



# Permitting practice for marine net cage farms on Åland and in Finland

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## Description

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<b>Abstract</b> The Aquabest project strives to identify the best practices for aquaculture in the Baltic Sea region, and thereby to also highlight and understand what are the bottlenecks preventing the expansion of aquaculture production in the area. This report builds on previous work within Aquabest, which indicates that the complexity of the legal environment, and in particular environmental legislation, constitutes a main bottleneck. The authors scrutinize and compare the environmental permit legislation and practice in mainland Finland and on the autonomous Åland Islands. Results suggest that the environmental permit is the most important permit for aquaculture in both Finland and on Åland, and that the different legal bodies are interpreted in a similar way. The most important factor contributing to the rejection or limitation of permit applications in both Finland and Åland appears to be water quality issues. Localisation of the farm also plays a crucial role, Åland having its own Fish Farming Decree stipulating where fish farms are to be situated. In both Finland and on Åland, localisation plans for aquaculture are to be adopted, but legal status remains unclear. Under the EU Water Framework Directive, both Finland and Åland have adopted water resource management plans. These plans play a direct role in permitting practice in Finland but a rather indirect one on Åland. Instead, a stipulation of the Åland Water Act, nick-named the "stop section", is often referred to in order to limit discharges from aquaculture on Åland.		
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## 1. Background

As a flagship project under the EU Strategy for the Baltic Sea Region, the Aquabest project strives to identify the best practices for aquaculture in the region. Sustainable aquaculture is seen as a potential candidate for bridging the gap between the high level of EU seafood consumption and the lower volume of captures from fisheries,<sup>1</sup> why the reasons for the EU aquaculture stagnation since the 2000's should be addressed in the upcoming EU funding period 2014-2020. Through a stakeholder survey<sup>2</sup> and legal questionnaires,<sup>3</sup> the Aquabest project has already in its previous work identified bottlenecks for the expansion of aquaculture in the Baltic Sea area. A main bottleneck is the complexity of legal regulation, and in particular that of environmental permit procedures. In the following report, the permitting systems in mainland Finland and on the Åland Islands will be presented and analyzed. As an autonomous part of Finland, the spheres of environment, water and fisheries law belong to the Åland's own legal competence, which is why two systems within the same country are interesting from a comparative perspective. As both Finland and Åland are part of the EU, environment and fisheries legislation is to a certain degree harmonized. At the time of writing, the EU Member States are working on new operational programmes for the European Maritime and Fisheries Fund (EMFF). Åland is writing a programme that will be included in the Finnish operational programme. As an ex ante condition for the Fund, Member States must also develop national strategies for aquaculture. In order to assist the Member States in this work, the Commission released "Strategic guidelines for a sustainable development of EU aquaculture"<sup>4</sup> in April 2013. The strategic guidelines encourage the Member States to simplify administrative burdens and shorten the licensing time. In order to be able to do this, information on the procedure and applications should be collected by the end of 2013. Simultaneously with being an Aquabest output, this work contributes to the collection of licensing information and sets out to find reasons for the production stagnation of fish aquaculture in Finland, which is highlighted in the following section.

As a limitation, the study only undertakes to review environmental permits of marine net cage farms in Finland and on Åland, as these are the dominant production type in Finnish and Ålandic aquaculture.

Vesa Leskinen of Helsinki University has been responsible for the parts of the text concerning Finland, while Petra Granholm of the Åland Government has been responsible for the Åland parts of the text and the general introduction and conclusion.

### 1.1. Finnish aquaculture production

Aquaculture has existed in Finland and on the Åland Islands since the late 70's and is dominated by cultivation in open sea cages. Rainbow trout is the most cultivated species, but in recent years also European whitefish and sea trout has been cultivated to a lesser extent.

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<sup>1</sup> Strategic guidelines for a sustainable development of EU aquaculture COM (2013) 229 final, p.2.

<sup>2</sup> Reported in Eskelinen et al.: Stakeholder's Attitudes to the Development of Aquaculture in the Baltic Sea Region, Reports of Aquabest project 2 / 2012.

<sup>3</sup> Reported in Paavola et al, Environmental regulation of aquaculture in the Baltic Sea region, Reports of Aquabest project 3 / 2012 and Paavola et al., Legal regulation of aquaculture in the Baltic Sea region - Frameworks, practices and farmers' attitudes, Reports of Aquabest project 1 / 2013.

<sup>4</sup> Supra note 1.

In 2012, Finland featured 482 aquaculture production facilities, of which 178 specialized in food fish production, 105 in fry production and 205 were natural food ponds.<sup>5</sup> Out of the food production facilities, about two thirds of the production units are located in the sea and only about one third in fresh water bodies.

The most important product in 2012 was rainbow trout with a total production of almost 11 275 tons, representing over 89 % of total production volume and 81 % of total production value. Second to rainbow trout is European whitefish, representing almost 10% of total production volume and 17 % of production value.

In 2012, the total production volume of Finnish aquaculture was 12 659 tons with a total value of 44.6 million euros. This year, the Åland production represented 55 % (5 715 tonnes) of Finland’s total production (10 448 tonnes) of fish for human consumption in the sea. If also inland production is included, the Åland production represents around 45 % of the total Finnish production.<sup>6</sup>

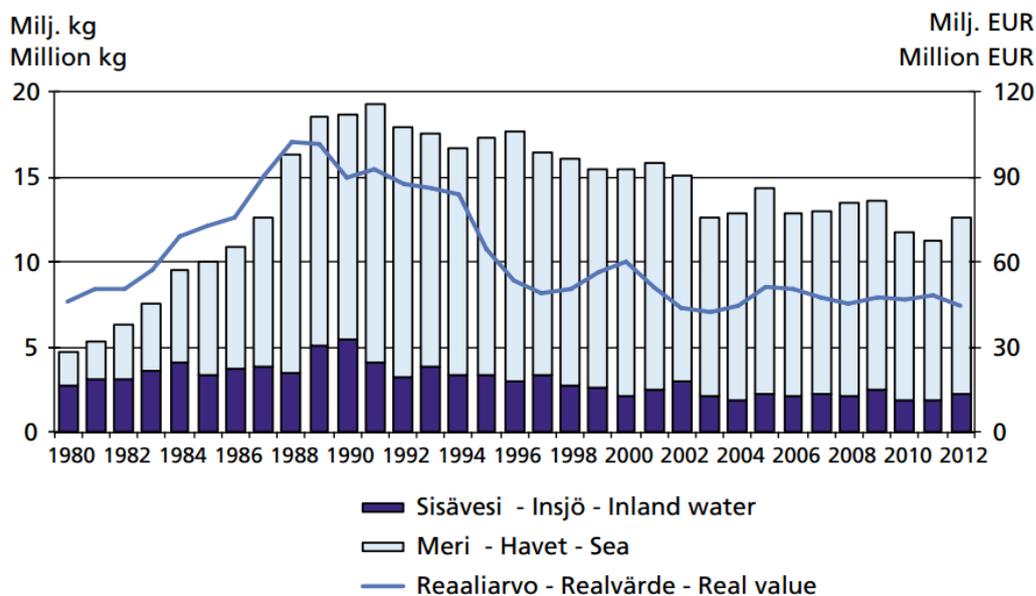


Figure 1. Food fish production (ungutted fish) and its value in 1980–2012, at 2012 prices level (adjusted by consumer price index). Source: Official Statistics of Finland 5/2013, Finnish Game and Fisheries Research Institute.

## 1.2. Brief history

In the beginning of Finnish and Ålandic aquaculture, pioneers of aquaculture mainly used chopped Baltic herring as fish feed, meaning that the net load on the Baltic Sea as a whole was negative. As the farms often were in shallow and enclosed bays due to technological limitations, the local effects on

<sup>5</sup> Finnish Game and Fisheries Research Institute, Aquaculture 2012, Official statistics of Finland: Agriculture, Forestry and Fishery, 5/2013.

<sup>6</sup> Ibid.

sediment and surroundings were detrimental. During the 80's, some farmers invested in systems to prepare moist or semi-moist feeds. These feeds had a herring content of 40-80 % depending on the machinery. Around 1989-1990, the interest from the fur industry in herring-based feeds grew as herring was cheap. At the same time, a ban on using chopped herring was introduced as a result of the negative local environmental effects. In addition, around 1993-1994 fish feed with herring was found to contain elevated levels of dioxin and dry feeds became more competitive. Another reason for the new dominance of dry feed was another ban on using non-cooked fish for feeds in the coastal area as there was a risk of spreading the fish disease VHS.<sup>7</sup> As the main nutrient composition in industrial dry feed originates from fish meal and crops outside of the Baltic Sea area, the Baltic Sea aquaculture now stands for a net contribution to the nutrient load. As an answer to this, environmental regulation is strict both in Åland and in Finland and new establishments of open sea cages are almost impossible, if no compensation or nutrient emission reduction measures are undertaken. With improved legislation fish farms on Åland have moved to better locations with greater depths and water circulation.

## 2. Permits needed for aquaculture

For aquaculture in both Finland and on Åland, the most important permit is the environmental permit. Other possible requirements in order to establish or renew a license for a fish farm can involve building permits and requirements for localization or environmental impact assessments. The analysis in this report is delimited to environmental permits only, why other requirements are only described briefly in this chapter.

### 2.1. The environmental permit

In **Finland**, aquaculture is regulated by environmental protection legislation. The Environmental Protection Act<sup>8</sup> requires an environmental permit for all activities that pose a threat of environmental pollution. Activities subject to a permit are detailed in the Environmental Protection Decree.<sup>9</sup> According to Paragraph 10 of Section 1 of the Decree, an environmental permit is required for fish farms or hatcheries with

1. an annual consumption of at least 2 000 kilograms of dry feed or a nutritionally equivalent amount of other feed; or in which
2. the annual growth (proliferation) of fish is at least 2 000 kilograms; or in which
3. natural feed ponds or groups of ponds are at least 20 hectares in area.

This requirement essentially implies that, in practice, all relevant types of commercial aquaculture activities are subject to an environmental permit in Finland.

The **Finnish** environmental permits for aquaculture are processed and granted by State Regional Administrative Authorities (RSAs). There are six RSAs in total, but the processing of environmental permits has been centralized to four authorities: the Regional State Administrative Agency for Eastern Finland, the Regional State Administrative Agency for Western and Inner Finland, the Regional State

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<sup>7</sup> Historic data from Jouni Vielma, senior research scientist at the Finnish Game and Fisheries Research Institute.

<sup>8</sup> Section 28 of the Finnish Environmental Protection Act (EPA), 86/2000 (Fin. *ympäristönsuojelulaki*)

<sup>9</sup> Section 1 of the Finnish Environmental Protection Decree, 169/2000 (Fin. *ympäristönsuojeluasetus*)

Administrative Agency for Northern Finland, and the Regional State Administrative Agency for Southern Finland.

On **Åland**, the legal basis for the environmental permit is found in the Åland Environmental Protection Act<sup>10</sup> in conjunction with the Åland Water Act.<sup>11</sup> In accordance to these acts, activities emitting eutrophying substances directly to the surface water are subject to an environmental permit, including fish farms producing more than 20 tons fish annually – this threshold is only expressed as a limit in production, not in amount of feed. Fish farms of more than 1 ton do not require a permit but a so-called environmental inspection.<sup>12</sup> Similar to the mainland legislation, fish farms today are rarely smaller than these thresholds and most farms on **Åland** today fall under the permit obligation. Also an alteration or expansion of activities previously subjected to a permit has to undergo a new permit procedure – or, if the alteration or expansion in itself does not fall under activities requiring a permit, an environmental inspection is called for.<sup>13</sup>

Since 2008, the Environmental and Health Protection Agency of the Åland Islands (ÅMHM) handles applications for environmental permits for aquaculture on **Åland**. Permits are then approved by a five-member Approval Commission.<sup>14</sup>

As far as material permit conditions in **Finland** go, the provisions are found the **Finnish** Environmental Protection Act. According to Section 43 of the Finnish EPA, an environmental permit shall contain necessary regulations on:

- 1) emissions, emission limit values, the prevention and limitation of emissions and the location of the site of emission;
- 2) wastes and reduction of their quantity and harmfulness;
- 3) action to be taken in case of a disturbance or in other exceptional situations;
- 4) measures to be taken after cessation of operations, such as remediation of the area and prevention of emissions;
- 5) other measures to prevent, reduce or assess pollution, the risk thereof and adverse effects caused by it.

Furthermore, in the case of non-industrial activities such as aquaculture and if the abovementioned regulations do not, due to the nature of the activity, provide the means for sufficient prevention or reduction of harmful environmental effects, the authority may issue necessary regulations concerning production volume, feed content or energy in the permit.

Conditions for environmental permits for fish farming in **Åland** are stipulated on the basis of the Åland Environmental Protection Act and the Water Act and very similar to those of the Finnish Environmental Protection Act,<sup>15</sup> which is natural as the provisions derive from the EU IPPC-Directive concerning integrated pollution prevention and control.<sup>16</sup> The sections in the Ålandic acts contain instructions and conditions in order to prevent negative effects on the environments.

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<sup>10</sup> Landskapslag om miljöskydd, 2008:124, Section 10) hereinafter the Åland Environmental Protection Act.

<sup>11</sup> Vattenlag för landskapet Åland 1996:61, hereinafter the Åland Water Act, ch. 6 Section 16 § a).

<sup>12</sup> Swe. *miljögranskning*. See Landskapsförordning om miljöskydd 2008:130, hereinafter the Åland Environmental Protection Decree, Section 1 and attachment 1, Para 2.4.

<sup>13</sup> Åland Environmental Protection Act, Section 11.

<sup>14</sup> Swe. *prövningsnämnden*.

<sup>15</sup> Åland Environmental Protection Act, Sections 24 and 26 and the Water Act, Ch.4 Section 7.

<sup>16</sup> Directive 2008/1/EC Of the European Parliament And Of The Council of 15 January 2008 concerning integrated pollution prevention and control.

Similarly as in Finland, if the need arises to limit the production capacity, the **Åland** permit authority has the possibility to do so despite an enumeration of the above-said conditions. The instructions and conditions may not prescribe the use of a certain technology, but they may be stricter than stipulations of threshold limit values, environmental quality norms or specified minimum requirements. Such stipulations shall, if they are stricter than permit conditions, be taken into concern if they have been issued after a permit has been given.<sup>17</sup> The Åland Water Act also calls for “appropriate protective measures”.<sup>18</sup> This is specified as an obligation to use the best technological solution that is economically feasible. Such considerations must balance cost and benefit, and at the same time take into account the affected water and its characteristics.

Another possible part of the **Åland** environmental permit is the stipulation about the operator's own control of the activity. An account of the activity's emissions, waste and waste management, general management and environmental impact including the state of the environment after concluded operations can be part of such a control programme. Operators of similar activities can be prescribed to organise themselves around a joint control programme. This is the case for the fish farmers on Åland, who carry through their own control programme jointly. The control programme follows the quality of the water and sea floor around the fish farming units. The authorities monitor the compliance with the permit through this control program and by biannual visits/inspections.

The **Finnish** EPA contains similar provisions regarding the monitoring and supervision of activities as those in Åland. According to Section 46 of the EPA, the necessary regulations on the operative monitoring of the activity, its emissions, impact and waste management must be issued as part of the permit. To facilitate monitoring, the permit must include provisions on measurement methods, the frequency of measurements, potential other information that the operator needs to provide as well as provision on how the results of monitoring are to be submitted to the permit authority. Furthermore, when a regulation on monitoring the impacts of an activity on waters or seas is issued, consideration must be given to what is deemed necessary in the relevant water resources management plan. The permit authority may also order several permit holders to jointly supervise the impact of their activities (*joint supervision*) or may approve participation in monitoring performed in the region in order to supervise activities.

## 2.2. Localisation requirements

In **Finland**, the localization assessment for open sea cages is based on the Environmental Protection Act's general provisions on the selection of location of an activity. However, in the Finnish Council of State's national strategy for aquaculture 2015<sup>19</sup> the development of location guidance plans (Fin. *si-jainninohjaussuunnitelmat*) for aquaculture is one of the key focus areas. The development of location guidance plans is coordinated by regional Centres for Economic Development, Transport and the Environment and the plans are expected to be finalized during 2013. These guidance plans are not legally binding, but are supposed to serve as a useful tool for both authorities and the aquaculture industry in identifying environmentally and socially suitable sites for sea cage farms.

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<sup>17</sup> Åland Environmental Protection Act, Section 24.

<sup>18</sup> Åland Water Act, Ch.4 Section 7.

<sup>19</sup> Valtioneuvoston periaatepäätös – Kansallinen vesiviljelyohjelma 2015.

The general provisions on the selection of location of an activity are laid out in Section 6 of the **Finnish** EPA. These provisions are relatively general and essentially state that activities must be located so that they will not cause or pose a risk of pollution that can be feasibly prevented. Furthermore, the nature of the activity, the probability of pollution occurring, accident risk, legally binding land-use plans as well as other possible locations need to be taken into account when considering the location.

In addition to the general provisions in the **Finnish** EPA Section 6, the general preconditions for granting a permit as laid out in EPA Section 42 and in documents called Water Resource Management Plans (WRMPs) also have an indirect impact on the location of an activity. In **Finland**, WRMPs are founded on the implementation of the EU Water Framework Directive, and they are essentially informative documents that lay out goals and measures for regional water resource management efforts. The role of WRMPs is based on EPA Section 50, which states that when assessing the significance of environmental pollution, the permit shall take account of what is set forth in a Water Resources Management Plan on aspects related to the state and use of waters and the marine environment in the area of impact of activities.

For an aquaculture activity on **Åland**, no specific land use plan is needed at present. In general, the Åland Planning and Building Act<sup>20</sup> does not cover water areas. However, the Åland Water Act contains requirements on location. An operation hazardous to water (Swe. *vattenfarlig verksamhet*), such as a fish farm) or a water establishment (Swe. *vattenföretag*, such as a mussel farm) cannot be contrary to plans including land use plans.<sup>21</sup> Furthermore, an operation hazardous to water (such as a fish farm) may only be carried out in a place or in places where the least possible damage is made to the water environment and where the prerequisites are or can be created without unreasonable cost increases.<sup>22</sup> In addition to this, the operator has to undertake reasonable protective measures to avoid a degradation of the water environment.<sup>23</sup>

Uniquely for **Åland** so far, the piece of legislation which steers localisation of fish farms is the special Åland Fish Farming Decree<sup>24</sup> given on the basis in the Åland Water Act.<sup>25</sup> A fish farm must, in its entirety, be placed in an area that according to an official sea chart is at least 10 m of depth, or if the yearly production exceeds 500 tons, at least 15 m of depth. If no depth indications are in place for a 500 m radius from the centre of the farm, the operator need to show that the location does fulfil the necessary depth requirements. Fish farming with a yearly production exceeding 25 tons can only be carried out in a location at least 200 m outside the "inner archipelago areas" indicated in a map attached to the Decree. These areas have a lower water turnover. In addition, the location needs to have an exposure value (the sum of the diagonals in the straits delimiting the water area divided by the surface area multiplied by 100) of at least 0,75, or an exposure value ( the number of nine-degree-sectors within a distance of 2,5 km from the fish farm that do not reach land) of at least 6. The exception to these rules is winter time storage of fish between 15th of October and 15th of May. If extreme

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<sup>20</sup> Plan- och bygglag 2008:102, hereinafter the Åland Planning and Building Act.

<sup>21</sup> Åland Water Act, Ch.4, Section 5.

<sup>22</sup> Åland Water Act, Ch.4, Section 6.

<sup>23</sup> Åland Water Act, Ch.4, Section 7.

<sup>24</sup> Landskapsförordning om odling av lax och regnbågslox i havet 2007:57, hereinafter the Åland Decree on Fish Farming.

<sup>25</sup> Åland Water Act, Ch.4, Section 6.

weather conditions prevail a move at times other than indicated may take place.<sup>26</sup> There is as of yet no location plan similar to that of Finland, but work has been made in order to adopt one in connection with the upcoming Åland aquaculture strategy.

The Åland Fish Farming Decree only concerns the species of rainbow trout (*Oncorhynchus mykiss*) and salmon (*Salmo salar*). Interestingly, in a permit given for the species of whitefish (*Coregonus lavaretus*) in 2009,<sup>27</sup> the Åland Fish Farming Decree was discussed and it was pointed out that neither did the location in question fulfill the requirements in the Decree, nor did the farming of whitefish qualify as a pilot project, which is exempted from the Decree requirements. As whitefish farming has a higher impact on the environment, being a less established species, the emission quota was cut down. The permit was given, but the production volume was not as high as had been applied for. In 2013, however, the Supreme Administrative Court ruled that the farm will have to move,<sup>28</sup> but avoided referring to the Åland Fish Farming Decree. Instead, the impact on the environment of the whitefish farm was put in relation to the Åland Water Act stipulation<sup>29</sup> on choice of locations for activities hazardous to water, i.e. the section, which the Decree is built on. This section stipulates that the activity should be performed where the least possible damage for the water environment will be made.

Furthermore, the Åland Water Act contains a stipulation about respect of public and individual interests. Operations hazardous to water and water establishments has to pay attention to the fish population and the possibilities to fish, transportation, possibilities for other activities in the area, possibilities for recreation, natural beauty, the cultural values and the well-being of the area.<sup>30</sup>

### 2.3. Building and water permits

In addition to environmental permits, aquaculture farms are subject to other types of permitting processes in **Finland**. Two important ones are the building permit and the water permit. However, as the focus of this report is on environmental permits, these other two permit types are only briefly presented here.

In **Finland**, a building permit is required for the construction of a building. Building permits are regulated in the Land Use and Planning Act and are approved by the building supervision authority of the local municipality. The net cages of marine net cage farms are not buildings, and therefore the cages per se do not require a building permit. However, the construction of the buildings needed to support the farm does naturally require building permits.

In **Finland**, a water permit is needed for an activity that alters or may alter the position, depth, water level or water flow or certain other properties of a water body are also subject to a permit under the Finnish Water Act<sup>31</sup> (water permit). Therefore the physical cages of a sea cage farm typically require a water permit. Like environmental permits, water permits are also processed and granted by the State Regional Administrative Agencies. Permit application concerning water and environmental permits shall be processed together and included in one decision, unless this is deemed unnecessary for a special reason.

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<sup>26</sup> The Åland Decree on Fish Farming, Section 3.

<sup>27</sup> Decision ÅMH-Pn 33/09, 16.12.2009.

<sup>28</sup> Decision of the Supreme Administrative Court, 25.6.2013, 1493/1/11.

<sup>29</sup> Åland Water Act, Ch.4, Section 6.

<sup>30</sup> Åland Water Act, Ch.4, Section 4.

<sup>31</sup> Finnish Water Act, 587/2011 (Fin. *vesilaki*), Ch.3, Section 2.

As far as building permits on **Åland** are concerned, none are required for aquaculture in general, but this is an issue of interpretation. On Åland, it is municipal competence to issue building permits for a number of constructions enumerated in the Åland Planning and Building Act Ch. 13. A construction on water which will be used for activities including business operations for more than two months is subject to a building permit. However, so far, this section has been interpreted to concern only constructions in direct connection to land, such as a dock in a harbour. As stated above, it is unclear to what extent the Åland Planning and Building Act covers water areas other than harbours.<sup>32</sup> In such cases, the Åland Water Act is supposed to be read in conjunction with the Åland Planning and Building Act.

**Åland** legislation does not recognize the kind of water permit that is necessary in Finland.

## 2.4. Environmental Impact Assessment

On **Åland**, it is the recently revised Environmental Impact Assessment Act<sup>33</sup> and the Environmental Impact Assessment Decree<sup>34</sup> that regulates environmental impact assessment (EIA). The Åland EIA Decree enumerates the decisions for which EIA is necessary in its 2nd section. This includes the instances mentioned in the Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment 85/337/EEC. Here “salmon breeding” is subject to assessment of the Member States. In general, fish farms (or mussel farms) on **Åland** are not subject to EIA, something that is evaluated and stated for each environmental permit submitted. However, the EIA Decree stipulates that an authority shall consider an EIA as basic data for a decision, if the character or extent of environmental impact of the project is comparable to a project enumerated for an EIA. This means the total environmental impact of the project, including parts of the project already carried through. Of particular concern is the character of the project, its environmental impacts and its localisation. Hence, the threshold for an aquaculture project on **Åland** being subject to an EIA is very much at the discretion of the authorities. None of the environmental permits given for fish farms in Åland during the period 2007-2013 included an EIA or a request for such. At times, EIA's or at least an “environmental description” (Swe. *miljöberättelse*) were required for fish farms under former legislation.

The supranational base for EIA legislation is the same on the mainland **Finland**. In Finland, the EIA is controlled by the Act on Environmental Impact Assessment Procedure (468/1994). According to Section 4 of the act, an EIA shall be applied for projects that are specified by decree (EIA decree 713/2006). Fish farming or aquaculture activities are not specified as such activities in the EIA decree, so therefore the principal rule is that fish farming does not require an EIA. However, the second subsection of Section 4 of the EIA Act states that an EIA is necessary in special circumstances where a

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<sup>32</sup> One Ålandic farmer has stated that he needed a building permit for his fish farm in an application process some years ago. The circumstances surrounding this are somewhat unclear, but it seems to have been connected to EU-funding and carried out in an ad hoc-way. However, this is not a general rule. To date, Åland does not have a recirculation farm, but a pre-study has been undertaken for a 3000 ton rainbow recirculation (RAS) farm on land. The pre-study suggests that this does fall under legislation covering land-based industries, and it is highly likely that a building permit will be needed on the basis of the Planning and Building Act Ch. 13, as building permits are necessary for all buildings. Accordingly, the Åland Government Guttorp fry hatchery, which is also situated in a building on land, needed a building permit.

<sup>33</sup> Landskapslag om miljökonsekvensbedömning, 2006:82, hereinafter the Åland EIA Act.

<sup>34</sup> Landskapsförordning om miljökonsekvensbedömningar, 2012:50, hereinafter the Åland EIA Decree.

project or an alteration to a project, also taking into account the combined impact of different projects, will probably have significant adverse environmental effects comparable in type and extent to those specified in the EIA decree. In practice, the application of this exception to fish farming projects seems to be very rare in **Finland** and none of the projects or permits analysed in this report have been subject to an EIA.

### 3. The environmental permit process

In the following empirical section, a sample of 19 **Finnish** environmental permits are analysed in order to shed light on the permitting praxis of new marine net cage farms in Finland. The permits analysed consist of 4 permit applications for new marine net cage farms and of 15 applications for the expansion of production at existing marine net cage farms submitted in 2008-2012. The applications for the expansion of existing farms are typically (in 14 out of the 15 analyzed applications) submitted in conjunction with a review of an existing permit.

The analyzed sample of 19 permits is selected from a dataset including all environmental permit applications for aquaculture submitted in Finland in 2008-2012. This full dataset contains 180 permits and has been manually collected from the online archives of the permit authorities by researchers at the Faculty of Law at University of Helsinki. The full dataset thus should, subject to the possibility of errors in the search process, include almost all permit applications submitted in **Finland** during 2008-2012.

The analysed sample of 19 Finnish farms is selected from the full dataset based on two criteria: the permit application must be for an entirely new marine net cage farm or the expansion of production at an existing a marine net cage farm. The justification for these two sampling criteria is that it allows us to focus on the permitting praxis of new marine net cage production capacity while also keeping the amount of analyzed permits at a reasonable level in the interest of research economics.

The total number of **Ålandic** permits included in this study is also 19, which encompasses all environmental permits for aquaculture in the period from 2007-2013. This includes also smolt farms, relocations and fusions of farms, which occurred after the entry into force of the Fish Farming Decree. The time span differs from that of the Finnish analyse in order to receive a larger sample. In the analysis of rejected applications, data from the years 2002 and 2003 has been used in order to widen the sample. The permits and applications have been retrieved by the author from the website of ÅMHM and the archives of the Åland Government and ÅMHM, where they are available to the public. Most permits in the period 2007-2013 can from a legal point of view be seen as “new” permits, but in fact it is renewals of existing permits. At the time of writing, six permit applications are in the pipeline at ÅMHM, out of which four are applications for extended productions also. All of them except for one are for renewal of permits. One smaller application for an environmental inspection (farm of less than 20 tonnes yearly production) is also in process. All permit applications concern rainbow trout farming, except for one, which concern whitefish.<sup>35</sup>

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<sup>35</sup> Decision 04.03.2003, MPN-01-67.

### 3.1. The total duration of the permit process

The total durations of the permit process for the analyzed four **Finnish** new marine net cage farm applications were 13, 15, 22 and 29 months, implying an average duration of 20 months. The average total duration of the 15 applications for the expansion of existing farms was 16 months (the minimum duration being 10 and the maximum duration being 33 months), which is a bit shorter than for the applications for entirely new farms. However, it is important to note that with such a small sample size these average durations of the permitting processes are highly dependent on the nature of the individual cases in the sample.

Based on the 19 new permits given on **Åland** in the time period between 2007 and 2013, the average processing time was 21 months. The span varied between 2 months as the fastest to 66 months as the longest case. The latter case had been referred from the Åland administrative court in 2002 before it was finally concluded in 2007. In some cases, the date of the last complement was chosen as the starting date of the processing time, as the complement may have changed the case significantly. This concern cases such as species change, change from slaughter fish production to smolt production or change of farming location.

### 3.2. The duration from last clarification to the permit decision

The total duration of the permit process from the last clarification to the permit decision is applicable for three of the the analyzed four **Finnish** new marine net cage farm applications. For these three permits, the duration of the process after the last clarification took 4 months on average. In the case of the analyzed 15 applications for the expansion of existing activities, the processes took on average 8 months after the last clarification.

On **Åland**, this is applicable in seven cases. However, as stated before, sometimes the last clarification has modified the case so much it is treated as an entirely new case, and hence the date of the last clarification has been counted as the starting date of the process in the above mean processing time calculations. The average time from the last clarification to the end of process was for the seven cases seven months. Taking out the two cases with significant changes, the mean processing time from the last clarification was 3,6 months. On such a small sample, it is difficult to draw conclusions – it cannot be concluded that the need for clarifications is the reason for slow process on Åland as the longest handling time was almost five years long and did not include clarifications.

### 3.3. The validity length of the permit

In **Finland**, the Environmental Protection Act does not take a clear stand on whether permits should be indefinite or for a fixed term. The Act only states that depending on the matter concerned, environmental permits are issued either until further notice or for a fixed period.<sup>36</sup> In the analyzed sample, all of the permits were issued for a fixed term. The average validity of the permits is 8 years, with the shortest permit being valid for only 3 years and the longest permits being valid for 10 years.

The **Åland** Environmental Protection Act stipulates that an environmental permit is to be given for an unlimited period of time, unless specific reasons call for a limitation.<sup>37</sup> Without exception, fish farm-

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<sup>36</sup> Environmental Protection Act, section 52.

<sup>37</sup> The Environmental Protection Act, section 18.

ing has been seen as an exceptional source of pollution directly into the surface water, why all permits in the time period of 2007<sup>38</sup>-2013 have been restricted in time. According to the Åland Environmental Protection Act, a time-limited permit should specify when an application for a new permit should be handed in. However, also a permit that is not limited in terms of time requires a specification of when an application for inspection and revision of the permit conditions should be handed in. In addition, also a time-limited permit can, in specific cases, include stipulations about revision of conditions.

As for the validity of the Ålandic permits in the study, the two latest permits given for a period of ten years (126 and 127 months respectively) pushed the average validity time to 73 months. The average is, however, not relevant in these circumstances, as all previous permits prior to 2013 had been given for five years more or less- varying depending on the fact that the closure of permit always is the last day of a year.

## 4. Rejections of permit applications

From the point of view of developing the volume of marine net cage aquaculture in **Finland**, it makes sense to examine past permitting praxis regarding applications for the expansion of existing marine net cage farms. The purpose of this analysis is to identify the pain spots of marine net cage permitting, i.e. to identify which administrative or environmental factors result in the rejection of applications for new farms or the expansion of existing ones.

Of the examined four applications for new farms in Finland, three were accepted and one was rejected. Of the 15 applications for an expansion, only one was accepted, two were partially accepted, and 12 applications were rejected. The rejected applications regarding an expansion will be analyzed in detail in the following section.

The only rejected application<sup>39</sup> in the sample regarding a new farm was part of a case where the permits of a certain bay area were up for review simultaneously. As the production quotas (i.e. the feed quotas) for the permits of the existing facilities in the bay were diminished in this review due to worsened water quality, the authorities decided that it would not make sense to give a permit to a new farm in the same bay, and the application was therefore rejected.

In the period of 2007-2013, no permit application for fish farming as such has been rejected on **Åland** as such, as the applications tend to be reformulated when a rejection is overarching. In one case, however, an application for smolt farming was written off by decision due to a highly negative public opinion. The applicant changed the location of the smolt farm and the permit was given. For the sake of comparison, three rejections to applications from the beginning of the 2000's have been analysed. These permits are not entirely comparable as different legislation was in force than today. For instance, in all three cases an EIA was performed as a consequence of the former EIA Act.<sup>40</sup> Also, the Fishfarming Decree with requirements for localization had not yet entered into force.

All **Åland** cases contained several opinions from stakeholders and statements from hearing instances. In sum, the opinions and statements show an overwhelmingly negative attitude from the public and expert instances preceding the rejections, as of a few positive. Only one of the applications

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<sup>38</sup> The same goes for permits as far back as 2002, and possibly further.

<sup>39</sup> ISY-2007-Y-248.

<sup>40</sup> See Landskapsförordning om miljöberättelser och miljökonsekvensbedömningar, ÅFS 10/2000.

was for an entirely new permit,<sup>41</sup> the two others<sup>42</sup> were for new permits on existing farming locations. The two latter had already received so-called "closure permits" for the farms.

In a rejection from 2002, the reasoning for rejection was based on the fact that the total emission load in the area already was high, including the load from other fish farming activities. Allowing a new farm would be in contradiction to sustainable development. The general argumentation was built up around the fact that fish farming activities, together with other activities hazardous to water, both in and outside Åland constitute a significant risk, which cannot be covered by the benefits of the activity. This general argumentation is reflected in the other two cases. As for the legal reasoning, the arguments were based on the portal section of the Åland Water Act laying out that water areas on Åland should be used in a way that best promotes sustainable development.<sup>43</sup> Furthermore, the aim of a water activity should be reached with the least possible damage to the environment.<sup>44</sup> These can be seen as very general provisions. What is more concrete is the so-called "stop section",<sup>45</sup> Section 5:9 of the Åland Water Act stipulating that no new or amended activities can take place in a water area where certain water quality norms have not been met or are not in place. As no such norms were established by the time of the rejection or now, this Section was referred to in all three cases. The exception to this ban on activities is, however, the use of a so-called improvements surplus, but as none of the companies had applied for such, this path was not possible. The EIA performed in the first case had not shown that the activity would not lead to increased eutrophication in the area. The argumentation for the stop section relied on the preparatory works for the Åland Water Act,<sup>46</sup> establishing eutrophication as the most urgent problem in the Baltic Sea. Therefore, no increased nutrient load could come into question. General argumentation and legal reasoning in the two following rejections were very similar.

#### 4.1. Rejections of applications for expanded production

As mentioned in the previous section, applications for the expansion of existing farms were rejected with a surprisingly high rate in **Finland** (12 out of 15, i.e. 80 %, of the applications for expansion in the sample were rejected). Section 4.2 contains a case by case analysis of nine rejected applications that were written in Finnish (three of the rejected applications were written in Swedish and are excluded from this analysis).

Of the nine analysed rejected applications, four permits<sup>47</sup> related to a case where four producers in the same area were simultaneously reorganising their operations. Therefore these four permit applications were jointly processed, and consequently the authority's decision and justifications were identical for each case. In the analysis of this report these four cases are thus treated as one. This implies that the scope of this analysis covers a total of 6 different cases where the application for the expansion of a marine net cage farm was rejected during 2008-2012.

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<sup>41</sup> Decision 01.10.2002, MPN-00-100.

<sup>42</sup> Decision 04.03.2003, MPN-01-67 and decision 04.02.2003, MPN-00-84.

<sup>43</sup> Åland Water Act, Ch.1, Section 1.

<sup>44</sup> Åland Water Act, Ch.4 Section 3.1.

<sup>45</sup> Åland Water Act, Ch.5, Section 9.

<sup>46</sup> Ålands landskapsstyrelses framställning nr 19/1992/93, p.8 and p.23.

<sup>47</sup> PSAVI/220/04.08/2010, PSAVI/221/04.08/2010, PSAVI/222/04.08/2010, PSAVI/224/04.08/2010.

More recently, permit applications on **Åland** have not been rejected as such, but the permit authority has used its possibilities to adjust the nutrient outputs, which affects the production capacity. Usually this has meant that the nutrient output allowance is somewhat lower than applied for. Up until 2013, the limitation of the permit was expressed as a permit condition stating how much phosphorous (P) and nitrogen (N) the used fish feed was allowed to contain annually. More recently, this condition is instead expressed as the total load on the water environment. From the nutrient content (P and N) in the feed used annually, the amount of P and N that is bound in fish growth is subtracted. This is defined in the Åland Fish Farming Decree.<sup>48</sup> Expressing the condition in this way is one step away from limiting aquaculture production towards limiting the emission load instead.

## 4.2. Reasons for rejections

This section contains an analysis of the reasons for the rejection of six permit applications for the expansion of existing marine net cage production in Finland that were processed in 2008-2012. For Åland rejections to expansion in the time period between 2007-2013 will be highlighted through two examples.

As mentioned earlier, the preconditions for granting an environmental permit in *Finland* are laid out in Section 42 of the EPA. The section contains a long list of preconditions, but those relevant from the point of view of marine net cage fish farming can be argued to belong to the preconditions that relate to nutrient emissions. According to EPA Section 42, granting a permit requires that the activity does not result in, inter alia, significant environmental pollution or risk thereof nor the deterioration of special natural conditions or risk to water supply (...) in the area of impact of the activity.

In addition to the abovementioned general preconditions, in Finland documents called water resources management plans (WRMP's) also have an important role when assessing the significance of environmental pollution referred to in Section 42. This is laid out in Section 50 of the EPA. As explained earlier in this report, WRMP's are based on the implementation of the EU's Water Framework Directive. The WRMP's contain information on the environmental status of water management areas as well as on the specific measures necessary in order to achieve "good status" for all waters by 2015. The WRMP's are not legally binding documents, but are intended to act as guidance for different stakeholders in water management. The current WRMP's in Finland were issued in 2009 and are valid for 2010-2015. New WRMP's for the next program period 2016-2021 are currently being prepared.

After analyzing the **Finnish** authorities' justifications for the rejection of the six permit applications for the expansion of marine net cage farms, several conclusions can be drawn. Firstly, in all of the six cases<sup>49</sup> the authorities' reasoning for the rejection of the permits relate to the goal of controlling nutrient emissions and improving water quality. In all four of the six cases that were processed after the introduction of WRMP's in 2009, the permit authority specifically refers to the water quality status goals and measures laid out in the relevant WRMP in their argumentation to reject the permit application. In the two cases from the time prior to WRMP's, the authorities' argumentation for rejection is still

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<sup>48</sup> Åland Fish Farming Decree Section 2, Para 5.

<sup>49</sup> The analyzed permit applications were ESAVI/263/04.08/2011, ESAVI/27/04.08/2010, LSSA-VI/397/04.08/2010, ISY-2006-Y-247, ISY-2007-Y-73, PSAVI/224/04.08/2010, PSAVI/222/04.08/2010, PSAVI/221/04.08/2010, PSAVI/220/04.08/2010. As described in Section 3.2., the four latter permits were jointly processed and were thus treated as one case in the analysis.

founded on the goal of improving the water quality in the area where the farm is located, and in one of the two cases also on potential harm to the recreational use of these waters.

As the **Finnish** permit authorities do not need to specifically refer to the EPA in their argumentation, it is at times difficult to pin-point the exact legal reasoning behind the rejection. However, in all of the rejected cases it seems that the argumentation is ultimately founded on the application of EPA Section 42's provisions on ensuring that the farms do not result in significant environmental pollution or risk thereof, and on EPA's Section 50 on using the relevant WRMP's to assess the environmental significance of the nutrient emissions of the farms. In certain cases, other material and procedural arguments are also used. These include a reference to the recreational use of the same waters (public interest), as well as a procedural note on that saving emission quotas for future use is not possible within the framework of the current EPA.

As WRMP's turned out to have such a significant role in the rejections of the applications, the provisions on aquaculture of the WRMP's for Southern and Western **Finland** were reviewed. These two areas were chosen as geographically they are the relevant water resources management areas from the viewpoint of marine net cage farming. Interestingly, the WRMP for Western Finland<sup>50</sup> contains a specific sentence regarding the water management measures on aquaculture that states that the emissions of aquaculture need to be curbed in areas where the environmental status of the water is inferior to "good" or where the status of the water may decline due to emissions from aquaculture. This is a rather strong formulation that is directly referred to in one of the analysed rejections. The WRMP for Southern Finland does not include a similar statement.

On **Åland**, the permitting authority has stated that the principal way of lowering the nutrient emissions from fish farms with current technology is to decrease the amount of nutrients that are added to the water through the feed. At the same time, fish growth and health, feeding techniques and available feed on the market put limits to how much the nutrient content in the feed can be lowered. Therefore, in some cases concerning renewals of permits, the permitting authority has found itself forced to lower the allowed permit size, which up until 2013 was based on the maximum nitrogen and phosphorus content in feed used annually. The motivation for this adjustment has been the prerequisites for permits included in the "stop section", i.e. that no further eutrophication will occur from the activity.

The argument for the right to existence for fish farms on Åland is, however, built upon reasoning from the side of the permitting authority: Although fish farming results in a net increase of the nutrient load to the sea, the conditions in the permit stemming from the Åland Environment Protection Act and the Åland Water Act are strict enough to prevent and limit the damage that the activity may cause the environment.

A couple of examples from **Åland** permits during the investigated time period of 2007-2013 will highlight the importance of water quality with regards to rejections of expanded production. In one case, a successive expansion of production, with an increase in the amount of nutrients contained in the feed was at stake. The company had gone from a yearly feed quota of 500 kg P and 3500 kg of N (approximately 40 ton production), which was later the same year increased by the Water Court to 750 kg P and 5300 kg N (approximately 60 kg production).<sup>51</sup> The company argued that an economically profitable production was only possible with no less than 100 ton production, which equalized 1035 kg

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<sup>50</sup> Chapter 11, Page 15 of the WRMP: <http://www.ymparisto.fi/download.asp?contentid=111718&lan=fi>.

<sup>51</sup> See, ÅMN-31-98-113.

P and 7280 kg on N annually in feed. In 1992, the Approval Commission granted the company a permit of 530 kg P and 4500 kg N in annual feed. This decision was appealed to the Åland Administrative Court, who referred the case to the Approval Commission in 2002.<sup>52</sup> The permit decision came only in 2007, lowering the quota given by the Water Court to 690 kg of P and 5300 kg of N. Despite the fact that this decision came before the Fish Farming Decree entered into force, the Commission's focus evolved around location and depth. It was noted that the location in question had a depth of only 6-7 m, when minimum depth should be 10 m. Another motivation, common to many other cases, is a reference to the preparatory works of the Åland Water Act identifying eutrophication as one of the most significant problems in the salt sea. The Commission noted that fish farming constitutes a net addition of nutrients to the water, and even if this contribution is small on the Baltic Sea scale, it is the largest individual contribution from an Ålandic perspective, which is why the Commission saw it fit to limit the emission quota in the above said way. In relation to the maximum amount of P and N in feed, the Åland Water Act 5:9 was mentioned: "the prerequisites for permit in accordance with the Water Act Ch.5, Section 9 should henceforth prevail".<sup>53</sup>

In another Ålandic case,<sup>54</sup> two companies filed a joint application for an environmental permit and a permit for submerging a drainage pipe to connect the slaughter house with the municipal sewage plant. The connection to the municipal plant was necessary and a result of waste water treatment obligations in previous permit conditions. At the time, however, the applicant(s)' permits would run out after two years, in 2010. The applicant argued that they needed an environmental permit until 2015 in order to be able to make the necessary investment that the drainage pipe was. The permit authority restricted the maximum allowable content of P and N in feed at the existing farming location, but paved way for a larger quota if the applicant would move farming to a new proposed location with greater water depth. The permit authority rejected the application insofar it concerned a move of smolt farming from an outer unit to a unit in a more enclosed area. This rejection was made on the basis that the increased emission load was likely to cause increased eutrophication contrary to Ch.5, Section 9, the Water Act.<sup>55</sup>

### 4.3. Water quality in law and practice

In all of the six analysed cases from the mainland **Finland** the main justifications for the rejection of the expansion of the marine net cage farming activity were based on the aim to limit the amount of nutrient emissions and improve water quality. It turns out that the WRMP's have a significant role in the argumentation of the authorities, as in all four cases that were processed after the introduction of the WRMP's in 2009, the authorities directly referred to the management plans as one element of their justifications of the rejection. From the point of view of developing marine net cage aquaculture in Finland, it may be necessary to reconsider strong industry-specific formulations on the need to reduce emissions of one type of activity in the new WRMP's that will be drafted for the next program period 2016-2021. As is illustrated by the current WRMP for Western Finland, such formulations may effec-

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<sup>52</sup> Åland Administrative Court 69/2002.

<sup>53</sup> MPN-02-31, p.7.

<sup>54</sup> The two companies were treated as two applications, ÅMH-Pn 55/08.

<sup>55</sup> ÅMH-Pn 54/08 and ÅMH-Pn 55/08, 17.12.2008, p.7.

tively result in a strong “stop section” for the expansion of fish farming activity in the water management area in question.

On **Åland**, demands for lower nutrient emissions from fish farming have been strong. When assessing how significant an effect an activity may have on water, what is said in the Åland WRMP should also be taken into account.<sup>56</sup> However, the link is rather to monitoring of permits and not as a precondition to permits as in the Finnish Act. Instead, the Åland Water Act includes the concept of special quality norms for eutrophication. A quality norm (or “standard”) is the limit for water quality, or the existence or characteristics of one or more species in an area. According to the Water Act, the Government of Åland is to establish these norms. However, to date no such norms have been established. This absence of norms in conjunction with Ch. 5 Section 6 (legal effect) and 9 (special quality norms with regards to eutrophication) of the Water Act stipulate that if a quality norm is not met, no new or modified operations are allowed in that area. Since no norms are established to date, in practice this has been called the “stop section” as it effectively limits potentially water-polluting activities, unless they through a special mechanism called the “improvement surplus” or in any other way can show that the activity will not lead to increased eutrophication in the water area in question. However, to date no such exceptions have been accepted. In the permitting system, the Water Act 5:9 is often referred to.

In a memorandum from early 2013, the Åland Fish Farmers’ Association has expressed their opinion on the implementation of the Åland Water Act.<sup>57</sup> In their view, the “stop section” has been applied in a discriminatory manner, affecting only one branch of business, i.e. fish farming. They call for water quality norms to be established, as spelled out in the Water Act ch.5 section 4, “the Åland Government shall issue such quality norms, which are necessary or suitable in order to meet the general prerequisites for water undertakings and activities hazardous to water.” The Fish Farmers’ Association, represented by their legal attorneys, claim that the current interpretation of the Water Act 5:9 stands in contradiction to the Finnish constitution’s stipulation that everyone is equal before the law,<sup>58</sup> and the right to work and the freedom to engage in commercial activity.<sup>59</sup> The legislation concerning quality norms is complex and made more difficult by the fact that the Åland Water Act, which entered into force in 1996, did have a system of quality norms before the EU Water Framework Directive came in the year 2000. In the Water Framework Directive, the quality norms are referred to as “environmental quality standards”. In comparison to an environmental permit for animal husbandry from 2012,<sup>60</sup> the Water Act 5:9 is indeed mentioned in relation to manure management, e.g. collection tanks and how to spread manure. It is noted that the measures taken by the applicant will be sufficient in order to prevent further eutrophication in the area. In another case concerning animal husbandry from 2011 the reasoning is similar – the permit authority mentions the Water Act 5:9 but notes that measures taken are sufficient.<sup>61</sup> In order to make any precise statement in the difference of application of the Water Act 5:9 for fish farming in comparison to other potentially nutrient-intense industries, a more thorough research is needed. A general conclusion can be drawn: the Water Act 5:9 does not

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<sup>56</sup> The Åland Environmental Protection Act, Section 31b.

<sup>57</sup> Ålands Fiskodlarförening/DKCO Advokatbyrå, Memorandum: Brister i nuvarande vattenlagstiftning, 8.1.2013.

<sup>58</sup> The Constitution of Finland, 11 June 1999, 731/1999, Section 6.

<sup>59</sup> The Constitution of Finland, 11 June 1999, 731/1999, Section 18.

<sup>60</sup> ÅMH-Pn 34/12.

<sup>61</sup> ÅMH-Pn 22/11.

rule out the existence of net cage aquaculture nor animal husbandry. It does, however, prevent aquaculture expansion as this is considered an additional source of eutrophication not presently possible to mitigate by any measure, while for animal husbandry there are a number of measures to be undertaken in order to avoid further eutrophication, why expansions of present-day animal husbandry is possible in the eyes of the permit authority.

The HELCOM recommendation 25/4 on aquaculture has also played a role concerning the specific load in **Åland** permits. The 'specific load' is defined in the Åland Fish Farming Decree to be the total load of the farm divided by the yearly fish growth, i.e. emission load per kg produced fish. The target in the recommendation from 2004 was 7 g P and 50 g N per kilogram produced fish. This is mentioned in a couple of cases, and is referred to as BAT. However, with the Åland Fish Farming Decree, the specific load for P was lowered to 6 g, while the N load remained the same as in the HELCOM recommendation. After the entering into force of the Decree in 2007, permits started to refer to a P load of 6 g instead of 7 g.

## 5. Summarizing discussion

Åland has its own legislation on environmental protection. Much of this is similar to that of Finland, but in specific cases the two bodies of law differ. In this report, the focus has mainly been on environmental permits and process: the reasoning in practice is similar, but the legal basis is not always the same.

To start with, in **Finland** there is a requirement under the Finnish Water Act for a so-called water permit, given for the reasons of altering the position, depth, water level or water flow or certain other properties of a water body. This water permit is given in conjunction with the environmental permit. No such permit is required in Åland.

Secondly, the length of the processing time for environmental permits for aquaculture was scrutinized. In **Finland** an average time of 20 months for processing new marine net cage farms and 16 months for expansion of existing farms was established. The same distinction between "new" and "expanded" permit applications could not be drawn for **Åland** as most applications in the study were "new" permits for *existing* farms and the majority of the farmers filed applications to adjust the quota (i.e. the maximum amount of P and N in feed) higher. Therefore, it can only be said that the average time for processing Åland applications was 21 months. Neither in the Finnish nor in the Ålandic case, it can be concluded that extra clarifications in the permit process leads to a longer processing time, mainly because the sample was too small and processing depended very much on the nature of the individual case.

Thirdly, the length of the validity of the permit varies in law and in practice between Finland and Åland. The **Finnish** EPA does not contain a main stipulation on whether permits should be given indefinitely or for a fixed period of time, but leaves it up to the permit authority to decide based on the nature of the case. The **Åland** EPA sets the main rule that permits should be given for an unlimited period of time, unless specific reasons call for a limitation. In all cases of environmental permits for aquaculture in Finland and on Åland, the validity has been restricted – in **Finland** ranging from 3 to 10 years with an average of 8 years for the permits analysed. On **Åland**, permits have until recently been restricted to five years, but the most recent permits from 2013 have been extended to ten years, however, with a revision of permit conditions after five years. This leaves the analysed Åland permits with an average validity time of 73 months.

Fourthly, in order to find out whether reasons for production stagnation lies within the environmental permit process, also reasons for rejections to permits have been analysed. In a first round, rejections to new establishments were looked into. In a **Finnish** case of rejection to an application for a new farm, the reasoning evolved around carrying capacity of the bay in question – the ongoing permit review lowered quotas (i.e. feed quotas) in general, why a new farm was not sensible in the area. It should be added, though, that three applications for establishment of entirely new farms were actually accepted.

During the analysed time period no rejections to new establishments were given on **Åland** due to the fact that no such applications were handed in. Instead, three cases from the early 2000's served as comparison. These cases were all characterized by a negative public opinion and water quality issues in the areas. Hence, the permitting authority relied on the relevant sections of the Åland Water Act concerning water quality for the rejections, in particular the so-called "stop section", stipulating that no new or amended activities are to take place in an area if certain quality norms concerning eutrophication were not fulfilled or in place.

Reasoning for rejections of attempts at expanded production in **Finland** shows similar reasoning linked to water quality issues. The rejection rate for expanded production was 80 % (12 out of 15 cases). The legal reasoning for these rejections was based on the precondition for a permit that an activity does not result in increased nutrient emissions causing pollution in the areas in question. According to the EPA, the water resources management plans drawn up under the EU Water Framework Directive have to be taken into account in environmental permits and in these cases, the WRMPs played a significant role in the sense that measures laid down in the plans were used as justifications to rejections.

Although the **Åland** permitting authority is also required to take the Åland WRMP into account in the permitting process, this link between water management and environmental permitting has not been made as clearly. Instead, rejections to expansion rely heavily on the aforementioned "stop section", something the fish farming industry on the Åland Islands have not been particularly pleased with. Another increasingly important factor is the location of the farm, not only due to the requirements in the Åland Fish Farming Decree but also in order to find out what kind of effect the expanded activity would have on the water area. For numbers on specific load, the permit authority refers to HELCOM recommendations as best available practice.

## 6. Conclusion

In sum, water quality issues are high on the agenda for permit authorities both in Finland and on Åland. The EU Water Framework Directive is taken seriously. For Finland, this is reflected in the fact that measures laid down in the WRMPs are referred to in permits, while on Åland the principle of non-degradation of the state of the water quality is reflected in the Åland Water Act, which in fact entered into force even before the Water Framework Directive. Åland also relies on the work of international organisations such as HELCOM for standard-setting. Location for better water quality is key, and as fish farms move to locations further out to sea, they become less and less of pollution locally and more of a load on the Baltic Sea as a whole. In offshore waters, the EU Marine Framework Directive may come to play a greater role for fish farms, including the work of HELCOM. As an increased aquaculture production is high on the EU wishlist at the same time as water quality improvement is a requirement by law, the industry together with the authorities are forced to be creative as far as nutrient ab-

atement and compensation measures go. The Aquabest project works within this field, for example in encouraging the use of Baltic Sea-sourced nutrients in fish feed, thereby closing the nutrient loop within the region. It is crucial that environmental legislation and environmental permit authorities find ways to recognise such compensation measures in permits for aquaculture.