Act.

When a product has been approved and when placing such biocidal product on the market, the responsible actor must submit a notification to the chemicals product register upheld by Tukes. In respect of chemicals for industrial and professional use, a safety data sheet according to the REACH Regulation must also be provided. The product must be classified, labelled and packaged, and labels must be provided in both Finnish and Swedish languages. By 1 June 2015 the products shall be classified and labelled according to the CLP Regulation. Pursuant to the Chemicals Act, the manufacturer or the importer of biocidal products shall also notify the competent authority of the quantities of the chemicals produced, sold and used. The information concerning the previous year shall annually be submitted Tukes on 31 March at the latest. All obligations of the Biocidal Products Regulation are not applicable immediately at its entry into force. Certain transitional periods have been set for biocidal product which do not belong to the purview of Directive 98/8/EC of 16 February

[58] The Hazardous Substances Decree, Section 6, 3rd subparagraph.
[59] Biocidal products, product group 21: antifouling substances.
[60] The Chemicals Act, Sections 27 and 28; The Biocidal Products Decree, Sections 1 and 2.

1998 concerning the placing of biocidal products on the market[61], but have been available on the markets on 1 September 2013. In Finland, the national procedures on pre-approval will continue until the substance has been approved on EU level and a permit must be applied in accordance with the Biocidal Products Regulation.[62] This also applies to antifouling products (paints).

An advertiser shall comply with advertising rules. Advertisement must always contain the following sentence: "Use biocides safely. Always read the label and the product information before use." The word "biocide" can be replaced by the product group name, such as "antifouling product/paint". The advertising may not be misleading in respect of the risks for humans or the environment. Expressions giving a misleading image of the product's risks are not allowed, for example, "Low-risk biocidal product", "Non-toxic" or "Not harmful". According to the Consumer Protection Act (38/1978, amended 561/2008), false or misleading information that may lead to a consumers' purchase decision which such person would not otherwise have taken may not be conveyed in marketing or customer relations. Such information may particularly concern the origin, manufacturing method and time use and impact of a consumer commodity, as well as the results of tests of such commodity.[63] If necessary with regard to consumer protection, the Market Court may prohibit an advertiser of continuing or repeating activity in breach of the provisions on marketing, and such prohibition can be combined with penalty of a fine.[64]

4.3 Application and use of antifouling paints

Biocidal products must be used in a qualified manner taking into account the product's instructions for use. If an actor intentionally or negligently violates against this obligation, that person shall be sentenced to payment of a fine for *chemical offence*. The requirement to use products appropriately in line with instructions of use thus directly obliges the boat owner in his own back yard or at the marina, and a violation would make such person subject to payment of a fine.

4.4 Leisure boat legislation

Based on the Watercraft Register Act (424/2014), vessels equipped with a motor capacity of at least 15 kilowatts or with a body length of at least 5.5 meters must be registered at the watercraft register. Other crafts can be registered voluntarily. The watercraft register is managed by Trafi) and based on which approximately 196.000 watercrafts are registered in Finland. About 180.000 of these are motorboats, 14.000 sailing boats and 2,000 other water crafts, such as jet-skis, hydro copters or hovercrafts. According to the Finnish Maritime Administration (now part of the Finnish Transport Agency) there were approximately 737.000 boats, registered and non-registered, watercrafts in Finland in 2005.

The Act on Waterborne Traffic (463/1996) includes general regulation on water transport, including some environmental matters. The general purpose of the act, stated in Section 1, is to promote the safety of water transport and to prevent the damage to the nature and other environment, fishing, general recreational use of nature or other public or private value resulting from using watercrafts. Section 8.2 of the act states that using a watercraft shall not cause significant or unnecessary damage to the above-mentioned values, including the environment. Section 9 authorizes the Government to give more detailed regulations with decrees related to inter alia the equipment and accessories of watercrafts and other matters concerning prevention of environmental damage. This provision is very open and at least in theory enables also decree level legislation concerning antifouling substances and practices (on which see further under Section 7.2 below).

[61] The directive was replaced by the Biocidal Products Regulation in 2012.
[62] The Chemicals Act, Section 63; The Biocidal Products Regulation, Article 91.
[63] The Consumer Protection Act, Chapter 2, Section 6.
[64] The Consumer Protection Act, Chapter 2, Section 16.

5 Waste management and other environmental protection

5.1 Summary

The waste management of leisure boat marinas is governed by the general Waste Act and Waste Decree, and by the Maritime Environmental Protection Act, which is complemented by the Decree on Environmental Protection in Maritime Transport, and also by the Environmental Protection Act and the Environmental Protection Decree. There exists an obligation to compile a waste management plan, but this does not, however, apply to marinas with less than 50 berths. The national non-profit organisation 'Keep the Archipelago Tidy' has introduced the so-called "Roope harbour programme" which aims to promote environmentally friendly practices (including antifouling practices) in marinas and among boaters.

5.2 Waste legislation

The Waste Act and the Waste Decree (179/2012) entered into force on 1 May 2012 as a result of modernizing the waste policy and national implementation of Directive 2008/98/EC on waste. The municipality is the authority responsible for management of waste originating from households, holiday properties and certain other equivalent sources.

The Waste Act applies to waste, the efforts to prevent that waste arises and to the organization of waste management. In respect of waste produced in connection with the regular operation of ships the Waste Act is applicable when such waste has been handed over to an onshore waste management installation. The Waste Act is based on certain central hierarchical obligations, some of which are relevant to the treatment of waste. There is an obligation to keep separate wastes which to their type and nature are different from each other. Such wastes shall also be separately collected as well as separately stored to the extent required to prevent danger or damage to the health or the environment.[65] In addition, harmful waste may not be diluted or in any other way blended with waste of another type or nature, or with other substances.[66] In line with the polluter pays principle, the Waste Act stipulates that the actor from which the waste originates, or the current or former holder of the waste, is the actor liable for the waste management costs.[67] The Waste Act lays down that waste may not be abandoned or treated in an uncontrolled manner. The waste and waste management may not cause danger or damage to the health or the environment, lead to littering, weaken the public security or lead to any other equivalent violation of public or private interests. When collecting and transporting waste, when waste management installations or treatment facilities are placed, constructed and operated and during aftercare, it shall be ensured that waste management does not lead to emissions causing a risk of contamination of the environment.[68]

Breaches against the above obligations may lead to an order by the supervisory authority to fulfil the obligations, remediate the damage caused and/or pay the costs caused by the breach.[69] However, in practice the supervision of compliance with these obligations is difficult. Wastes from removal of paints containing organic solvents or other dangerous substances are classified as hazardous waste under Annex IV of the Waste Decree.[70] Consequently it must be deemed unlawful not to collect the dust and scrapings of antifouling paints for appropriate waste treatment in connection with ashore maintenance of the boat.

[65] The Waste Act, Chapter 2, Section 15.
[66] The Waste Act, Chapter 2, Section 17.
[67] The Waste Act, Chapter 2, Section 20.
[68] The Waste Act, Chapter 2, Section 13.
[69] The Waste Act, Chapter 13, Section 126.
[70] The Waste Decree, Annex IV, Waste code 08 01 17*.

5.3 Waste management in leisure boat marinas

Waste management of leisure boat marinas are governed by the Maritime Environmental Protection Act which is complemented by the Decree on Environmental Protection in Maritime Transport (the "Maritime Environmental Protection Decree")[71], the Environmental Protection Act, the Environmental Protection Decree (713/2014), as well as the Waste Act and the Waste Decree.

The definition of a harbour under the Maritime Environmental Protection Act covers harbours equipped with facility to receive vessels, including "recreational vessels". The definition thus appears to include leisure boat marinas. The harbour holder[72] must compile a waste management plan for the harbour and arrange for reception of waste originating from the vessels.[73] The responsibility to compile a waste management plan applies to leisure boat marinas with at least 50 moorings or 50 winter storage places, if a mooring fee or a harbour fee is payable.[74] This means that certain service stations, "bridge stores" and the boat clubs' free-of-charge bases falls outside the responsibility to compile such a waste management plan.[75] The waste management plan is subject to the approval of the ELY Centre.[76]

As stated above, waste from removal of paints containing organic solvents or other hazardous substance is classified as hazardous waste. However, the above-mentioned waste management plans cover only waste generated by the boats and not waste scrapings and dust produced during ashore maintenance of the boats.[77] Nonetheless, there are examples of waste management plans of leisure boat marinas which also cover management of antifouling paints' scrapings and dust.

5.4 Environmental permit requirements

According to the Environmental Protection Act there is no general obligation to apply for environmental permit for a leisure boat marina. According to the Water Act, leisure boat marina in most of the cases needs water permit, but this permit does not deal with environmental pollution issues. In addition, the Environmental Protection Act nor the Environmental Protection Decree does not contain any explicit provisions with regard to the safety of boat maintenance.

There are, however, certain cases when an environmental permit is required. Based on the Environmental Protection Act, the operation of a leisure boat marina requires an environmental permit if the marina is distributing liquid fuels from a distribution station and the combined volume of the fuel tanks is at least 10 m^3, except when the fuel is used in motor-driven vehicles or motorboats.[78] The requirements of the Decree on Environmental Protection Requirements for Liquid Fuels Distribution Stations (444/2010) are applicable to such marinas. A permit is equally required if the activity of the marina is deemed to cause contamination of water bodies or if the activity of the marina causes so-called "unreasonable burden" to its neighbours.[79]

In other words, an environmental permit is not required to hold a marina or store leisure boats on land, regardless if maintenance takes place in a harbour or in the boat owners own back yard. In addition, the Environmental Protection Act and the Environmental Protection Decree does not contain any explicit provisions with regard to the safety of boat maintenance.

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[71] The Directive on port reception facilities for ship-generated waste and cargo residues 2000/59/EC partly forms the legal background to the Maritime Environmental Protection Act and Maritime Environmental Protection Decree.
[72] The party with the "overriding responsibility" for the port is deemed to be the port holder.
[73] The Maritime Environmental Protection Act, Chapter 9, Section 3.
[74] The Maritime Environmental Protection Act, Chapter 9, Sections 1 and 3.
[75] Government Bill 248/2009 on the Maritime Environmental Protection Act, p, 7.
[76] Maritime Environmental Protection Act, Chapter 9, Section 4.
[77] This type of waste is not included in the list of the Maritime Environmental Protection Act, Chapter 9, Section 1.
[78] The Environmental Protection Act, Table 2, Annex I.
[79] The Environmental Protection Act, Section 27.

5.5 Municipal Environmental Protection Regulations

Municipalities may issue environmental protection regulations for local implementation of the Environmental Protection Act, with regard to the conditions of that specific municipality.[80] The regulations may concern, for example, conditions and orders for equipment and their protective distances from water bodies, wells and neighbours' real properties, removal of bottom paints and chemicals management. Municipal regulations may also concern actions to improve waters and the marine environment which are necessary in the light of the applicable river basin management plan or the marine strategy.[81]

5.5.1 Examples of municipal environmental protection regulations

Out of 100 leisure boat marinas in Helsinki, 39 are owned by the *City of Helsinki* while the remaining marinas are owned by private boat clubs or other organizations. Waste management in these marinas was investigated within a special project executed in year 2007 with an aim to create an understanding on the functioning of marinas' waste management.[82] The investigation was carried out by the environmental protection authority of Helsinki City on the basis of the relevant provisions of the Waste Act, the environmental protection regulations of the city and the joint waste management protection regulations of the capital area[83]. The environmental protection authority of Helsinki City is the supervisory authority for waste management of leisure boat marinas. Section 8 of the said environmental protection regulations (cleaning and maintenance of the boats), which concerns leisure boat marinas in particular, states the following: *"The boats' bottom paints must be removed on a leak-proof foundation which prevents harmful paint waste from reaching the soil and from which the paint waste can be carefully collected. The spreading of scraping dust from the boats must be prevented."* Based on the investigation, environmental protection and waste management were well managed in the predominant part of leisure boat marinas in Helsinki. The report notes, however, that maintenance of the boats, especially bottom treatment and painting, has potentially caused discharge to the ground. The report further states that these emissions are nevertheless caused only during the spring and in the autumn after docking.[84]

The environmental protection regulations in the *City of Porvoo* contain the same language as above in respect of cleaning and maintenance of the boats. In addition, the provision has been specified more closely as follows: "Based on the Environmental Protection Act, substances may not be released to the ground so that they may cause soil contamination. Although harmful substances in so-called antifouling paints have been restricted, they still contain, inter alia, copper compounds. The waste and dust from scraping the boats in the autumn will cause contamination of the ground. In order to prevent this, the major part of paint wastes shall be collected."[85]

The *City of Parainen* has issued rules regarding leisure boat marinas as a part of their environmental protection regulations. According to the said rules, the bottom paints must be removed in a manner which allows the collecting of paint wastes. The wastes shall be transferred to a station accepting hazardous waste, and the dust from scraping the boats must be minimized.[86]

5.6 Voluntary marina environmental work

Keep the Archipelago Tidy (Fi: Pidä saaristo siistinä ry) is a national non-profit organisation with approximately 13.000 members (mainly boaters) and promotes the environmental protection of the

[80] The Environmental Protection Act, Chapter 20, Section 202, 1st subparagraph.
[81] The Environmental Protection Act, Chapter 20, Section 202, 3rd subparagraph.
[82] Helsingin Kaupungin Ympäristökeskus, (2008), p. 6.
[83] The capital area includes Helsinki, Espoo, Vantaa, Kauniainen and Kirkkonummi.
[84] Helsingin Kaupungin Ympäristökeskus, (2008), p. 14.
[85] The City of Porvoo, http://www.porvoo.fi/index.php?mid=4864 (visited 3 July 2015).
[86] The City of Parainen, http://www.parainen.fi/web/tjanster/miljo/fi_FI/miljoforeskrifter/ (visited 3 July 2015).

waters and the lake/marine environment. The organisation started as an initiative by private persons in the archipelago area and has spread to the coastal areas and the lake district of Finland.

The organisation has introduced the so-called "Roope harbour programme", the purpose of which is to promote, inter alia, appropriate waste and waste water management and environmentally friendly practices among marinas and boaters. As a "roope harbour" the programme requires marinas to designate a responsible environmental officer, arrange appropriate waste and waste water management, and participation in the programme etc. The programme also gives marinas information on, for example, toxic paints and their environmental impacts. Furthermore, the programme promotes alternative methods for maintenance of boat bottoms. There are currently 42 "Roope harbours" in Finland.

6 Contaminated land and sediments

6.1 Summary

Dredging and piling of sediments are governed by several regulations. The most relevant ones in practice are part of water, waste and environmental protection legislation. Usually dredging and piling require a permit or an announcement. The dredged sediment masses may be piled in water or on land. In Finland, the dredged masses in coastal and marine areas are usually piled in underwater piling areas, while in inland waters the masses are usually placed on land. Piling refers to piling of dredged masses either in waters or on land, while dumping refers to piling on sea.

6.2 Introduction

At the beginning of the 2000s, a pre-investigation on the remediation needs of dockyard areas and winter storage areas was carried out. The work continued in 2007 under an investigation which aimed to clarify what boatyard activities cause environmental hazards. In addition, an expert group was set up to assess the status of contaminated sediments in December 2003, the so-called "TBT work group", the work of which was presented in February 2006.

The revision of the data on soil contamination was initiated in 2001 through co-operation between the relevant authorities and resulted in an extensive soil condition database, the so-called "MATTI-register"[87], which was officially taken into use in 2007. The same year the Decree on the Assessment of the Degree of Contamination and Remediation Needs (214/2007) entered into force. The decree applies to contaminated soil and sets out threshold values as well as lower and upper guidance values for 52 organic and inorganic contaminants, such as, for example, copper, zinc, lead, nickel and PAHs, which are used in assessing the risks of soil contamination and remediation needs of the same, and thus replaced the so-called "SAMASE" values. Out of the 52 contaminants, 31 may occur in areas around dockyards and winter storage spaces for boats.[88] The decree is not applicable to sediments as it explicitly excludes contaminated sediments in water bodies from its area of application.[89] There are no corresponding norms for contaminated sediments in Finland. However, guidance quality criterions for dredged sediment masses were given by the Ministry of the Environment in 2004 and thereafter updated in 2015.[90] Prior to that, the concentrations of contaminants in sediment were compared to the above-mentioned SAMASE values.[91]

[87] The joint website of Finland's environmental administration, *Contaminated land areas*, available at: http://www.ymparisto.fi/en-US/Consumption_and_production/Contaminated_soil_sites (visited 3 July 2015).
[88] Pitkäranta (2008), p. 36.
[89] Section 1, Decree on the Assessment of the Degree of Contamination and Remediation Needs 214/2007.
[90] The Ministry of the Environment, Ympäristönsuojeluosasto (2004).
[91] Pitkäranta (2008), pp. 35–37.

A large part of Finnish harbours with winter dockyards have been indicated as possible risk targets in terms of contamination. The sources of possible contamination are treatment of bottom paints and other chemicals management and distribution.[92] The table[93] below shows the highest concentrations of inorganic and organic contaminants, expressed in mg/kg, which were identified in sediments of certain dockyards and harbours in the Cities of Helsinki, Porvoo and Espoo in the identified years.

Haitta-aineet	Telakka, Vuosaari[1]	Telakka, Suomenlinna[2]	Telakka, Hietalahti[3]	Venesatama, Porvoo[4]	Venesatamat, Espoo[5]	Venesatamat, Helsinki[6]
Epäorgaaniset haitta-aineet, korkein pitoisuus, mg/kg						
Pb	72	410	210	19	28	27
Cu	205	160	110	44	37	100
Zn	230	280	250	170	145	210
Cr	141	71	61	60	63	69
Co	-	13	13	16	16	11
Ni	86	34	22	36	37	34
Hg	0,2	1,9	1,4	0,06	<0,1	0,1
Orgaaniset haitta-aineet, korkein pitoisuus, mg/kg						
TBT	9	0,4	1,5	0,02	0,03	0,5
TPT	1,5	0,4	0,4	<0,001	<0,001	0,1
PAH-yht.	-	-	-	1	-	-
PCB	2,6	-	-	0,002	<määr.rajan	-
C10-C21	197	-	-	-	50	-
C22-C40	42	-	-	-	220	-

Lähteet: [1] Niinimäki ja Piispanen 2003, [2] Autio 2004, [3] Autio 2004, [4] Suomen IP-Tekniikka Oy 2007, [5] Pöyry Environment Oy 2006, [6] Autio 2004

6.3 Dredging and banking

The Water Act regulates so-called water management projects and other uses of water resources. Dredging of sediments always require a water permit pursuant to the act in case the masses to be dredged exceeds 500 m^3, if the dredging does not concern maintenance of a public waterway.[94] Waterways, harbours and docking areas must constantly be deepened and dredged to allow vessels to enter harbours and dockyards. The environmental effects of these activities depend on the amount and quality of the dredged sediment masses which are tested for contaminants in advance pursuant to the provisions on analysis methods and interpretations of results pursuant to the Hazardous Substances Decree.[95] Dredging and banking interferes with the contaminated sea sediments to some extent, consequently spreading the contamination. Based on certain assessments, approximately 5-10% of contaminants embedded in sea sediments are released to the environment when undertaking dredging.[96] These kinds of projects, activities which may cause a qualitative i.e. contaminating change to the marine environment, fall under a special category of projects under the Water Act: water management projects causing a danger of contamination.[97] According to the main rule, the permit matters for such projects are transferred to the purview of environmental permit matters under the Environmental Protection Act if a water permit under the Water Act is *not* required.[98] If a water management project subject to a water permit may cause or is at risk of causing contamination of the environment in water areas, the Environmental Protection Act is nevertheless assessed and applied in respect of the water permit's regulations.[99] When the Environmental Protection Act is applied, the

[92] Keep the Archipelago Tidy and certain cities/towns (2009), p. 20.
[93] Pitkäranta (2008), p. 45.
[94] The Water Act, Chapter 1, Section 2 and Chapter 3, Section 3.
[95] The Ministry of the Environment, 15/2012 (2012), p. 35.
[96] Jaakkonen et al. (2007), p. 3.
[97] The Water Act, Chapter 3, Section 2, 1st subparagraph, 2).
[98] The Water Act, Chapter 1, Section 2, 1st subparagraph.
[99] The Water Act, Chapter 3, Section 10, 3rd subparagraph.

limit values of the Hazardous Substances Decree may thus become applicable. Dumping of dredged sediments in Finnish waters always requires a water permit under the Water Act if the amount to be dumped is not insignificant.[100] The Ministry of the Environment has published separate guidelines for dredging and banking of sea sediments, which also is applicable to *dredging for remediation* of contaminated sediments. The said quality criterions define the sediments' degree of contamination by a two-threshold system. If concentrations are below the 1st threshold, the masses are to be deemed harmless. If the 2nd threshold is exceeded, the masses are contaminated. Based on the outcome it is decided whether the dredged masses are eligible for dumping at sea. If the concentrations are between the 1st and 2nd thresholds, an assessment and subsequent decision on dumping is case-specific.[101] The guidance criterion for contaminated sediments was updated in 2015.[102]

6.4 Dumping sediments at sea

Several harmful substances need to be taken into account when evaluating dredging masses' suitability for dumping. Sediments are categorized in concentration levels 1, 1A, 1B, 1C and 2 to support the evaluation. The next table shows the levels of copper and TBT in each category. Category 1 is considered as natural state. In category 1A the harmful substance is not considered to have effect on the masses' suitability for dumping. Materials in category 1B may be dumped in so-called "good" or "satisfactory" dumping site and category 1C only on good piling site. The material on category 2 is considered unsuitable for dumping.

	1	1A	1B	1C	2
Cu	< 35 mg/kg	35–50 mg/kg	50–70 mg/kg	70–90 mg/kg	> 90 mg/kg
TBT	< 5 µg/kg	5–30 µg/kg	30–100 µg/kg	100–150 µg/kg	> 150 µg/kg

The assessment of sediments suitability for dumping is compared to the suitability of the site of dumping. The concentration levels are set independently from the amount of dredged material. The amounts are assessed as a part of the environmental permit assessment.[103]

6.5 Liability

Environmental liability in the Finnish legal system is based on public, private and criminal law. The polluter pays principle is the main environmental law principle guiding the allocation of the liability. However, when contamination has been caused by numerous polluters during a long time, which is often the case for contaminated sea sediments, the liability allocation to the polluter is practically impossible. The matter becomes even more intricate as there are no clear rules on secondary liability on remediation of contaminated sea sediments, which, in the case of contaminated soil is the responsibility of the holder of the land-area. The provisions on secondary liability are applicable only if the dredged sediment masses would be banked ashore.

6.5.1 Public Environmental Liability

Public environmental liability is governed by the Environmental Protection Act, according to which the polluter is responsible, in first hand, to remediate contaminated soil. If the polluter cannot be identified or obliged to fulfil its obligations, the holder of the area is liable for remediation provided that it is not obviously unreasonable, and the holder knew or should have known the state of the area when it was transferred into her/his possession, or the contamination was caused with the holder's consent. In lease situations, it is not always clear who is to be deemed the holder of a land area. If the holder cannot be obliged to carry out the remediation, the municipality shall investigate the necessity

[100] The Water Act, Chapter 3, Section 3 1st subparagraph, 8).
[101] The Ministry of the Environment / Ympäristöministeriö, Ympäristönsuojeluosasto (2004).
[102] The Ministry of the Environment / Ympäristöministeriö, Ympäristönsuojeluosasto (2015).
[103] Ibid. pp. 40–42.

of remediation and if necessary, remediate the contaminated soil. If there is a reason to suspect that soil or ground water is contaminated, the person responsible for the remediation is obliged to investigate the contamination and remediation need. Such investigation is to be provided to the relevant ELY Centre, who can order the responsible person to fulfil its obligations. The above-mentioned Degree of Contamination and Remediation Needs (214/2007) shall be applied when remediation needs are assessed.

The Environmental Protection Act does not explicitly address contamination of sea sediments and the possible liability for remediating the same. Sea sediments are, however, to a certain degree indirectly covered by the Environmental Protection Act as contamination of soil or waters may be the result of dredging or banking contaminated sea sediments. In these cases, the party undertaking the construction project (the constructor), is normally paying for the additional costs caused by the contamination. An order on remediation of contaminated sea sediments is rarely issued by the supervisory authority in the absence of an impending construction project. This is because the contamination is customarily in a confined state, and a polluter rarely is identified. Liability is thus allocated with the constructor due to its construction activities. This has been established by the practice of the Finnish Supreme Administrative Court. In these cases, liability covers both remediation under public law and liability for environmental damage of third parties. Afterwards, if the "real polluter" would be identified, the constructor may claim the said costs from the polluter.

The Supreme Administrative Court has ruled that the polluter was responsible for remediation of contaminated soil of water bottom (Fi: *vedenpohja*), including sediments, where a contaminant ended up in a water body through the rainwater drainage. In these circumstances the court expanded the interpretation of Section 79 of the repealed (previous) Environmental Protection Act (86/2000) which did not include soil of water bottoms and sediments. In other circumstances, e.g. when there is no direct connection as in the case was established by the rainwater drainage, an expanding interpretation might not be possible.[104]

The Act on Remediation of Certain Environmental Damages (383/2009), which has implemented the Environmental Liability Directive[105], is categorised as public environmental liability legislation. The act is applicable to a rather narrow definition of serious environmental damages; for example, impairment to the diversity of nature and harmful changes of water bodies[106] and is not relevant for the purposes of this study.

6.5.2 Private Environmental Liability

Private environmental liability is regulated by the Act on Compensation for Environmental Damage (737/1994). Liability under the act is strict which means that liability does not require negligence on the part of the polluter, given that a causal connection can be established between a specific activity and the damage at hand. The Environmental Liability Act entered into force on 1 January 1995 and is applicable to damages having occurred after that, while damages occurred prior to that date are assessed on the basis of the Act on Compensation for Damages (412/1974), according to which negligence on the part of the polluter is required to trigger the liability.

[104] Case KHO:2012:65.
[105] Directive 2004/35/EC of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage.
[106] Section 1 of the Act on Remediation of Certain Environmental Damages (383/2009).

7 Conclusions

7.1 Analysis from the actors' perspective

Actor	Responsibility	Based on legislation
Importers and retailers	-Cannot place biocidal products on the market (sell) unless the active substances are approved by Tukes (violation subject to fine for *chemical offence*). -Classification, Labeling and Packaging obligations.	The Chemicals Act, The CLP Regulation
Boat owner (having their boat at a marina or on private land)	Shall use biocidal products in a "qualified manner" and in accordance with instructions of use (violation subject to fine for *chemical offence*). Applies to the use of biocidal products irrespective of where it is taking place.	The Chemicals Act
	Shall adhere to municipal environmental protection regulations (if any) with respect to maintenance of boat (removal and reapplication of paints).	Municipal environmental protection regulations for marinas
Marinas, boat clubs	Shall compile a waste management plan if the marina has at least 50 moorings or 50 winter storage places, and if a mooring fee or a harbour fee is payable.	The Maritime Environmental Protection Act, The Environmental Protection Act
	N.B. Marinas and boat clubs are not responsible for the actions of individual boat owners as to the use of antifouling paints (see boat owner's responsibility when using biocidal products).	
ELY Centres	-Shall propose measures by which the environmental quality standards of the Hazardous Substances Decree are not exceeded. - Supervises compliance with the obligations of the Environmental Protection Act which do not belong to the municipalities. - Receives notices on contaminated land, a so-called "PIMA" notification. -General supervisory role with respect to the objectives and measures of water management policy, also in the light of permitted (environmental and water) activity.	The Water Management Act, The Environmental Protection Act, The Degree of Contamination and Remediation Needs (214/2007).
	-Monitors compliance of harbours' waste management regulations.	Maritime Environmental Protection Act
Tukes	-Supervises and enforces obligations related to the placing of biocidal products on the market.	The Chemicals Act
Municipalities, cities	-Shall supervise the waste management of marinas, and potentially contaminated soil and sediments. -Permitting and supervisory authority for small-scale activities under the Environmental Protection Act.	The Environmental Protection Act, Municipal environmental protection regulations for marinas

7.2 The way forward

The legal analysis reveals that Finnish environmental and waste regulations on vessels, leisure boats and marinas appear to somewhat overlook the impact of antifouling paints and practices on water bodies and the marine environment. Instead, regulations focus primarily on wastes originating from vessels and leisure boats in operation, leaving antifouling practices and the wastes it generates (dust and scrapings from removal of bottom paints) without clear norms.

The impact of hazardous and dangerous substances is nevertheless recognised by the environmental quality regulation and highlighted by relevant river basin management plans and the marine strategy. Due to their legal nature as administrative decisions, these cannot serve as a legal basis for obliging persons (legal and organised) because of constitutional reasons. The plans do address the presence of certain antifouling paints/substances, but the amounts are not quantified. In fact, there seems to be no extensive knowledge on the quantities of the relevant antifouling substances in Finnish surface/coastal waters. Reducing the impact of hazardous substances is recognized by river basin management plans, but reducing of the impact of antifouling substances are not proposed as specific measures in the relevant programmes of measures. This goes to show that the specific problem related to antifouling paints indicates that more precise tools and measures are necessary. The following section proposes certain measures which could be further assessed with the view of reducing the impact of antifouling substances on surface waters and the marine environment.

As for the way forward, we recognise *two main routes* that could help reducing the impact of antifouling substances in Finnish coastal waters. Certain instruments within these routes could also be combined to some extent.

1. The first is the 'voluntary route' which initially can be considered preferable as it is a "soft" way of introducing a change and is expected to meet less resistance in comparison with direct administrative control. We have identified the following four options:
    i. The first option of the voluntary route is based on the already existing "Roope harbour programme" introduced by Keep the Archipelago Tidy's environmental programme for marinas; the "Roope" marinas. A possibility could be to develop the programme by tightening and concretising the requirements of the programme and assigning a supervisor to monitor compliance of the requirements. The alternative methods for antifouling paints could also be included as one of the requirements of the programme.
    ii. The second possible voluntary-based option could be to include requirements concerning environmental protection into the boat club's articles of association when the clubs are registered associations in accordance with the Association Act (503/1989). With the articles of association, the members of the club could be obliged and/or recommended to take environmental protection measures in relation to antifouling practices, and these could thus form a precondition for maintaining club membership. The boat clubs could also be encouraged to adopt codes of conduct concerning environmental protection in their day-to-day activities at the boat club. The clubs would also have to make available to their members the possibility to adhere to such codes of conduct by making available the necessary facilities to this end.
    iii. The third possibility could be to create an environmental labelling programme for the alternative antifouling techniques. The labelling programme should then contain also an assessment of the effectiveness of the possible methods.
    iv. As explained in sections above, the municipalities (and public corporations) commonly own and lease the land used by marinas/boat clubs. A fourth possibility could thus be to promote the inclusion of environmental provisions in such lease

agreements. For example, antifouling could be explicitly addressed in terms of best environmental practices, where the tenant would be obliged to use alternative non-toxic methods and paints free of hazardous substances in combination with contractual penalty. The said lease agreement could also confer the liability for remediation of contaminated soil/sediments/water to the marina/boat club, which could encourage them to internally promote these best practices.

2. The second route would consist of direct regulation, for which we have identified three options:
    i. A decree on leisure boat marinas' waste management (regardless of its size). Since the Maritime Environmental Protection Act excludes marinas and harbours of a certain size from its obligation to compile a waste management plan, small-scale recreational boating is left without norms in this sense. A decree enacted on the basis of the Environmental Protection Act could take a holistic approach to the leisure boat marinas of which antifouling practices would be only one part, and on the basis of which the marina would be subject to the *registration obligation* already in place under the Environmental Protection Act for smaller-scale activity (Sections 116 and 117 of the EPA). The registration is submitted to the supervisory authority and for which no administrative decision is provided. The marina would thus regulate its own activity on the basis of the rules in the decree, and the designated supervisory authority would perform supervision of the marina on the basis of the information provided in the registration. The decree could contain more or less specific information on alternative antifouling methods ("scrubbis", tarps, etc.).
    ii. Another possibility is to introduce regulation on the basis of the Act on Waterborne Traffic. Formally, the act already allows the issuing of detailed regulation on antifouling practices and contains supervision and penalty provisions requirements are neglected. The person who intentionally or negligently violates obligations or regulations issued under the act shall be sentenced to pay a fine for a *waterborne offence*. In this type of solution, the regulated actor would be the private person and not the marina. Enforcement would be the responsibility of the relevant ELY Centre.
    iii. In the Finnish Government Programme of 27 May 2015, an annual tax is set for registered boats. It might be possible to take environmental aspects into account in setting the amount of the tax. At least it could be worthwhile to discuss if financial control could be possible in this context.

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