UiT
THE ARCTIC UNIVERSITY OF NORWAY

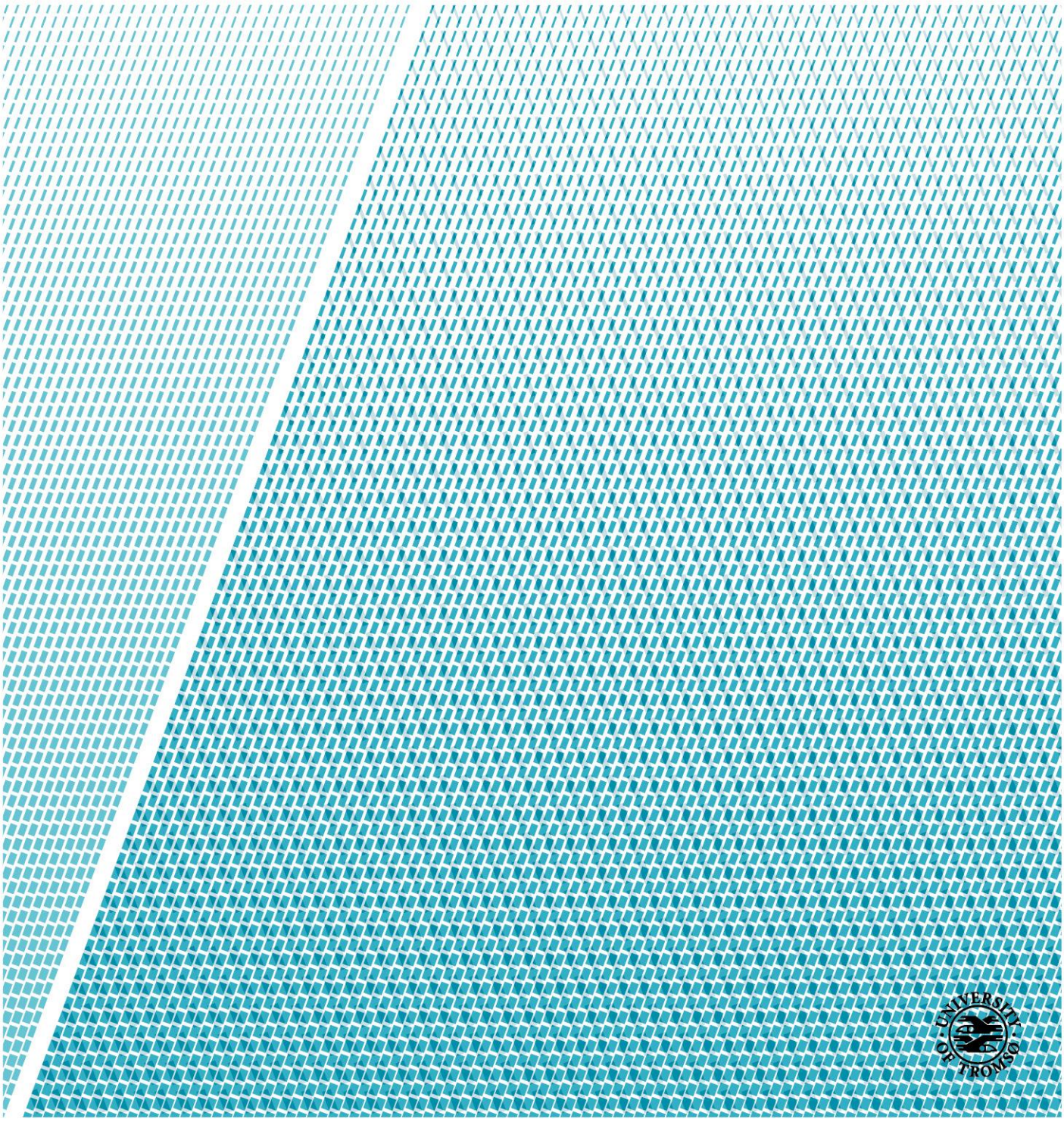
Faculty of Biosciences, Fisheries and Economics

Seeking to legitimize:

Social sustainability and legitimacy in the Traffic Light System

Christian Vik

Master thesis in International Fisheries Management (30 ECT) May 2019



Innhold

Working with this master has been an interesting and challenging task. I want to express my gratitude to the good colleagues, professors and staff at the Norwegian College of Fisheries Science. Also to those at home for supporting and encouraging me to manage through the studies. It would have been less fun and less learning without the assistance from those around me during these two years. A special thanks to my advisors Signe Sønvisen and Bjørn Hersoug. I also want to give a special thanks my partner Avis, for being there, for supporting me and for being patient.

Abstract:

Over the last 50 years, the management needs of the Norwegian aquaculture industry have become increasingly complex. The stakeholders in the management vary diversely from environmental agencies and NGOs, to local and national governmental bodies, to those operating the farms themselves. Consequently, the establishment of the Traffic Light System as a management tool has been a long and challenging process. There has been a great deal of criticism regarding its inbuilt collective punishment with regards to capacity reduction. To avoid this, the authorities have created exemption rules to the action rule, commonly referred to as §12. This paper explores how the exemption rules (§12) affect the legitimacy and social acceptance of the Traffic Light System. Moreover, it seeks to understand how the Traffic Light System affects the social sustainability of the Norwegian aquaculture industry more broadly. The design of the paper is qualitative research in the form of document analysis and formal structured interview. Three different farmers, one representative from the NFSA and one from the Directorate of Fisheries were interviewed individually by phone. White papers, consultation documents, hearings and applications were scrutinized in the document analysis. The findings indicate a lack of trust towards those creating the management structures. With such a system in place, an exception rule is deemed absolutely necessary. The study shows that the criticism towards the TLS was so strong that there may not have been enough support to establish such a system without exception rules. The exception rules allow the TLS to be accepted, with the consequences that the aquaculture industry is managed with regards to its impact on the environment. The study reveals that there is no use of discretion when handling the exception rule, and this is both positively and negatively viewed by those surveyed. Importantly, the study demonstrates that in spite of §12, there still exist strong doubts from the farmers towards the TLS, indicating a persisting lack of content legitimacy. Yet there is also a sense of understanding that the TLS - aided significantly by the instigation of §12 – is the start of a new management system, which despite needing further research, could become a valid management structure for the industry. Overall, the fragility of the social sustainability of Norway's aquaculture industry will depend heavily on the continuation of both economic and environmental sustainability.

Keywords:

Social sustainability; social acceptance and legitimacy; Norwegian salmon aquaculture; content legitimacy; procedure legitimacy; Traffic Light System; exemption arrangement; exemption rules; §12; salmon lice

Chapter 1 Introduction to aquaculture management

This paper concern the new system for regulating growth in the Norwegian salmon aquaculture industry. It will mainly concern regulations regarding grow out fish licenses although the aquaculture industry consists of more licenses than these. This project was written due to a motivation of getting to know the industry and the management of salmon aquaculture, and a curiousity so see the experiences with the Traffic Light System (TLS) so far. The system came into being just weeks after this master education at the Norwegian College of Fisheries Science was started so an attempt has been made to follow the development after its establishment (Regjeringen, 2017). The research question in this paper are:

- How does the TLS affect the social sustainability of the aquaculture industry?
- In particular how the exemption rues (§12) affect social acceptance and legitimacy of the TLS?

The aquaculture industry has had an impressive history so far developing for an activity based on some people farming fish in basing land installation as more in the form of small scale spare time activity, to an international industry, is innovative and generate important values for Norway as a whole and for communities around the country, that sometimes have few other options for industry to rely on. It has been a challenging journey up to recently (Hovland, et al., 2014).Through the history of changing priorities and circumstances for the aquaculture industry, licenses allocated in the form of single licenses, or through licensing rounds has been an important management tool (Ibid). What the authorities wished to achieve with the allocation has, however, changed. It has changed so much, and in a manner that has led to a great deal of unpredictability for the farmers, as well as for those working within management (NFD, 2015,a). A move away from unpredictable discretionary allocation to a larger degree of objectivity is a trait in the course of developing the management (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). The way the growth has been managed have been changed. These changes clearly indicate that management and the industry had to learn, and cooperate together to find solutions to the diverse challenges that has been faced (Hovland, et al., 2014). This paper will discuss the TLS, which came as a result of a wish for greater predictability for growth in and for the industry, as well as the need for a more predictable and

sustainable way of managing (economical sustainability through increased competitiveness). It is supposed to represent an environmentally sustainable way of operating where growth is meant to be a result of what the environment can handle, after a political decision, rather than a more random allotment of growth, through licenses, and the size of licenses. A general growth in size and volume may be observed (NFD, 2015,a, p. 1). Therefore, in order to fully understand both the reasons why the TLS was instigated, and the challenges it now faces, it is crucial to have an overview of the growth and development of the industry over the last 50 years.

1970-1980: The birth of a management system and its first steps.

Pre-1970 was a time of experimentation, in which local entrepreneurs had started trying, and were failing, with farming fish on land. After a period of trial and error, some of these farmers found out that salmon and trout grew faster in seawater (Hovland, et al., 2014**).** It was from 1970s onwards that the development and growth really started; a "Klondike" for farmers started where far from everyone found gold. It became a period of learning and evaluation and a regulation started taking a shape. As the authorities became aware of the potential of salmonid farming, they slowly started getting to know this dawning small scale aquaculture industry. It became clear that they needed to play an active role if the potential new industry was to be sustainable (Ibid:151; Ibid:159). As an important step in learning about the needs of the industry, the Lysø committee was established. This became the starting point of the authorities involvement in attempting to regulate and manage the aquaculture activity that had been evolving with those first entrepreneurs (Ibid:152). Before this, everyone who wanted to could start up fish farming. Many did so on land, and later, when it was discovered that salmonids grew better in seawater, the activity was moved from different installations on land to cages and pens in the sea (Ibid). The Lysø committee's work and recommendation was to result in the foundation of the management of the aquaculture industry. This foundation would consist of licenses as the main management tool and volume as an important limitation (Ibid:152). In fisheries management (and other sectors of resource management), licenses were a well-known tool and consequently were a natural choice for this new industry. The license system was chosen in order to limit access to the resource and also to keep large industry from entering the scene (Solås, et al., 2015, p. 29). Their work shaped the direction of fisheries management and their recommendations were based on a broad mandate that resulted in a report in 1977 (Hovland, et al., 2014, p. 152) The work to get an overview of the

facilities and persons active in farming occupied the administration at first, and this soon resulted in a temporary concession law which was established based on their experiences. They understood that the development and interest to start up in this new industry made a law necessary to establish early in their work (Ibid:152). Representatives from both the Ministry of Agriculture and The Ministry of Fisheries sat in the committee, but the new law became the responsibility of the latter and handling applications for licenses and trying to get an overview over the industry became the most important administrative task at the time (Ibid:152-153). Managing the tasks was the responsibility of the Directorate of Fisheries at first (Ibid:118). It took years to gain an initial overview, starting in 1973 when the temporary concession act was established. The work continued in both 1974 and 1975. In the first instance, a self-reporting scheme was followed, then one with and checking and verifying numbers (Ibid:157-158). Administering the new system temporarily demanded a great deal of work: to gain an overview, to get the industry into registers, and to allocate licenses. As the interest was large and the workload overwhelming, a licensing stop became a solution to the growth pains in the administration in 1978. The fear of not managing to sell all the fish produced, and lack of supplies of smolt for further growth, alongside concerns from the Lysø committee report and the farmers interest organization, led to this licensing stop (Ibid:158). This led to the experience very early in the management history that a liberal licensing practice may lead to challenges for the administration, and since the pressure from people wanting to start with aquaculture was so large, and the administration would eventually develop the understanding of the importance of prioritizing applicants rather than providing licenses for everyone (Ibid:159).

During their five year period of work, the management had to understand and to manage the new and growing small industry that aquaculture was developing into, first through the Lysø committee, and then through the Ministry of Fisheries and Ministry of Agriculture (FKD, 2011, p. 19). The responsibility for where the new small scale industry would be became ground for conflict at this time. Since the Lysø committee consisted of representative from two ministries, this had to be clarified administratively (Hovland, et al., 2014). One consequence was that the Ministry of Fisheries held the main responsibility for administering licenses. Despite this, animal welfare has also been a key responsibility for the Ministry of Agriculture. The sharing of responsibility between two ministries, combined with shared divided responsibility between numerous government bodies on several levels dividing all the

other areas of responsibility related to the use of sea space, has made the management of the aquaculture industry quite complex (Solås, et al., 2015).

Although there was a belief that the small industry could expand, an important and general feature from 1973 to 1991 was that an owner could only own one license and he or she had to have some kind of local relationship in order to own a license. A district priority focus was prevailing in politics at the time, and this was also part of the Lysø committee's recommendation. This therefore also gave an important direction to the priorities when regulating and establishing regulations until 1991 (Hovland et al, 2014:156: Ibid:429). According to Solås et al. the new act was mainly motivated by politics to stimulate the district small scale industry where the options for other industry was scarce. This priority would be important the rest of the decade and also strong in the following decade, and materialized itself in active politics from the Ministry when it came to local ownership in order to keep the small scale industry and the way of operation locally based and owned (Solås, et al., 2015, p. 17). As outlined by Hovland et al.: "[…] the Lysø committee (laid) the premises for the aquaculture policy and thereby the industry's development for a long time ahead" (Hovland, et al., 2014, p. 163) (auth.own.trans).

In order to administer the licenses, and to secure the goals set, a limitation was discussed thoroughly with regards to farmers. This resulted in a volume limitation with regards to m3 per facility. Experiences with market crises earlier, as well as experiences with what could give a viable operation, made the authorities set the m3 per facility to 5000, after first having set it to 8000. The reason was experiences with what was possible to get sold, and give an income and work enough for one person (Hovland, et al., 2014). The limitations were concerning grow out licenses (Ibid:157-158). When the first permanent concession act came, it showed clear traits of social and economic sustainability when looking at the goals (Solås, et al., 2015, p. 17). When considering the establishment of the TLS, it is interesting to observe that the Lysø mandate states "the possibilities from that artificial hatching and farming of fish may develop into a viable way of living" (Hovland, et al., 2014, p. 152) (auth.own.trans). This shows an already early focus on a viable, and therefore also, sustainable, small scale industry. The limitations on granting licenses may at this early stage be considered a question of social and economic sustainability. The main development during this period was to limit production in order to secure that the salmon produced could be sold, and to stimulate and establish this new small scale industry in districts where it was needed. This was to change throughout the

late 1980s (Ibid:162-164). We see that social as well as economic sustainability was the focus in the early stages of management, which later became superseded by a focus on environment

1980 – 1991:

In 1981 the first permanent fish farming act (Opprettsloven) was established, in addition to regulations for allocations (FKD, 2011, p. 21). These changes came as a result of Lysø committee's work in the decade before, and following a White paper. The act was similar to the temporary license act of 1973 (Hovland, et al., 2014, pp. 162-163)**.** This also had strict regulation concerning ownership (Solås, et al., 2015, p. 18). Throughout the 80's that was to change, and affect the structure of the industry, and shift the sustainability from a mainly social and economic focus to more of an economic focus, but with social traits (as it was to be less rigid or locally oriented with regards to ownership) (Hovland, et al., 2014). In the new act licenses, it was decided to organize licensing rounds rather than consecutive handling when dealing with allocations of licenses (Mellbye, Rettslig regulering av norsk akvakultur, 2018, p. 22).

The decade showed rapid growth in the production and development that would lead to fewer and larger companies as the political wind changed in a more liberal direction. The number of licenses increased by around 50%, and the production capacity of the licenses also increased (Hovland, et al., 2014, p. 216). The following through of 4 concession rounds illustrates growth. A general feature in this period is a prioritization of the northern parts of Norway (NFD,2015,a,p. 31; Hovland, et al., 2014, p. 165). As these new rounds were facilitated, the administrative workload increased. The process was demanding, from public announcement of a licensing round to the publication of results. The workload and processes became more and more complex resulting also in longer processes (Ibid:166).

From 1981 the allowed volume per license was 3000m3 with an expansion up to 12000m3 in 1988. This was in the course of the licensing rounds that decade (FKD, 2011, p. 21). Increases were both in facilities that were already in place, as well as around 300 new licenses (Hovland, et al., 2014, p. 165). During the round in 1983, Nordland, Troms and Finnmark gained 122 out of 250 licenses, and in the rounds in 1981, as well as 1989, they were prioritized (FKD, 2011, p. 21). This shows how the goals of the initial law was still operating

with regards to developing a business for and in the districts as opposed to a more liberal development liberalization when allocating licenses.

The aquaculture industry grew rapidly during the first half of the 1980s. It grew so fast that the act from 1981 was replaced by an act in 1985, because the regulations needed to be further adapted (FKD, 2011, p. 21) There had been a lack of hatchery-produced fish for stocking, so the act from 1985 liberalized the regulation of producing such fish. The Høyre government were being more liberal towards the aquaculture industry than earlier governments. Smolt production was liberalized in order to meet a growing demand. This stimulated further growth as the supplies of smolt had been a challenge earlier (Hovland, et al., 2014). The previous regulations had limited growth, and the changes in law regarding smolt production had a profound impact on the industry. To exemplify: the licenses for smolt production were over tripled over three years, and production of smolt went up from 25 million to 85 million (Ibd:216). The strict regulation on smolt had been a tool to limit growth (Ibid).

Eventually a separation of aquaculture applications was introduced that resulted in two different ways of handling inquiries, as it continued the system of licensing rounds for handling applications for grow-out licenses for trout as well as salmon. Applications within the aquaculture industry concerning other things were to be handled singularly (Mellbye, Rettslig regulering av norsk akvakultur, 2018, p. 22). The management was being criticized due to too quick growth, and the Norwegian Fish Farmers Association (NFF) claimed that the industry grew faster than the apparatus that they meant should be around the industry (Hovland, et al., 2014).

The handling of the applications had become extremely complex and was too slow, and the Fishery Boards in the different counties were criticized for allocating unfairly and for discretional treatment. Alongside this, the authorities did not pay enough attention to the market when allowing for quick growth. The challenges started to come to the surface as the authorities were struggling to compensate in order to follow the fast growth they facilitated for. They tried to simplify the handling of applications and employ more staff, but the magnitude of the workload affected the ability to handle it. One result of this administrative lag and challenge to meet administrative demands was people starting up without licenses (Ibid: 169-172). This led to a situation that threatened the economical sustainability of the industry by the end of the decade. Administratively the complexity continuously grew. The Ministry delegated some of their work to the regional level, and complaints were made to the Directorate of Fisheries (FKD, 2011, p. 22). Management was growing, but the industry grew

faster. From around 1985, and throughout the decade, diseases became an increasing problem (Hovland, et al., 2014, p. 203). Among other things this led to an increased focus and resources put into research to try and solve these challenges (Ibid:191). The demand for salmon was steadily increasing throughout the decade. This concerned also the level of knowledge and automatization of processes. The decade also experienced an increase in efficiency in feed technology and ways to operate (Ibid:191-192).

The last part of the 80s culminated in a crisis and with the changes in the aquaculture law in 1991 came important changes in the regulation (Ibid:219). The crisis came, among other things, as a result of growth. A price fall and outbreak of diseases led to many companies going bankrupt through the last half of the decade as the market did not buy the growth (Ibid). Another aspect contributing to worsening the crisis was the Fish Farmers Sales Union, (FOS), which had been established 1978 following the Lysø report. The creation of FOS controlled the sales from farmers of farmed species similar to the one in the white fish industry (FKD, 2011, p. 23) This union contributed to overproduction by trying to stimulate the industry in a positive direction by establishing "Innfrysingsordningen"(The Freeze in arrangement). All these features led to overproduction. The liberalization that came, and the crisis that was experienced, brought with them important adjustments in the aquaculture act in 1991 (Hovland, et al., 2014, pp. 215-219).

The result was a structure similar to that within the white fish industry. The focus on the sea and coastal area as important for production was strengthened (FKD, 2011, p. 22). In the period from the mid 1980s to the mid 1990s, many farmers experienced going bankrupt, and this contributed to a re-organization of the industry (Ibid:22).

The authorities did not seem to think so much about the market when they were managing the production capacity, and the large growth resulted in falling prices. In addition, diseases and algae contributed to the difficult situation in the late 1980s and would continue to do so in the 1990s. Approximately 20% of the facilities went bankrupt by the end of 1991 (Hovland, et al., 2014, pp. 216-217). It seemed that the industry grew too fast, and the authorities were lagging behind in capacity as a result of their increasing workload. As many went bankrupt at the end of the decade, something had to be done in order for the industry to be viable and sustainable economically, and environmentally with regards to diseases. That northern Norway was prioritized may be seen as part of social and economic sustainability and a way to create something in the northern region that may be sustainable socially and economically for the

future. One may claim that economic sustainability was the focus, and a specific geographical social sustainability focus, or new establishment was still a part of the licensing priorities.

1991 – 2002

The challenges of the previous decades led to further challenges in the decade to come. In the period 1989 - 2002, concession rounds were not initiated and one could not acquire licenses other than by buying them from companies or by buying the companies that had acquired these (Mellbye, Rettslig regulering av norsk akvakultur, 2018, p. 22). The act from 1991 had opened up for changes in the structure so that one could now buy and own the majority share of more than one company. Restrictions on local ownership also became less strict (Hovland, et al., 2014, p. 215). With the law in 1991, sustainability was put into the purpose clause as a now important term (Ibid). At the time, and as a reason for opening for ownership changes was several aspects connected to environmental issues, and this may have influenced the environmental focus in the act. People observed that challenges related to environment were becoming increasingly important to pay attention to (Ibid:220).

Local, regional, and also larger companies eventually got the chance to buy companies that went bankrupt, which resulted in making the industry consist of both fewer and larger companies over time as licenses became possible to purchase from farmers that had gone bankrupt. Despite the fact that no licensing rounds were facilitated by the authorities at this time, the existing companies expanded, due to the fact that these larger firms were able to own more than one license each. Consequently, the numbers of competing companies naturally decreased (Hovland, et al., 2014, p. 249; Hersoug, Mikkelsen & Karlsen, "Great expectations" – Allocating licenses with special requirement in Norwegian Salmon Farming, 2019). In 1991, FOS went bankrupt. This followed the US and EU's accusations that Norway was subsidizing and dumping prices (FKD, 2011, p. 23). These were the most important markets for the industry at the time, although this would later change (Hovland, et al., 2014). An arrangement was made in order to compensate for this loss of market: FOS's 'freeze in' arrangement. This was meant to prevent the companies from going bankrupt, and to compensate for the challenges the companies experienced, by freezing in fish for the companies after having bought their products (Ibid). The farmers therefore kept producing, and eventually FOS went bankrupt, during and after a series of small companies failed to survive the challenging period from 1989 -1991. A bank crisis at the time exacerbated the challenges faced by the industry (FKD, 2011, pp. 23-24). This, together with the liberalization of the regulation with regards to ownership, made possible an industrialization process

towards fewer and larger companies (Hovland, et al., 2014, p. 279). This led to a change from a sales union for the salmon farmers to a free market situation. This further stimulated production growth in the time to come, but a new crisis came in 2001. The two crises in the years 1990-1992 and 2001-2003 came because the market did not buy the salmon, as the produced fish increased as fast in this decade as in the decade before (Ibid:277-279). There was simply too much supply, and with overproduction, reduction in prices due to a wrong estimation from the authorities on the demand for fish, and the competition from the salmon farming started abroad brought further challenges for the industry (Ibid:164). In addition to these challenges, disease was an important issue so solve (Ibid:217). The use of antibiotics to combat such diseases resulted in decreasing the social acceptance, as the public gained the impression that the industry was not operating in an environmentally viable manner (Ibid:218).

The two periods of crisis had influence on the way the laws were shaped, and the result became that the industry developed into larger companies (Ibid:218). This implies an important feature with the industry that was to continue throughout the years: that a decreasing number of companies was responsible for a larger and larger part of the production (Ibid). The move towards industrialization led to great growth in production in the 1990's, which can be illustrated by the fact that the industry produced 3 times as much salmon in 2002 as in 1992. Much of the reason for the growth was the industrialization, alongside increasing resources put into research and technology development (Ibid:249). The companies got larger and also managed to invest in new technology thereby allowing more growth (Ibid). Alongside the development and increasing complexity of the industry, also the management developed into a more complex system than earlier (Ibid:275). This created a more technical management as the way of operating became more advanced (Ibid:296). According to Hovland et al., this was principally due to a threat from the EU (Ibid:258/275). The authorities took some measures in order to make sure that trust from the largest market for salmon would be regained. They were forced to limit the growth somehow (Ibid).

Limiting volume related to the licenses continued to be important, therefore an elaboration on this matter may be useful. Limiting production has been a crucial part of management since the start (Ibid). Restrictions on density in pens (not more than 25 salmon per m3) and feed quotas became regulated; the last mentioned would last for approximately 8 years from 1996 to 2004 (Ibid:298;FKD, 2011, p. 24). Eventually, from January 2005, the weight measure for a license was MAB, or maximum allowable biomass. Earlier a system for limitation was

based on a license's m3 in volume per pen, which meant that a permission earlier had grown steadily from 3000m3 in 1981 up to 12000m3 in 2004. From 2005 this was to be the same as 900 tons for the two northernmost counties and 780 tons as a maximum per license south of that (Hovland, et al., 2014, p. 298; FKD, 2011, p. 26: Hovland, et al., 2014, p. 216). A general feature of volume and weight is that it has been challenging to control in practice (Ibid:298).

When criticism from abroad came and Norway began to regulate more strictly, the EU regulated with export quotas as well as minimum prices. This affected the industry hard as the market was disappearing overnight. The USA, another important market, put a toll on salmon in 1992 (Ibid:294). A new crisis started in 2002, for some of the same reasons as the last: namely too large production of fish compared to the markets. with the later development of the TLS may be seen in connection with the situation around 2002, when signs of challenges with the authorities' lack of focus on support in administrative and environmental matters, as well as with regards to solving disease issues, was damaging to the industry and the fish (Ibid:276). According to Hovland et al., the accusations from abroad contributed to secure the continuation of the licensing system as the state tried convincing the EU it was taking measures to regulate the industry (Ibid:275). The system though has been criticized throughout its life. The authorities were working to prove the accusations wrong by taking continuously strict measures. In this situation removing the license arrangement may have resulted in a worsening the situation for the industry, something the authorities were struggling to avoid (Ibid). Because of this challenging period up to 2002, the regulation had to be adapted to the situation, in order to improve the situation for those that had survived the period (Ibid:218). A step towards securing better control and overview was that in 1996 the industry had to deliver information about their production to the directorate (FD, 2016). The industry was to become more involved in providing information to the authorities as the time went (Hovland, et al., 2014). All in all, the period had shown that the industry had not been sustainable economically, or operationally, therefore it was also not socially sustainable. The local ownership got less importance in the regulations, in order to allow for more industrialization to adapt those operating to the new situation so they could keep operating. The development of new technology further contributed to making the industrialization possible (Hovland, et al., 2014, p. 249) According to Hovland et al., the crisis and threat of the EU gave the authorities an extended mandate to regulate through the changes in the law from 1991 than earlier. These changes were necessary in order to save companies that were struggling, and to attract capital to save from further bankruptcies in the industry (Hovland, et

al., 2014, p. 226). Environmentally, the challenges regarding diseases showed had showed that limits were necessary with regards to the environmental situation if the goal for sustainability from the act of 1991 was to be within reach (Ibid). A step towards deregulation was made: with more liberal regulations with regards to ownership, and a beginning industrialization, the size of licenses grew steadily. That many companies bought up licenses also shows that the authorities adapted regulations. As FOS was no longer controlling the sales, a step towards market liberalism was taken. The period showed that the foreign markets' reaction to what happened in the industry affected the way regulations were done at home, and led to an alertness from the authorities side, as they to go through lawsuits in order to prove the accusations wrong. Also the industry and authorities eventually took measures to differentiate their markets and not be so dependent on the EU and US to sell the fish (Ibid).

2002-2018

A new crisis came in 2002. Companies ranged from owning 1 to 100 licenses: a large change from the one man one license initiated in the first decade (Hovland, et al., 2014, p. 275). This period consisted of many different licensing rounds. The environment was to become an important measuring stick for growth these years (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 3). This came as a result of political priorities and the challenges the industry were facing (Hovland, et al., 2014, p. 311; NFD, 2015, a). The discretional way of allocating licenses in the licensing rounds has affected the authorities' workload (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). It is important to note that that licensing remained a central regulatory tool throughout the period, and has survived into the establishment of the new TLS. Less randomness and more objectivity has been the result, for growth both on new and existing licenses. It is also noteworthy that there have been very different priorities for allocating licenses throughout the period, and the authorities have not been consistent in the licensing rounds with regards to actually checking whether those that were given licenses have done what they promised with regards to criteria for receiving the licenses (Hersoug, Mikkelsen & Karlsen, "Great expectations" – Allocating licenses with special requirement in Norwegian Salmon Farming, 2019, p. 161; Hovland, et al., 2014, p. 299). A result of this has been a lack of predictability of consistent control and sanctioning from the side of the authorities. The first time this was really done was in the 2013 round, as the environmental demands led to a need to monitor them in order to see if the environmental criteria was kept (Hersoug, et al.,

2019, p. 161). In this sense, the applicants that has promised to deliver on promises given when applying to receive licenses, has to a large degree been able to choose to do so or not largely without being sanctioned after receiving licenses (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). One may claim that the system has become more specific and detailed, with larger responsibility from the farmers, as being part of the management system, or as Hersoug et al. states "[…] the system with licensing rounds with politically determined criteria has received much criticism, and the current government has gone far in dismissing it for more objective allocation criteria[…]" (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 161).

Towards a more technical and detailed management

According to Solås et al (as sited in Ot.rp.nr.61 (2004-2005)) the aquaculture act of 2005 changed in the direction from the deciding who should be operating, to the way of operation itself. Alongside this the law allowed for licenses to be bought in the future (Solås, et al., 2015, p. 19). Before this, a central issue in the first acts had been who operated and where the operations found place (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). This paved the way towards an increasing technical and also detailed focus on how the farming should be, and which technical criteria needed to be fulfilled in order to receive the licenses. The industrialization contributed to this, and also the development in society, where the industry got criticized with regards to the affect it had on nature. At the end of the period, environment became an important measuring stick to receive licenses and eventually with the TLS, growth as well as licenses (Hovland, et al., 2014; Hersoug, Mikkelsen & Karlsen, "Great expectations" – Allocating licenses with special requirement in Norwegian Salmon Farming, 2019).

In 2005 a new Aquaculture law was established and a system for trade of permissions was an addition (Mellbye, Rettslig regulering av norsk akvakultur, 2018, p. 22).From 2005, quota for fish with maximum allowable biomass (MAB) replaced the quota on feed as a management measure tool for regulation (FD, 2016). A more technical objective management started developing at the start of the decade (Hovland, et al., 2014). Ownership limitations were further deregulated so larger companies developed and some even went on the stock market

(Hovland, et al., 2014, p. 279). By the end of the decade, around 100 owners were owning all the allocated licenses (FKD, 2011, p. 26). From 2004, the authorities had started charging a license fee (Hovland, et al., 2014, p. 296). The MAB was set to 900 ton in the two northernmost Counties and south of these it was set to 780 ton per license. The standard called NS 9410 regarding the environmental situation of operating may be used to illustrate a step in a direction of a regulation becoming more technical by 2005 (FKD, 2011, p. 26). The focus on fish welfare in addition to health also got larger and more important attention than before in the new regulation (FKD, 2011, p. 27). Preceding this, the Norwegian Food Security Agency (NFSA) had been established in 2004. This agency was to play an important role in the aquaculture industry with regards to fish health and fish welfare in the years to come, and this would also come as a result of the aquaculture act in 2005, due to the increased focus on these matters (Hovland, et al., 2014, p. 305) . In addition, a food security law was established the same year as the NFSA. This was also a step towards larger objectivity in the management of the industry, as this was a step towards the regulation being centralized to meet the demands from the aquaculture industry growing into a large industry (Hovland, et al., 2014, p. 306). According to Hovland et al., the industry had become so large that the regulation from earlier had become too random and discretional, and there was a need for the companies to be treated equally (Hovland, et al., 2014, p. 306). To illustrate how far the technical development of the industry went in these years, and the consequent growth in regulations and management tasks, it may help to underline the point from Hovland et al referring to an example of a company that had to fill 1300 forms in 2002 (Hovland, et al., 2014, p. 299). The same authors refer to that some companies had to sell as a result of these demands towards the authorities (Ibid:299).

The process of consolidation continued throughout the following two decades, and this may be observed when acknowledging that in 2013 24 companies did 80% of the production (Hovland, et al., 2014, p. 420). As the companies grew, so did the facilities and locations. At the beginning of the period there were 1500 locations, and in 2012 only 975 (Hovland, et al., 2014, p. 394). Science played a larger part of this technical management and operation of industry in relation to nature (Hovland, et al., 2014, p. 394). The TLS was to be the result of trying to achieve sustainability and a viable industry in relation to nature (NFD, 2015,a).

Licensing rounds in the period

Before 2002, a long time had gone with no licensing rounds. In 2002, 2003 and 2009, rounds were arranged with 40, 50 and 65 permissions respectively. 80 of these were allocated to the 3 counties in the north of Norway (FKD, 2011, p. 25). The authorities still tried to provide licenses to districts needing it. Different criteria were used. In 2002, Saami, new, and small companies, along with local owners mainly in the north, were prioritized, as well as more diversification of the company. In 2003, integration kept being important and innovation was to be encouraged. In 2006, the northernmost county got priority. In 2009, many considerations were prioritized, but environment came in as a criteria for the first time as well as fish health (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 156). Female leadership as well as economic integration and processing had been criteria (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). The multiple criteria, and changing demands for licenses, created a push towards a more objective and predictable way of allocating licenses and growth (NFD, 2015,a). The licensing rounds took a turn from being mainly discretional towards having a larger degree of criteria that were objective. In 2013, environment came into the licensing rounds as an important goal and measurement, and salmon lice came in for the first time as a criteria (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 156). From this point, lice were to be important in the rounds, along with technology. Before this licensing round, the environment had not been prioritized specifically to the same extent as now. Ansreassen and Robertsen as sited in Hersoug, et al showed that auctions as a method to allocate licenses also came in as a result of the authorities understanding that the prices set earlier had been lower than the market was willing to pay (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 157). In the 2013 round, 45 green licenses were offered, and these had environmental focus (Solås, et al., 2015, p. 27). Furthermore, a round focusing on development of innovative new technology was arranged from 2015 to 2017, with strict demands towards lifting the technological field (FD, 2018). The authorities were still learning and by this time environment had stepped up as the main reason to regulate growth. Something had to be done with the challenges, and it went in the direction of environment and more objectivity, and science was more active in gaining knowledge to see how the challenges could be solved (Hovland, et al., 2014).

The division of responsibilities and work

A general feature with the aquaculture regulation is that it has been, and still is, very complex regarding the allocation of licenses (Hovland, et al., 2014, p. 397). The first permanent aquaculture law in 1981 facilitated for this. Responsibilities were shared between many: the government, the municipality, the county fishery board, and the municipality fishery board. The county veterinary as well as the Norwegian Coastal Administration (NCA) and the environmental and pollution administration has also had a saying in the decisions before they were made. The Fisheries Directorate - and to a large extent, the Fisheries Management Offices (Fiskerisjefkontorene) (this was the predecessor to the Fisheries Directorate Regional Management Offices) - took care of the complaints and procedure regarding these processes, so that the complexity of those involved consisted of a large bureaucracy (Hovland, et al., 2014, p. 397). The tasks they shared were connected to the amount of licenses to be allocated in each round, who should get a license, which counties or municipalities should receive, and to whom should they be given or sold (Hovland, et al., 2014, p. 397).

From 2010, the county administration became responsible for allocating licenses (Hovland, et al., 2014, p. 397). Before this, the government would handle such applications. Now the county administration would see through that procedure was followed correctly (Hovland, et al., 2014, p. 397). An aspect worth noting is that all the authorities had to approve, according to the acts regulating the areas they are responsible for, which therefore also opens up for that if one part of the authorities is against allocating to an applicant, it can stop the process. If the county administration had followed through, it would break the allocation act as well as the aquaculture law (FKD, 2011, p. 131; Solås, et al., 2015, p. 12). In addition to this, the permission needed to be in accordance with plans and decisions made according to the planning and building act (plan- og bygningsloven), the cultural heritage act and the law on the management of nature's diversity (naturmangfoldsloven) (FKD, 2011, p. 131)(auth.own.trans). These are some of the aspects with the process of allocating licenses and helps to illustrate the complexity of what the management has developed into.

What about the future?

The report “Value creation based on productive oceans in 2050” states that a threefold increase in production by 2030 and a fivefold increase in production by 2050 is possible (Hovland, et al., 2014, p. 421). This has been set as a political goal to reach and the TLS is part of the solution in order to reach those ambitions (NFD, 2015,a). From 1991 onwards, it

became acknowledged that this growth has to be on the nature's premises, to be environmentally sustainable, and alongside this it needs social acceptance in order to do so. The growth in industry has led to conflicts with others regarding the environment and other user groups with regards use of area, pollution and challenges related to operation affecting the wild salmonids and the environment (Hovland, et al., 2014). The political wish to grow therefore depends on social acceptance of growth. This is the topic of this paper, with regards to the new system for growth so far, and its exemption arrangement. Is there social acceptance for the system so far, and does the exemption rule provide social acceptance and sustainability for the new established system for growth?

Conclusion:

When looking at the period from when the administration of the aquaculture industry took its first steps towards gaining an overview that resulted in the first law concerning regulation of aquaculture in the early 1980's, up to the establishment of the TLS in 2017, several important traits may be spotted. Attempting to limit and control production volume through allocating licenses through mainly licensing rounds has been, and still is, an important regulation measure. The licenses have changed in volume, and it limited allowed biomass in weight which has worked as a limiting factor for production since the start of regulation (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). Feed quotas, and density of fish per m3 in the pens as well as MAB have been used as limiting parameters. Due to broad support, the licensing system survives, and is still working (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 161). These measures have been used in parallel with a large production growth. The licensing criteria has changed from discretional to more objective criteria, and from a concern for who was farming, how much, and where this was happening to how the operation is done and how much, leading to a more technical operation for the industry and with regards to the management and ways of managing (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 20). With this detail focused management, the industry has evolved further into large high technology industrialization, one has experienced a large growth, an also externalities, which over time has led to the environment as being crucial when allocating license, choosing locations, and setting the limit for production. In the sense that the direction of focus in the

acts changed in 2005, one may say that this lead to a step away from strong focus on social and economical sustainability, over towards economic and environmental sustainability. This transition towards giving environmental sustainability a more important role had been stated already in the purpose phrase of the act of 1991, and the ownership regulations being deregulated to an extent. But in 2005, steps towards a more economical and environmental focus were taken. When this is said, however, some of the priorities in the licensing rounds in the early 2000s had a clear focus on social sustainability (like women, small companies, demands on processing etc). This turbulent start would soon land on a start of something more predictable and objective for those regulating and for the industry – regular, or more predictable growth (NFD, 2015,a). It is from this need that the TLS was born in 2017, and which shall be the focus of a later chapter in this paper.

Chapter 2 Theoretical framework and methods

2.1 Theories

The theory covered in this chapter has been chosen to answer the research questions. The principle of *sustainability and sustainable development* will be used together as the theoretical framework for better understanding the exception rule. First an explanation will be given of the principle in general and how it is perceived, with the three components (pillars) (*environmental-, economical- and social sustainability*) as a way of making the concept more specific . *Legitimacy* will be used as a framework to better understand the discussion surrounding the exception rule (§12) as part of the TLS. For a management tool to be efficient, like the TLS as a system, or §12 as an exception rule, it needs *legitimacy*. Two types of legitimacy will be discussed namely *content legitimacy* and *procedure legitimacy*.

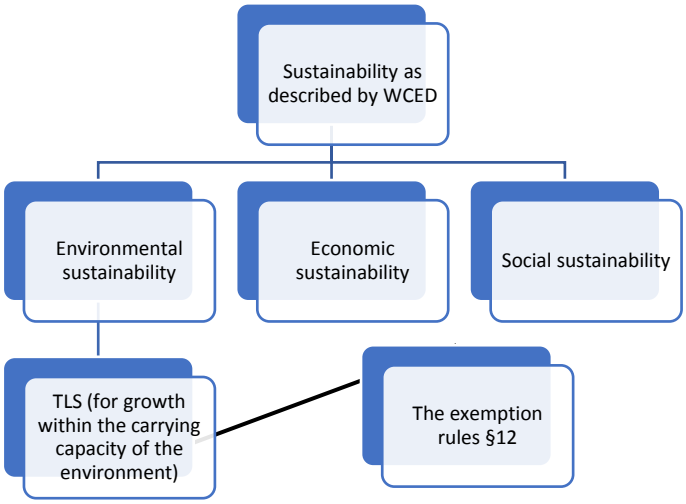


Figure 1: The theoretical content can be seen as a hierarchy from broad on the top to more narrow and specific theory on the bottom.

Before discussing these theories , it is important to have an overview of regulation. Management of renewable natural resources is challenging. The many reasons for regulating aquaculture have one important thing in common. According to Jentoft (as sited in Hersoug, 2015) in order for a system or regulation to be efficient and work, they are dependent on having legitimacy as well as be accepted by most of those who are affected by the system or the regulation (Hersoug, The greening of Norwegian salmon production, 2015). Without this one may risk that the regulation is only "on paper" and not being followed, or even broken due to lacking legitimacy and acceptance. The way regulation is undertaken in Norway, with concessions and licenses, makes the authorities an important actor with regards to responsibility for legitimizing the arrangement. They have taken a principle role in allocating the resources. Only a certain number of licenses and companies have received access following changing criteria. Therefore they, and not the market, also carry a large responsibility, with regards to legitimacy (Hersoug, The greening of Norwegian salmon production, 2015). According to Hersoug: "the critical issue is how the aquaculture authorities organize the allocation in terms of goals, criteria, and administrative processes (Hersoug 2005)" (Hersoug, The greening of Norwegian salmon production, 2015, p. 2). The mandate

from the authorities to *regulate* come from an acknowledgement in society that the fisheries resources in nature are renewable, but have a limit to what we humans may harvest (Hersoug, The greening of Norwegian salmon production, 2015). There is an attempt to manage the resources in a responsible way and to contain the legitimacy needed with the establishment of the TLS (NFD, 2015,a).

Sustainability and sustainable development

In order to find out what sustainable development is The Food and Agriculture Organization of the United Nations (FAO) gives the following definition:

> *"the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry, and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technologically appropriate, economically viable and socially acceptable"* (The Food and Agriculture Organization of the United Nations, 2019).

In this thesis a special consideration will be given to the last issue. Since the term sustainability was introduced it has been further divided into three pillars [see Figure 1]. These three pillars consist of *environmental protection, social development and economic development.* They re-enforce and are dependent upon each other (The Food and Agriculture Organization of the United Nations, 2019). Purvis el al claim this is a widespread way to divide the concept sustainable development. They further claim that this way of conceptualizing sustainable development has its challenges, in that it does not contain a theoretical development, and the way they see it has come as a result other than developing as a theory (Purvis, Mao, & Robinson, 2018).

In the current discourse about fisheries and aquaculture the term sustainability is often on the agenda. The United Nations has formulated a set of sustainable development goals, and several of them are more or less connected to aquaculture. (Goal 2 Zero hunger, Goal 6 Clean water and sanitation Goal 14 Life below water) (The United Nations, n.d.). Aquaculture is referred to in the public discourse as a contributor to solving some of the development goals, and there are proponents and opposers towards further developing of the aquaculture sector.

Those for believe that it is an answer to the challenge, and those opposing seem to believe further development is exacerbating the challenges creating the need to set these goals (Aarre, 2018; Berge, 2016).

So what is the connection between sustainability and legitimacy? According to Lyotard, a French philosopher, legitimacy is closely connected to *principal ideas or stories.* In his view legitimacy it is connected to *goals and a plan* in order to achieve an outcome further into the future. In his view, legitimacy is not connected to decisions in the past, but to an expectation that some idea will be accomplished (Lyotard, 1986). Sustainability is the Norwegian government's *goal and plan* to support the aquaculture management with legitimacy. Society's lack of faith and growing criticism towards contemporary aquaculture practice created the need for a system which helped to legitimize growth in the aquaculture industry. This may confirm that the idea of sustainability will help to legitimize growth by being a map and compass for shaping the route for aquaculture management (Jentoft, Legitimacy and disappointment in fisheries management, 2000) This is undertaken both on governmental-, as well as on industry level, as he sees management related to aquaculture as part of a plan to make sure later generations will inherit a world that has not been deteriorated so that it cannot regenerate (Jentoft, Legitimacy and disappointment in fisheries management, 2000). And it may be used in order to legitimize the activity and a need to further develop the activity in a direction guided by sustainable development goals set by the UN, the authorities, or other.

The idea of sustainable development is often claimed to originate from The World Commission on Environment and Development published in the report *Our Common Future* in 1987. This is where the principle of *sustainable development* was announced. The principle deals with how natural resources are utilized, and it claims that they must not be utilized in a way that deprives the possibility for utilization for the future generations. The Commission's work raised environment as an area that should not be looked upon merely as a sector responsibility, but that permeates the work of governments as a main goal (Olerud, 2016). Sustainability has several principles, but the main principle is that there are three concerns that should be included in all types of decision making: that is *environmental, economical* and *social* concerns, or pillars (Emas, 2015). It is a complex concept and can even be defined through a broader view than the three mentioned above. Such a view would include more pillars, such as institutional- cultural- or technical sustainability (Solås, et al., 2015; Purvis, Mao, & Robinson, 2018). In this paper, the three last pillars will not be disucssed any further.

The three pillars are frequently claimed to derive from the Brundtland report, Agenda21 and the World Summit on Sustainable development (Moldan, Janouskova, & Hak, 2011). They have been part of the discourse since this time, but according to Purvis et al, there is a story from the UN in which a holistic approach is adopted with regards to the three pillars, as UN calls them. They encourage balancing these three pillars, and this line of thought is central to the discourse that follows (Purvis, Mao, & Robinson, 2018). They distinguish between those that see these pillars separate units, and those who hold the view that several of these with regards to the research questions below e up a greater system (ibid). This is a complex picture, and the pillars help to nuance the term sustainability. According to Purvis et al, the concept of sustainability can be interpreted in a multitude of ways, and depends on the specific setting under discussion. Indeed, there are so many, that they claim sustainability can be termed a field of science in itself (Purvis, Mao, & Robinson, 2018, p. 1). Sustainability seemingly encompasses much. Thus understanding and regulating development in a sustainable direction with regards to these pillars has the consequence that those making decisions have to have several priorities in their minds simultaneously. However, a goal covering all three may also might end up being contradictory. This is shown Stoddart (as cited in Emas, 2015) who emphasizes this complexity, or integration as it is being called, puts the traditional governance under pressure. She states that:

"Institutionally, government organizations are typically organized into sectoral ministries and departments. This works fairly well until the system encounters something very comprehensive and highly integrated in nature, such as sustainable development. In practice, sustainable development requires the integration of economic, environmental, and social objectives across sectors, territories, and generations. Therefore, sustainable development requires the elimination of fragmentation; that is, environmental, social, and economic concerns must be integrated throughout decision making processes in order to move towards development that is truly sustainable" (Emas, 2015, p. 3) Emas further claims the principle of integration is what distinguishes sustainable development as a concept from other types of policy (ibid).

According to Solås et al, the Ministry of Trade and Fisheries has claimed too narrow a focus on environmental sustainability (Solås, et al., 2015). This could lead to a focus which neglect the other dimensions, such as social sustainability (Ibid). Kuhlman and Farrington also offer the view that sustainability as consist of three dimensions. They suggest that there has been a

separation into what they call dimensions over some time in what the concept means. In their view, this division into dimensions involves several challenges. Social- and economic sustainability are often separated, but they claim that these two are the same. They also claim that creating three distinct pillars can result in the environmental pillar becoming looked over, or that it makes the contradiction between conservation and welfare goals more unclear (Kuhlman & Farrington, 2010). As can be understood, they are critical to a separation into three distinct pillars, as they believe that it creates less content to the contradiction between development and sustainability, and by separating into three dimensions, it can be representing something seemingly possible to follow through, that might in reality be quite challenging (Kuhlman & Farrington, 2010). When reading about sustainability, it becomes clear that separating the three dimensions, or components of sustainability can be challenging and unclear and contribute to much confusion (Kuhlman & Farrington, 2010) and (Károly, 2011). One can claim that acceptance and legitimacy lies implicitly as part of social sustainability as it is people who give acceptance or not to a system or institution (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). Those who are affected by the rules or regulations, are less likely to conform with the rules, or even prone to break them if they do not accept them or these does not have legitimacy. This will also be important with regards to if people will continue to accepting a belief that sustainability can actually be accomplished, as a part of the planned system in the future (Mikalsen & Jentoft, 2001; Jentoft, Legitimacy and disappointment in fisheries management, 2000).

Legitimacy and social acceptance in aquaculture management

> *«The main issue is what is acceptable in terms of ecological footprints to Norwegian politicians (acting on behalf of the Norwegian people) and, in a similar manner, what is acceptable to foreign consumers, who are increasingly occupied with sustainability concerns"* (Hersoug, The greening of Norwegian salmon production, 2015, p. 16)*(auth.own.trans).*

The relationship between legitimacy and a regulation system is not a simple or constant one (Jentoft & Mikalsen, Lastet til ripa – Fiskernes rettsstilliing I ressursforvaltningen, 2001; Jentoft, Legitimacy and disappointment in fisheries management, 2001). According to Max Weber (as cited in Jentoft, 2000), legitimacy was connected to power, and a central question he raised was when power can be considered to be legitimate (Jentoft, Legitimacy and disappointment in fisheries management, 2000). In order to be legitimate, those in charge (in

this case, the aquaculture management) need to respect the legality principle. According to Jentoft, fulfilling the legality criteria is not sufficient, since the laws themselves may not contain legitimacy by those affected by the laws, or the management system, and therefore in reality be illegitimate (Jentoft, Legitimacy and disappointment in fisheries management, 2000).

Weber (as cited in Jentoft,2000) claimed that legitimacy came from those involved, and the way they viewed the power. In this case, the individuals in the industry that would be affected by the regulation would consider the degree of legitimacy a regulation system would contain, and thereby whether it is legitimate (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). A weakness in Weber's view on what legitimacy contains and how it is shaped, is that misses out on something crucial, according to Jentoft. It deals with the relationship between legitimacy and the truth and how knowledge works with regards to legitimacy. It refers to the way knowledge may be held back, badly communicated, sold in/ marketed or used by those with power and how this is playing a crucial part in legitimating regulations (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 31) This affects the way those possessing or wanting power, and those affected see the regulations. This is further connected to the role science plays in the shaping of regulations in fisheries management and the reliance on the biological field of science is something that creates uncertainty in fisheries management. Nature is changing, and we do not have full overview and knowledge about the complexity of nature. This creates scientific uncertainty which can be used to criticize the regulations foundation by the industry (Jentoft, Legitimacy and disappointment in fisheries management, 2000) This can lead to a legitimacy being challenged because the knowledge about nature generated through science becomes uncertain. How the society perceives the regulations, also affects a regulation systems legitimacy. This implies that it is not only dependent upon how the industry receives the regulations (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). There may be several reasons not to accept the regulation. Without an aquaculture management system that contains the traits mentioned above, this will affect what degree the industry and the surroundings will accept the system (Jentoft, Legitimacy and disappointment in fisheries management, 2000). Deliberation will be needed to see whether the system provides legitimacy or not, and this is found in the consultation processes and the interviews represents this process.

In the shaping of an aquaculture management system there are many considerations to take with regards to the stakeholders. This can create challenges for system legitimacy. It is also necessary to take these (within reasonable limits) in order to secure legitimacy (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). In aquaculture, the challenges facing the companies are diverse, so the considerations may also be diverse. The industry is spread both geographically and with regards to the size of companies and how and where they are operating (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001).

The organizations affect the legitimacy. They represent a group, and to what extent they will be able to agree upon a (perceived) system that they will support, will affect the legitimacy (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001).

How the public considers the regulation is according to Jentoft an important concern in fisheries management (Jentoft, Legitimacy and disappointment in fisheries management, 2000). As the aquaculture and fisheries activities happen in the public area, and affect the environment, the public is preoccupied, to a larger degree than before, in how these areas and the resources are treated. Importantly, the actions of the earlier generations negative externalities (e.g.a near collapses, diseases, pollution) is something that media and the public reacts to, and affects the regulations legitimacy from the outside.

Legitimacy can be divided into types, and in the continuation *content legitimacy* and *procedure legitimacy* will be defined as they will be central to the discussion of the legitimacy of §12 as part of the TLS, and how they affect the social sustainability of the aquaculture industry.

Content legitimacy

This can be explained by a legitimacy that derives, as the name implies, from the content of the subject under discussion (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 31). Beetham's words are illustrative here. It shows how legitimacy becomes a vital ingredient in whatever one wishes to make. According to Jentoft and Mikalsen, there are certain objective criteria that will be used as standards for how legitimate the system itself is. But rules are not legitimate just because they are established. They cannot legitimate themselves. Regulations must also be legitimized according to

fairness, rationality and reason (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). This type of legitimacy is founded in something more general than what those involved directly might believe about the regulation system and that is has a normative aspect to it, meaning that it does not come as a result from the establishment of a system, but rather is a crucial ingredient as part of a recipe for it to become legitimate (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). If the traits mentioned above are fulfilled, one can claim that the regulation has both objective and content legitimacy. If the rules then will be followed depends on the acts of the operators in the industry, and is closely connected to morality (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001).

Procedure legitimacy

This is a type of legitimacy that involves the procedure(s) in which the regulations have come to be. As the name implies it deals with the process. In order to facilitate for this there should be channels or forums for contact between the authorities and the industry that facilitate decision making. This is important to secure communication. By establishing these forums ,like the consultation process arrangement in the Norwegian Aquaculture Management, the authorities facilitate a *bottom up approach*, meaning that the industry is given an opportunity to come with their opinion, and be part of the process (Jentoft, Legitimacy and disappointment in fisheries management, 2000, p. 141) Participation then plays a role in the shaping of the regulation system. The number of stakeholders may be large, and there are limits to participation, especially when many people are affected and the diversity of interest makes it challenging to involve everyone. Organization representation may be a solution, and this also has challenges with regards to representation (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). The opposite is a *top-down approach*. This implies that the authorities are not focusing on the opinions of the industry, because they themselves have the best answer(s) to how the regulations should be (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001) However, if these arenas do not work and are only formal, process legitimacy is not working the way it should (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 35). Jentoft and Mikalsen has made a figure to show how these two are connected, and how they affect the total legitimacy.

System contains content legitimacy?

System contains procedure legitimacy?		Yes	No
	Yes	1	2
	No	3	4

Figure 2: Illustration of the relationship between content- and procedure legitimacy. Source: (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 34).

To take a step back, before explaining the figure further a metaphor will be used to introduce it, and to explain it. David Beetham (as sited in Rothstein 1998) has an explanation that is useful in understanding the importance of the concept legitimacy. In metaphorical comparison he also illustrate how vital legitimacy is in order for a regulation system or rule (governance) to function:

> *"Legitimacy is not the icing on the cake of power, which is applied after baking is complete, and leaves the cake itself essentially unchanged. It is more like the yeast that permeates the dough, and makes the bread what it is"* (Rothstein, 1998, p. 39).

The Figure 2 illustrates in a simple manner how the two types of legitimacy are complementing each other. Let us divide and combine two crucial ingredients in order to make a cake that most possible involved will prefer (both inside and outside the industry). As Beetham (as sited in Rothstein 1998) may implies, this takes yeast (content legitimacy) to permeate, and let us add another ingredient flour (procedure legitimacy) to make the cake even more tasty (Ibid). This gives us alternative 1 in the figure which will be most legitimate in that more of those affected will prefer eating the cake. Eating the cake in this context would mean accepting the system to a large extent. The least preferred cake, both in reality and in terms of legitimacy would be alternative 4, lacking both content legitimacy (yeast) and procedure legitimacy (flour). The figure also includes scenarios where one of the two ingredients is lacking (2 and 3). If the content (3) is being perceived as fulfilling certain criteria (reason, rationality and equity) the procedure might be accepted. Also if those affected have had a say, or been included in the decision-making process (2), they will be more prone to accept regulations that will impact them. In this case through consultation processes that

leads to decisions (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). Jentoft states that a management system which follows a deliberative agreement is most likely to be legitimate (Jentoft, Legitimacy and disappointment in fisheries management, 2000). Including users in the decision making increases the chance of those included to comply and support, and therefore contribute to the effectiveness of the system (Mikalsen & Jentoft, 2001) *"The view that fisheries management is environmental politics is rapidly becoming conventional wisdom – fueling demands from other stakeholders for participation and influence"* (Mikalsen & Jentoft, 2001, p. 291). Environment has come into management, and so have stakeholders other than direct user groups, so the interest for and concerns about the aquaculture industry is larger than before with regards to the environment (Mikalsen & Jentoft, 2001, p. 291). Hersoug claims that the results expected from the new system (TLS) will depend on whether the process towards establishing it is being accepted as legitimate by a broad audience. This also goes for the research setup and results behind it. In addition he states that the results it is able to or not able to provide, in terms of improving the environmental situation will be important for the legitimacy of the system and will affect the development for the industry (Hersoug, The greening of Norwegian salmon production, 2015). This acceptance can be seen as social sustainability. This type of sustainability we can say is contained by content legitimacy and procedure legitimacy in this context. Consequently, a fundamental question which follows is, what happens when one kind of sustainability dimension is lacking, or cracking, or underrepresented? "…a management system that cannot be defended on grounds of social justice is likely to be challenged, however solid its legal foundation" (Rothstein, 1998, pp. 141-142). This neatly summarizes the main challenge facing the TLS. There is a challenge with the collective responsibility and punishment, and the legality.

2.2 Methods

This part of the chapter will deal with the methods being used. The purpose of this part is to describe the methods chosen with the purpose of answering the research questions (Everett & Furseth, 2012). I posed the following research questions: *How does the TLS affect social sustainability of the aquaculture industry? In particular, how the exemption rules (§12) affect legitimacy and social acceptance of the TLS?*

To answer these the paper is based on using qualitative methods, namely document analysis of different texts and 5 individual telephone interview with 3 representatives from farmer companies, one person from the NFSA and one from the Directorate of Fisheries.

Furthermore what a method is and the reason why the methods chosen were done will be explained. Then a description about how the data was collected will be given, along with why the data selected was used. Also the quality of the data will be evaluated as well as considering the ethical issues with the methods being used.[1] It may aid in seeing the questions from different angles and points of view. According to Grønmo when looking at aspect of society that is multifaceted, combining methods can be strategic (Grønmo, 2004, p. 55) Due to the constraints of the assignment with regards to time and pages, the methodological questions and considerations regarding the quantitative and qualitative methods will not be elaborated (Grønmo, 2004).

So what then are *methods*? According to Everett and Furseth they may be considered as one of many *tools* used to answer research questions and to produce new knowledge (Everett & Furseth, 2012). When considering the research questions a document analysis along with phone interviews were decided as methods in order to get a good understanding of the research questions. These seemed best suited to answer them. This was due to the available public data through the consultation processes leading up to establishing the TLS and the exemption rule and farmers with experience and knowledge about the exemption rules. Other documents were used will be elaborated further down in this part of the chapter. Interviewing as a method gave the opportunity to hear the opinions about the exemption rules from those that had experience with the first application round. Therefore getting in contact with those involved in the round was important. The advantages of method triangulation has already been discussed, but time and cost constraint are also among the reasons for choosing these two in combination.

Interview: what, why and how

As an interview technique a structured telephone interview was chosen. An interview guide was made before the interviews were followed through. This is part of a formal interview (Jacobsen, 2005). Interview, is like document analysis an intensive method, in that it went in depth with a few objects interviewed on a certain topic (Jacobsen, 2005)**.** The rationale behind was that it would be easier to get in contact with interviewees if they could participate on the telephone. A weakness with the telephone interview is that the chance to see how the person being interviewed responds, is missed by the one that interviews, due to the fact that they

[1] Answering the research questions would involve using different methods, or so called method triangulation. This means that the researcher seeks to answer the research questions using different data and methods (Grønmo, 2004).

cannot see each other (Jacobsen, 2005). According to Jacobsen this may influence the way the interview turns out, because the two cannot see each others reactions. An example can be that the person being interviewed receives a question that makes this person uncomfortable. This might lead to that the person closes, and continues from there being a source of information less open as a consequence of what happened earlier (Jacobsen, 2005). However, an advantage is that the telephone interview lessens the interview effect. This means that the contact between interviewer and interview object can be affected by them being in the same place (Jacobsen, 2005)Another advantage is that the interviewer and the one being interviewed do not have to travel (Jacobsen, 2005). The people in the aquaculture industry are busy. The examples that two persons did the interview while driving may help to illustrate this. The fact that they were in the car may also have affected their answers, as one person did not have the question sheet accessible as the interview took place. They were alone, or had people in the car and this may potentially have affected their answers as well. Furthermore having sent them the interview first, I assumed it would make it easier for them to participate. Three farmers were interviewed. In order to hear the viewpoint from different sides the Directorate of Fisheries (DOF) and the Norwegian Food Security Agency (NFSA) were also contacted and interviewed. The contact went through email and telephone. They all received interview guides before the interview, with enough time to read through and look up things, or ask. They all received the notes after the interviews and sent back their corrections or comments, and if there was something that needed to be deleted or changed. A set time was given in the interview guides (See appendices 3,4 and 5 for details). Two things that is worth mentioning is that the interviews were longer than planned. The persons I interviewed had many interesting things to bring up and all spent extra time talking. This was most likely a consequence of me having too many questions for the initial time that was planned, which was 30-45 minutes. The interviews lasted up to the double of that time estimate. The data had to be accessible as well as suited for the research questions, along with being reliable, and valid (Everett & Furseth, 2012, p. 127). The different interview objects from the farmers, NFSA and the DOF all received more or less similar questions. This was done in order to compare the answers, and to get a deeper understanding of the exemption rule. A possible weakness of the data gathering is that some information gathered in the interviews may have been excluded due to simultaneous taking of notes while on the phone. In order to try and prevent this, questions were asked in order to clarify, sum up and also the notes were sent to those interviewed so they could check if the notes were representative in accordance with the interview the way they see it. A negative thing about the interviews were that two were done

in the same day, and one late at night. My concentration was not as good as during the interview earlier as it is a meticulous, and stressful way of performing an interview. I was also not able to write down all the comments, and the interviewing in the cars made me have to ask again due to back cell phone connection and bad sound sometimes. These things may make the telephone interview was perhaps less reliable and valid than meeting those being interviewed face to face (Jacobsen, 2005). The interviews were coded in order to extract the categories that gives content that is useable for answering the research questions (Grønmo, 2004).

Document analysis: what and why

The document analysis is a much used method for data collection and is defined by Jacobsen as "the study of documents […] made by other than the researcher (secondary data)" (Jacobsen, 2005, p. 140) (auth.own.trans). Important issues with document analysis is the degree of reliability and which documents the researcher decides to use (Jacobsen, 2005, p. 165). Again another explanation given by Bowen is "Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009)" (Unknown, 2016) . *The documents* that were used in this paper were scientific articles, consultation process documents (answers and consultation documents sent out by the government), reports, laws and regulations as well as books and media articles. All of them were public information. Document analysis an intensive method, in that it goes in depth with a few objects on a certain topic (Jacobsen, 2005)**.** Document analysis was chosen because of its cost efficiency. A masters project has limited budget and it is a method that allows one to access information in a simple way. With to content and time constraints one consultation process was not considered directly relevant enough (flexibility production areas) as it dealt with licenses geographical situation, more so than exemption growth. It affects the farmers, to a degree that it could be included. With regards to the research questions posed and the time to fisnish the project, it was not included. One may say that since exemption growth, rather than how to organize the licenses in the new production area was the focus, it was not included as much as other consultation processes due to the fact that having done so would possibly have resulted in not managing to be within the time limit given. Content analysis, which is a type of document analysis, has met criticism. Although suitability of giving a large picture is maybe better than detailed showing what a text is about (Unknown,2016; Grønmo, 2004). This was used with regards to

sustainability and documents leading up to §12 being established. It was also used along the way to find information necessary to answer the research questions.

Interview: Because those being interviewed from the farmers and the authorities have been through the first round, or involved in what is being done research on, which is the first round of the exemption growth they are responders. With regards to social acceptance one may potentially also claim that the farmers are responders and those from the authorities are informants (Jacobsen, 2005).

How the data analysis was done: Selecting and collecting of data and data analysis

After the interviews, the data was written out in fulltext. All the points were finished, and sent in return so those interviewed could do corrections. The data that was collected was mainly secondary sources for the document analysis. A thought was do get a broad selection from the sources, in order to illuminate well the research questions (Jacobsen, 2005). A starting point was to look at all applications sent in 2018, and the answers given from the NFSA. From this selection of a population, the interview objects were chosen based on production areas and all that applied in yellow and red colored areas was invited to participate. Also those managing the rule were considered interesting to interview, but there was not enough time to interview more than five person, even thoug had the time frame been longer, persons mentioned during the interviews could have been contacted and invited to participate. The sources from the interviews were primary sources in that the, unlike the secondary sources used for the document analysis, were not interpreted (Everett & Furseth, 2012, pp. 132-133). What is important to include regarding the data from the interview is that those interviewed could have an interest in presenting themselves in a certain light, mainly a positive light. They also possess certain roles, where they were interviewed as part of their job, the role they are set to fill (Jacobsen, 2005).

About the data collection process interviewing in the evening made taking notes more challenging, so a lesson learned is that interviews should be done earlier or early during the day if possible. This also went for writing down and finishing notes. The time during interview in the evening I waited until the next day. The easiest is to do it right after the interview, but I finished too late one time to manage it in a proper way. Data might have fallen out due to this.

Everett and Furseth mentions 4 criteria for the data one wishes to use: accessibility, selection, reliability and validity. Alongside these they also underline the importance of making ethical considerations about a research project (Everett & Furseth, 2012, pp. 133-136).

Accessibility, selection, reliability and validity: why the sources were chosen

This paper consists of a discretionary selection of those being interviewed. This was chosen because it was considered the best option in order to analyze/illuminate the research questions. The data for the document analysis was chosen with regards to the relevance they had to the research question. Since the area is large, with a lot of documents, those most relevant to the questions were chosen. This may have affected the answers, but a selection had to be done. The documents chosen had to be *accessible.* The process of establishing the exemption rule have been a public consultation process so the consultation documents used were accessible at the government homepage. At the start of the research project a county was contacted and asked whether the documents in the applications would be public. This would have to be requested and explained with regards to why the information was needed. But since they do not handle the applications with regards to the exemption rule this possibility was not used. Since the NFSA handles the exemption rules, a decision was made to only focus on the answers given from the NFSA to the farmers, and then use interviews to give a deeper understanding from different sides**.** The consultation documents and answers were important in the data gathering. Also, the answers from the interest organizations were used to give an impression what the companies (both small and large) stated concerning the TLS and the exemption rule. Throughout the data gathering process §12 and statements about it was the main focus. Those being contacted mainly wished to perform the interviews. They received a general invitation, and chose someone to be interviewed based on the topic within their organization.

The groups chosen were those directly involved, the farmers (all that applied from the red and yellow production areas in 2018 were invited to participate, and those wanting to participate got the chance to participate. Representatives from those handling the exception rule, NFSA, and the Directorate of Fisheries also participated. These were chosen in order to get a deeper understanding of the exemption rule, as well as getting considerations about the arrangement from two aquaculture management points of view. Also because those interviewed have worked with the rule from different sides in different parts of the process, both directly and indirectly. Sometimes interrupting was not considered possible in order not to seem rude. The respondents/informants had a lot on their hearts. This made the topic even more interesting.

The role of myself as a researcher, being a student at the Norwegian College of Fisheries Sciences may have affected the research. Also I grew up in the area with red production zones, and have a strong interest for topics related to the sea. These things may have affected interest for as well as the outcome of the research project. The advisors may also have had an influence on the research.

In order to answer the research questions, sources that were as *reliable* as possible had to be selected (Everett & Furseth, 2012). The documents from the consultations are from the governments web page and therefore considered very reliable, although not everything was found relevant. After reading them, they were relevant with regards to the opinions about the exemption rule as it was being shaped, and the information given by those being interviewed gave an impression on viewpoints now after the exemption rule has been tested in practice. The amount of documents used, as well as persons interviewed had to be limited, and with a goal to have done the interviews before the Easter holiday, as was managed. The fact that they have different experiences with the exemption rules, and were all selected in order to get a perspective that was as broad as possible within the frames of the research project, with regards to the research questions. Due to time constraints, the interviews were done through telephone.

Regarding the *validity* of the data it may have affected that those asked were in the red and yellow areas. The goal in checking the validity is to make sure all those data relevant in order to answer the research questions have been included (Everett & Furseth, 2012, p. 135). They have more at stake than applicants form the green areas, especially those from the red areas. One critique of this research project may be that a better picture and more valid overall would have been painted if all those applying were interviewed, and if all those invited from the red and yellow production areas were interviewed, also farmers that had not applied. On the other hand, those in green areas were already receiving 2% growth and potentially had less incentive to apply for growth.

Ethics considered with this research:

The ethics were considered throughout the project. Those interviewed were contacted through an email that described what the research project was about, and that they would be provided an interview guide on beforehand. After having sent them emails, those not replying were contacted per telephone in order to clarify if they would participate as well as setting a time for the interview, due to e.g having forgotten the email or was to busy to resond at the time it

was sent to them. This was done in the believe that those being interviewed would find it simpler and less time consuming to do so. In combination with an interview guide this was considered a suitable form of interview for this project. They were informed that participation on their part was voluntary and that they could chose to not to participate if they wanted, and reject participation in the project at any time during the process. The interviews were done from Friday 5the April to Wednesday 10th April. In the initial email they were invited to participate, got information concerning the research projects topic, about the interview and about them being treated anonymously in the paper. Therefore numbers are used instead of their names in the text.

The period when the interviews were followed through, was also the period when the applications for the 2019 exemption growth round were sent in (Mattilsynet, 2019). This may have influenced their answers both ways. Negatively by speaking also about the present application round and that some experiences from this year colored the answers. It may however been positive in that they had just gone through the exemption rules and the rules applying to the exemption arrangement, meaning they had the complex rules and criteria fresh in mind and could compare. But it may have played in on everything from their will to let themselves be interviewed, because they might have felt that they had this in their recent memory, to a wish to share, to them mixing the two rounds in their responses.

Chapter 3: The "Traffic Light System"

In this chapter the "Traffic light system" (hereafter TLS) will be explained. First, a short introduction to the TLS will be given. Then an attempt will be made to answer *why* we got the TLS. Also it will look at *how* has TLS been developed. Lastly *how* the TLS is organized will be attempted explained?

3.1 Introduction to the TLS?

The TLS is the name of a new system for production capacity adjustment set up to regulate growth in the Norwegian aquaculture industry. It concerns commercial grow out licenses for salmon-, trout and rainbow trout aquaculture in seawater. The system was entered into force 15th October 2017 (NFD, 2015,a; NFD, 2016).

3.2 Why did we get the TLS?

Focus on sustainability:

Consideration for wild salmonids have been the main focus when shaping the TLS. The impact from aquaculture on these, has resulted in a system that measures environmental sustainability on how the lice pressure is on the wild salmonids, and mainly on the Atlantic salmon *(Salmo salar).* Norway is obliged to protect and conserve the Atlantic salmon and have taken steps earlier to ensure protection of this species. A tendency is that the numbers of Atlantic salmon has been decreasing both in Norway and elsewhere (Klima-og miljødepartementet, 2002). This backdrop should be remembered when TLS focus so strongly on wild salmonids. Many documents have been important in securing the protection of the wild salmonids and in this respect a strategy from 2009 has played an important role by providing measures towards shaping the TLS, and keeping a wild salmonid protection focus in mind. The focus itself on operating sustainably in Norwegian aquaculture was stated by the Stoltenberg II government. Their priorities resulted firstly in a "Strategy for a competitive Norwegian aquaculture industry" in 2007. Then, as the environment was such an important part for the government, a strategy devoted special attention to environmental sustainability called "Strategy for an environmentally sustainable aquaculture industry" came in 2009 (FKD, 2009). The strategy contained five main areas that were to lead the development of the aquaculture industry, and where it also has environmental impact. These where use of area; disease; emissions and contaminants; impact on wild fish genes and resources for fish feed (FKD, 2009, p. 2) These five main areas were challenges. This document also suggested 32 measures that was to be important in the shaping of the TLS. NGOs with focus on environment and research had assisted in making the authorities aware of these, and something was needed to be done to ensure the challenges were solved. The strategy can be seen as a result of a government that was acknowledging these. "[…]*it will be an important management tool in the aquaculture policy to have a conscious relationship to what characterizes an environmentally sustainable production»* (FKD, 2009)(auth.own.trans.). It has been a precondition that the three pillars of sustainability would set the frames for the development (FKD, 2013, p. 10). This means environmental, economic and social sustainability. So since the government obliged themselves to ensure an environmentally sustainable aquaculture industry, the new system had to be constructed to secure environmental sustainability, one way or the other.

A need for growth

Norway was looking for industries that will substitute the petroleum based industries. Aquaculture is a leading industry today, and aquaculture has been stated to be one of three industries (alongside maritime industry, and offshore technology) where Norway can grow, and be leading internationally (A knowledge-based Norway, T.Reve). There was a wish to increase production to stimulate the economy, and for this growth was needed. As mentioned earlier, seafood will play a role as a future industry of importance after oil. The Soria Moria statement II (erklæring), which along with the Soria Moria statement I describes the main of the topics and priorities concerning the politics of the Stoltenberg government (Bonde, 2018). Norway was to be the leading seafood nation, and that in order to achieve this, the government would have to contribute to innovation and reorganization and strengthen science related to ocean related industries (Teknologirådet, 2012). The wish from the government was to have a strong industry and keep developing science and innovations to solve the challenges and enable growth (Teknologirådet, 2012). The market was asking for a larger amount of salmon than what was being produced and limits were set, as seen, by challenges related to the environment. The need for food in the future, and the oceans role in this as the population will be growing was a topic at the environmental summit in Rio in 2012 (FKD, 2013, p. 22). The government could take an active international role in developing knowledge and produce from the oceans. *"A clear and predictable policy for growth will be able to release creative and good investments for a future oriented industry that increases its competitiveness and solve environmental challenges* (NFD, 2015,a, p. 2)(auth.own.trans.) The industry also wanted growth, but it is symptomatic of the challenges when looking at a planned 5% increase in 2012 that was stopped due to the challenge with sea lice (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 157) A perspective analysis came out in 2012, "Value creation based on productive oceans in 2050". It estimated that the ocean based sectors, where aquaculture is one out of six, could create a turnover value of 550 billion kroner (Almås & Ratvik, 2017). According to the same report it is estimated six fold increase in total biomass of farmed salmonids (FKD, 2013, p. 22). The same year, salmon was the most important species in the aquaculture industry. For the aquaculture industry those behind the perspective analysis estimated a possibility, if certain preconditions were fulfilled, that the production of salmon and trout in 2050 would be 5 million tons. They also believed one could reach 3 million tons in 2030, which would lead to 119 billion kroner in turnover value in 2030 and 240 billion kroner in 2050. The document mentioned above, alongside HAV 21 and White paper 22 (2012-2013) (known as the Seafood paper) confirm and explore answers to what and

how the petroleum based industry can be replaced, and how these industries can grow to replace it, as well as exploring trends and look at how management and research must cooperate with business in order to release a potential growth that the ocean may provide (Det Kongelige Norske Videnskabers Selskab (DKNVS) og Norges Tekniske Vitenskapsakademi (NTVA), 2012). The Seafood paper has included a fivefold increase for aquaculture by 2050 given that certain preconditions are fulfilled (FKD, 2013, p. 22). As a result of the strategies, reports, and the governments focus, a precondition for growth has been that it must be environmentally sustainable. The system needed to be predictable when regulating growth was also a precondition mentioned in the Seafood paper (FKD, 2013). So the signals and estimates of growth potential from different actors, alongside the governments awareness of aquaculture's ability to be an important industry nationally, and internationally in the future, created a need for growth.

A need for a more objective system

The way of regulating growth earlier, through concession rounds with criteria's defined from time to time, and discretional handling, has represented a clear tendency of randomness. In addition to this the parameters for limiting growth has varied. One would be informed about an upcoming round, and the current criteria's, but rounds have since the start not come in a predictable, but rather irregular manner. This has led to criticism and a wish from the industry for a more predictable system for regulating growth of production in Norwegian salmonid aquaculture. As a result those in charge of management also expressed a want for a more objective and less discretional system (NFD, 2015,b, p. 5). The following quote from A,Guttormsen in the White Paper 16 (hereafter the Aquaculture paper) that along with Innst 361 S is the foundation for the traffic light system helps to illustrate the challenge of unpredictability and a lack of objectiveness the politics and regulations of growth has displayed:

> *"When it comes to regulations and politics for growth in the aquaculture industry changing governments have shown all but predictability. Seen from the outside, the criterias for allocating new licenses has stood forward like a display of good wishes combined with a good dose of creativity."* (NFD, 2015,a, p. 2)(auth.own.trans.)

So earlier irregularly arranged concession rounds with varying and unpredictable criteria's and parameters of growth had been an unpredictable system of regulation growth that had

forced forward a need for an objective system, from the industry side, aswell as from the management side.

A need for a simpler administrative system

A statement from a report from March 2012 from The Office of the Auditor General made clear that in order to solve the challenges with regards to the environment in the aquaculture industry, that had developed into major issues preventing further growth, the Auditor General made clear that the change in management and regulation of the industry would have go through significant changes (FKD, 2013, p. 117). This contributed to a five percent growth of MAB across Norway being called off, except the two northernmost counties (Hersoug, The greening of Norwegian salmon production, 2015, p. 9). The concession round in 2013 was a demanding round, both for the administration and the industry. It had developed into becoming complicated as ever before, although it was meant to make further growth possible. These were the so called green- and super green licenses**,** divided into different groups, with different criteria's. The criteria's were clearer and expectations regarding reporting from those offered growth were clearer than earlier rounds. The effect of the round was costly, both in human, temporal and economical terms for all involved. This made clear to the administrative side that a simpler system would be both more economical as well as labor saving before, during and after allocation. But it had a strong focus on sea lice limits and escapees, and was meant to facilitate for growth for those companies trying to solve the sea lice challenge and escapees and in this respect had a stronger focus on the environment than earlier rounds (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019, p. 158). In short, the complexity of the concession rounds had become an administrative burden, and a simpler system would be needed.

So in an attempt to sum up, there has been great pressure and expectation on the aquaculture industry as well as on improved management, with regards to solving challenges (global needs that pushes for growth). Due to the fact that there are challenges in the industry already, when it comes to the environment, all sectors involved needed to be included in order to solve the challenges. This has not been a starting point/task only for the industry, science or the government alone, but the government seems to have acknowledged that Norway has opportunities here, but need to change in order to fulfill, or at least take a more leading role in the future.

3.3 How has the TLS been developed?

Many actors have been involved and the planning, following through and implementation of the TLS has taken approximately 10 years. This shows that establishing a new system takes time, and it also shows that in this short chapter some choices must be made with regards to what can be included and not. Here the most important steps in the development, and the actors that played an important role, as well as documents involved will be included to show how the system was developed. The strategies mentioned earlier can be said to have been the start of the TLS. These led to further steps towards establishing the TLS and the next important step was the prolonging of an important measure in the sustainability strategy. This was the establishment of a committee to consider how aquaculture were using, and could use all potential area if possible. This was the Gullestad committee. Their mandate was to consider a new structure for the aquaculture industry with regards to use of area dedicated to aquaculture that would be of a kind that would mitigate the challenges the industry was facing, and also contribute to coexistence with regards to the waters used and to be recommended as there are multiple users of the public areas and user conflicts were and are still an issue alongside environmental concerns (FKD, 2011, p. 3) Of the 32 measures in strategy 2009 the suggestion to establish an expert committee for efficient and sustainable use of area in the aquaculture industry was very important(auth.own.trans). This committee was established to investigate the possibilities for a more efficient and environmentally sustainable use of area (FKD, 2009, p. 28). The committee was appointed in September 2009, and delivered their report "Efficient and sustainable use of area in the aquaculture industry"(auth.own.trans) in Febuary 2011. They layed the foundation for a new structure of the use of area, by suggesting measures as well as principles such a structure (FKD, 2011, p. 12). The view on area for the industry as a scarce, rather than an unlimited resource, is something that permeated the committee's work (FKD, 2011). An important aspect that they were to look at was that risk of disease contamination and environmental impact from the planned suggestion was to be as small as possible (FKD, 2011, p. 3). Their report was sent on hearing with deadline 10.8.2011 (Fisk Media AS, 2011). Of important aspects from their work that would shape the system was: the principle of growth by a rule of action and production areas. The rule of action came largely as a result from their report (NFD, 2015,b, p. 5). The production areas that became part of the TLS were based largely on the recommendations from this committee's report also. These were suggested established so the rule of action would operate within a specific area. Since it laid the foundation for the choice of solution for growth, the principle of a rule of action and suggested production areas it became an

important document. These were to be essential components of the TLS following a process in the democratic system . Their work can therefore be said to have laid a large part of the operative foundation upon which the TLS were to be based: rule of action and production areas. The production areas became the unit where the capacity adjustment will work, and where the rule of action in the TLS will operate. The later white papers were based to a large extent on the report by the committee.

The White paper 22 (2012-2013) "The worlds leading seafood nation." (hereafter the Seafood paper) came out in 2012. Here it was suggested the process of establishing and implementing a new system for growth should be a democratic regulation process (FKD, 2013, p. 22). The seafood paper bases itself on several documents, showing the growth potential of the industry (FKD, 2013, pp. 7-8). Some of these documents are together painting an opportunity picture for increased value creaton and growth possibilites that have contributed to increased priorition of ocean related activity within areas such as research, industry and management (FKD, 2013, p. 8). These documents are different and were produced by several actors (the government, Norway's Technical Academy of Science (NTVA), DKNVS (The Royal Norwegian Scientific Society), Torbjørn Reve, SINTEF Technology and Society, HAV 21 strategy for holistic marine science effort). Some of these documents have been referred to earlier and they were included, along with other organizations and their results as part of realizing the vision from the Seafood paper concerning value creation, through a environmentally sustainable management arrangement. This management was to be knowledge based, and all in the ocean related activities needed to be included/drawn upon as contributors, in order to release the potential that was seen from outside and within Norway (FKD, 2013, p. 22). So the TLS creation must be seen as a result of the vision of the Seafood paper, that Norway was to be the world's leading seafood nation. The further process included many research organizations, with IMR as the main organization, and the process was, as mentioned suggested to be a democratic regulation process.

After the Seafood paper came a hearing, in November 2014. The hearing was called Hearing document – paper to the Parliament about growth in Norwegian salmon- and trout aquaculture and it was concerning how the goal of predictable and environmentally sustainable growth should be accomplished. This was a proposal that provided 3 suggestions for growth based on the report from the Gullestad committee. The level of risk, with regards to how much growth would be allowed was also brought up.

As a result of the proposal the White paper 16 (2014-2015) (hereafter The Aquaculture paper) "Predictable and environmentally sustainable growth in Norwegian salmon- and trout fish farming" (auth.own.trans) was completed in March 2015. The day after completion the recommendation was accepted in State Council (Regjeringen, 2017). This paper was meant to lay the foundation for a growth that would be predictable and environmentally sustainable for and in the industry (Næringskomiteen, 2015, p. 7). In the Aquaculture paper the system for growth, based on a rule of action with salmon lice as an indicator, in production areas was put forward and suggested following the hearing from November 2014. The suggested system for growth that was decided upon was sent to hearing. The TLS was chosen because it provides predictability, with regards to how often, and which criteria's need to be fulfilled for growth. Furthermore the system provides predictability with regards to the consequences when the areas get different "traffic light colors" signaling different environmental statuses (acceptable, moderate, unacceptable) (NFD, 2015,a). These statuses are set from salmon lice pressure, that is either acceptable, moderate, unacceptable. The alternative that was decided upon in Innst 361 S (2014-2015) and these two documents anchored the TLS (NFD, 2017,a).

In the implementation process there were several hearing regarding production areas and flexibility for the farmers, and regulations concerning the capacity adjustment before the final implementation. The Consultation letter about flexibility concerning production areas (sent 15.12.16) (auth.own.trans) The Consultation about different suggestions for changes in connection with implementation of the new system for capacity adjustment in the aquaculture industry (sent 19.05.17) (auth.own.trans) are examples of these shaping the TLS up until it came into force. The implementation of the TLS was done in January 2017, when the Ministry (NFD) established the regulation for production areas. Changes were then also done in the regulation of aquaculture operation as well as in the regulation for allocation of salmon (laksetildelingsforskriften) (NFD, 2017,a). These changes came following a hearing document – Implementation of the Aquaculture paper (2014-2015) that was sent out 24th June 2016. After some changes in the originally set regulations and regulation adjustments, an updated "Regulations for capacity adjustments for licenses for aquaculture with grow out fish in the sea of salmon, trout and rainbow trout in 2017/2018" was established in December 2017 (NFD, 2017,a)One of these changes were related to setting a capacity increase for farmers that would be given an exception from the rule of action (NFD, 2017,a). TLS came into force during the fall in 2017 (NFD, 2017,a).

Science was given an important role by the authorities in shaping the TLS. One of the inputs from the scientific environment was that whatever was to be deciding what was environmentally sustainable, it was recommended that this something should be quantifiable, and this is why salmon lice was chosen as the indicator in the end. The Institute of Marine Reasearch (hereafter the IMR) was asked by NFD to come up with a suggestions to how the coast could be divided ito production areas. (NFD, 2016, p. 6). They were asked as the main scientific organization serving the Ministry, to gather information in order to have an information base to make decisions on when setting up the new system. They played an important role in establishing production zones that would serve the purpose that was to avoid spread of salmon lice between the production areas. They in cooperation with others, developed models. The IMR was to look at spreading of diseases (salmon lice) and established a national current catalogue that was to assist the decision making concerning the production areas. The IMR and other scientific organizations were behind the suggestions for production areas in Norwegian salmon and trout aquaculture (Ådlandsvik, 2015). The report became the academic foundation for the hearing document (NFD, 2016, p. 6). Research had shown that salmon lice would be a good indicator because that the amount of farmed salmon in an area, and the amount salmon lice on both farmed- and wild salmonid populations were strongly connected (NFD, 2015,b) According to the IMR updated risk assessment in 2011 ordered by the Ministry, (where there was a similar conclusion in both the initial and the updated report), the largest threats to environmental sustainability in the aquaculture industry are salmon lice contamination and the effect this has, along with genetic influence on wild salmon due to escaped farmed salmon. Among the topics considered was also emissions (organic materials, from medication and nutrients). Lice was also an increasing problem (Havforskningsinstituttet og Veterinærinstituttet , 2012). With regards to production areas the Aquaculture paper set that the areas should be somewhere between 11-13 production areas, HI suggested 13 (but considered from 8 – 20 areas). The government decided upon 13 areas

3.4 How is the TLS organized?

The TLS is based on a principle recommended by the Gullestad committee. This regulation system for growth is based on a rule of action, as part of a module based system with salmon lice as an environmental indicator. The fact that the system is module based, makes the system flexible, in that more or other indicators (e.a emission, escapees, emissions and genetic influence on wild salmonids as they were indicators being considered) can be added to the system as supplementing indicator(s) if the environmental situation changes. Salmon lice as

an indictator became valid for the whole country, which became, as already described, divided into production areas. Every license is connected to one of the production areas, but with some flexibility with regards to moving between areas. These areas are an essential component of the TLS as this is where the capacity adjustment will occur. Whether the capacity will grow or not will be decided from the salmon lice pressure on the wild salmonid species, primarily wild salmon. In the Aquaculture paper a risk based approach was suggested, and which level to be accepted was part of its hearing. As stated in the White paper 16, in Innst 361 S (2014-2015) and in the request from The Ministry (NFD), mortality levels on wild fish stocks in the future production areas were to be the leading factor for the TLS (Karlsen, Finstad, Ugedal, & Svåsand, 2016, p. 3) The White paper 16 set up a table for the colors of the system where if it was a likelihood of less then 10% of the population will die because of a lice infection (luseinfeksjon) the color will be green in the production area. In the same way from 10-30% would be moderate and yellow and over 30% would mean red or a high risk (Karlsen, Finstad, Ugedal, & Svåsand, 2016, p. 3) In short this means that a green area allows for growth, a yellow area stay on the same production capacity level, and a red area will have to decrease its production capacity. The environmental status in the production areas will be considered every other year, depending on whether the status is acceptable (green), moderate (yellow) unacceptable (red). This is regulated by §8 in the production area regulation. The amount that is set for growth is in the total production capacity is by §13 set to 6% in the production area regulation (Mellbye, Rettslig regulering av norsk akvakultur, 2018). The production capacity will be adjusted back up, if an area changes from red to green in the future. So an adjustment is not permanent, by will change according to the environmental status. Indicators (new, different combination of indicators) can come in the future, as the system is module based. Emissions, as decided in the Innst 361 S, are being worked on as a possible future indicator, alongside, or instead of salmon lice (Næringskomiteen, 2015)

2018 was the fist year adjustment was offered, and the next setting of environmental status for the areas will be the fall in 2019. The next period with offering of capacity adjustment will be in 2020.

In “Advice from the management group for assessment of lice impact - from September 2017” the decision on which area will be which color is stated (NFD, 2017,a). The map under shows these decisions except one area where the Minister of Fisheries Per Sandberg, changed the color in an area he had been representing in Parliament from yellow to green, after his

own considerations, even though the management group had set it to yellow (Regjeringen, 2017).

A conclusion on the chapter may be illustrated by a quote:

"Regarding the question of institutional reform, the crucial question is how to institute a new management regime where future production is dependent on environmental considerations while at the same time presenting predictable growth opportunities to the salmon farmers" (Hersoug, The greening of Norwegian salmon production, 2015, p. 17).

As understood in the chapter above science has been, and is important, but the knowledge is under development, and there are large uncertainties with how the TLS is set up. This as we shall see, has been the source of criticism, and has been, and may still be a threat to both the legitimacy and social sustainability of the TLS.

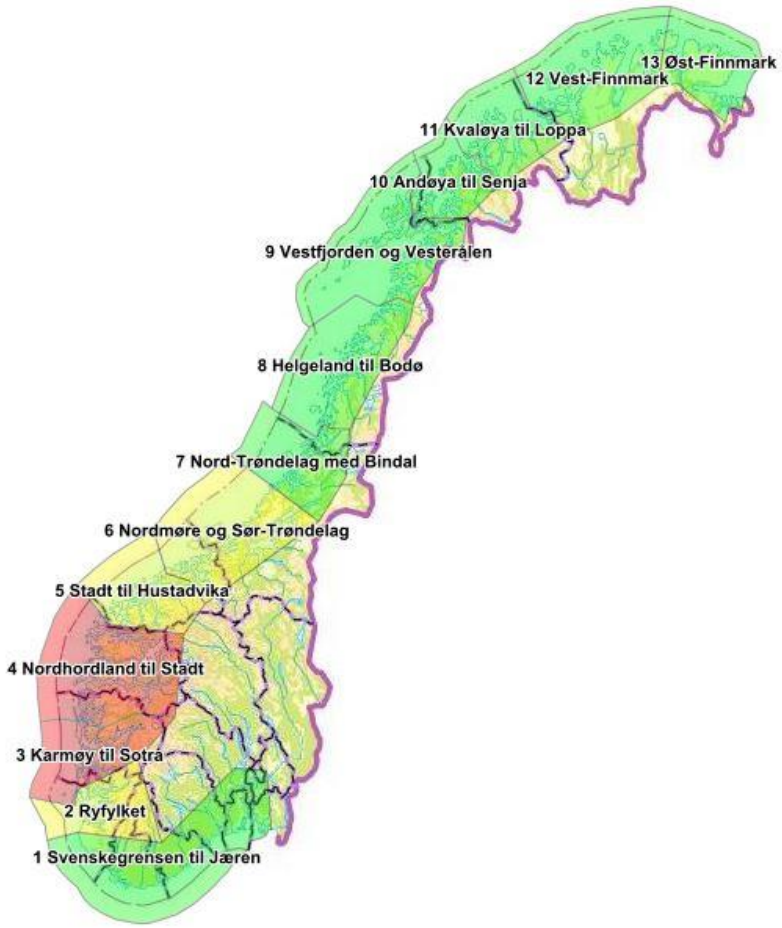


Figure 3: From Directorate of Fisheries home page. The map is developed by Asplan Viak Internet. https://kart.fiskeridir.no/share/5d8a92f44301 accessed 07.02.2019

Chapter 4: Capacity increase independent of environmental status (§12)

This chapter will deal with "the exemption rules" (§12) in the Production Area Regulation and the regulation for Capacity Increase. The chapter will describe the paragraphs and the purpose of the paragraphs.

5.1 Production areas and capacity adjustment regulations

The new system for growth in production capacity is based on production areas with accompanying licenses and is regulated by the Production Area Regulation (Lovdata, 2017,a). As explained earlier in the paper, the environmental impact or status of a production area decide whether the salmon farmers in an area will be able to increase production. Hence, the production area is a management unit for production capacity adjustments (NFD, 2016, p. 8). The growth is organized so that it will be regulated by a rule of action, with an indicator as part of a module based system. For the time being salmon lice has been decided to act as the sole indicator. Dahl questioned whether this is enough to protect the wild salmonids though, and also stated that escapees or genetic impact could well be included (Dahl, 2018). Emissions from aquaculture facilities was asked by the Parliament to be worked more on as a potential future indicator (Næringskomiteen, 2015). The TLS is arranged so that every other year the production areas that are green will be able to increase, at a total maximum of 6% of MAB (Maximum Allowable Biomass) in existing and new licenses in the area. The yellow areas will freeze capacity and the red areas will have to reduce their production capacity. In 2017 the authorities did not adjust the capacity downwards. As will be illustrated through the consultation processes, also the authorities needed this time to adjust the system before it will start operating in all production areas in 2019 (red, yellow and green areas) (NFD,2015,a; NFD, 2016).

Regulations of capacity increase is revised every two years, that is for every round (Næringskomiteen, 2015). The biannual capacity increase shall control how the

environmental situation develops. In addition §12 is in the Capacity Adjustment Regulation (the Salmon Growth Regulation hereafter)((Lovdata, 2017,b). These two regulates capacity adjustments. According to this latter regulation, increased capacity is allocated in accordance with a license's MAB, based on documentation according to criterion on a location. The licenses MAB relate to production areas in that they are situated in such an area and affected by that area's environmental status (NFD, 2016) It is the environmental status, based on surveillance of the salmon lice situation by lice spread models, that is decisive for whether growth can be allowed by the government. They will set the colors of the production area after a scientific and political evaluation between each round (Lovdata, 2017,a). To shortly sum up one can say that the Production Area Regulation is the regulation for the whole TLS in general as well as the regulation establishing the production areas when it came into force. The Salmon Growth Regulation goes more in detail how capacity adjustment will be followed through in the upcoming round. The Salmon Growth Regulation is given authority from the Production Area regulation (Lovdata, 2017,b). It can also be called a specific regulation concerning growth, and it is also the first such regulation meant for the first round (Mellbye, Rettslig regulering av norsk akvakultur, 2018).

5.2 The exemption paragraphs (§12)

Firstly, in the appencies 1 and 2 are the full exemption rules, they may be useful if something in the explaination is unclear. The details are found mainly in those two appendices. §12 is called "Offer concerning capacity increase independent of the environmental status in the production area" (auth.own.trans) (Lovdata, 2017,a) (Lovdata, 2017,b). There are two §12s, with the main §12 in the Production Area regulation gives authority to the second, that bases itself on, and therefore similar to the main §12. The second §12 however concerns each round of adjustment, in the Salmon Growth Regulation. These allow companies in the aquaculture industry before a certain date to apply for an offer to increase production capacity, regardless of environmental status in the production area. It is meant that good companies, who operate within strict limits defined in both §12 may get an exception from reduction (red) or freeze (yellow), and experience growth of up to 6% regardsless of the environmental status of the production area of the licence where the location applied for belongs to. In order to receive this offer the specific criteria must be fulfilled. The paragraph in the Production Area Regulation gives authority, to the paragraph in the Salmon Growth Regulation. The main part in both concerns the salmon lice limits that needs to be fulfilled with regards to female lice

per fish per counting (average), the limit for medical treatment (only allows once during the last production cycle), and the defining of the period within which these demands must be fulfilled. The paragraphs are similar, but much more elaborate in the Production Area Regulation. Here §12 also explains in detail the foundation for how the authorities will calculate the maximum of 6% growth. In short this relates to how much of the actual MAB was used on the location applied for, and that the authorities will consider this when offering growth (Lovdata, 2017,a). The former mentions all the aspects mentioned in the latter regulation's §12 but one difference is that in the Production Area Regulation specifies a deadline, how and to whom the application should be sent, as well as stating the fee that needs to be paid. This can be changed in coming rounds, and fees will not be paid back in case of capacity adjustment. Another difference is that the Production Area Regulation refers to the NMTF (Norwegian Ministry of Trade And Fisheries) and the Salmon Growth Regulation refers to the County as the final handler of the application concerning growth. The Norwegian Food Safety Agency (NFSA) will handled the application according to §12 (Lovdata, 2017,a). §12 in the Salmon Growth Regulation states that a license connected to a location applying can not have a decision regarding a reduction in the MAB from 2016 to 2017 (Lovdata, 2017,b). If the company has locations where it applies for an exemption, §12 in the Production Area Regulation, and §9 in the same regulation means that the companies license(s) this concerns will not be reduced whether or not the company accepts the offer (NFD, 2017,a).

There has been a discussion about the legal grounds of this paragraph, and whether the authorities can actually reduce formerly given capacity in the form of MAB (Nærings- og Fiskeridepartementet, 2019) This chapter will not go into detail about it, but as it concerns the TLS it influences the §12 also.

Growth according to §12 in different areas

When it comes to applying for those from yellow and green areas, they do so in order to have the chance to grow (yellow) or receive an offer for extraordinary growth (green). The logic behind is that production capacity may be frozen in production areas with a yellow color, so if companies applying according to §12, receives an offer, they may grow up to 6% although the rest of the companies in a yellow area get their production capacity frozen. Those companies applying from the green areas may receive an offer of extraordinary growth, as they are offered 2% every second year anyways on their licenses when in a green production area. But

if they apply according to the exemption rule in the Salmon Growth Regulation, they may receive up to 6% in addition to the 2% already offered. The 6% offer on top of the 2% given all , will only be on those licenses where the location(s) applied for are connected to (Nærings-og Fiskeridepartementet, 2017). Any area can only grow up to 6% in total, so after the 2% is given to the green areas, the 6% offer if offered or refused to those actively applying for growth in all areas according to the exemption rule. The remaining growth potential still available will be auctioned away to the highest bidders so that in the end, the industry experiences 6% growth. For those offered growth, the price is 120.000 per ton the license is adjusted upwards with. That is the fee price for this round (Nærings-og Fiskeridepartementet, 2017). In short, according to §12 an offer of growth may be given due to very low salmon lice levels, in accordance with salmon lice levels defined in the Salmon Growth Regulation, during the last full production cycle (Dahl, 2018). According to some, the salmon lice levels are very strict (Mellbye, Rettslig regulering av norsk akvakultur, 2018)

The company applies to the county for an exemption from the limitations applied to the production area as a whole. The application is handled by the NFSA. If the application fulfills the requirements according to §12, it may be offered up to 6% increase in its production capacity for the license applied for at a rate of 120.000 Norwegian kroner per ton the license is increased with (Lovdata, 2017,b). In case the application is declined, complaints are sent to the DOF (Næringskomiteen, 2015). The county estimates growth according to §17 in the Capacity Adjustment Regulation and decides how much increase in capacity an existing license will be offered. If the criteria in §12 are breached in a period where capacity increase had been granted, the license owner will keep the increased production capacity, but loose the opportunity to increase capacity at the next turn. This is to secure predictability for the license owning companies. To qualify for the exemption, a whole production cycle will have to document fulfilling the criteria, Thus, if there has been a breach of the conditions according to §12, the farmer will have to work through a whole production cycle that fulfills the §12 conditions before being eligible again for production increase (NFD, 2017,b).

Objectives of the exemption rules

The background for the exception rules (§12) can found in the Gullestad report and then in the hearing leading up to the Aquaculture Paper (FKD, 2011, pp. 167-168; NFD, 2015,b). In Aquaculture Paper it is stated that it is going to open for exceptions to the action rule, when it can be documented that a company's operation on a location does not contribute to reducing

the environmental status in a production area (NFD, 2015,a; Næringskomiteen, 2015, p. 11). A challenge with the introduced capacity regulating regime is that it regulates all companies in an area, also those operating within limits that does not affect the environmental situation negatively. Hence, the Parliament's Committee for Trade and Industry claimed that an exemption arrangement with strict requirements and individual procedure, would contribute to environmentally sustainable development of the industry (Næringskomiteen, 2015). They argued that exemptions should be given to those contributing substantially to reducing the salmon lice problem, independent of production area status. Another important aspect was that the criteria of the exemption rules should be as objective as possible, to keep management costs and conflicts to a minimum (Næringskomiteen, 2015, p. 11). The Parliament's Committee for Trade and Industry believed that if the exemption rules were not strict and objective the costs connected to handling would be too large and therefore wanted to keep the rules, and their criteria strict (Næringskomiteen, 2015, p. 11) Yet other goals were to reduce the use of medication in aquaculture, as well as avoiding *collective punishment*, and conflict due to unfair treatment.

What did the consultations processes reveal with regards to §12?

An important reason for §12 is collective punishment and the fact that this was brought up in the consultation process answers shows this. Three consultation processes following the Aquaculture Paper were of importance, and the exemption rules and how they were designed before the final regulations. These concerned 1) the implementation of the Aquaculture Paper, 2) the changes in conjunction with the implementation of a new system for capacity adjustment in the aquaculture industry, and 3) reduction in production capacity.

The NSL claimed that they doubted the foundation which the authorities would use to adjust capacity (impact on wild fish with an indicator based on a large degree of uncertainty) (NSL, 2015; NSL, 2016). They questioned if it was legal. And most importantly they opposed that the system being suggested implemented would have collective punishment as an integrated part of an result of it (NSL, 2016). Seafood Norway claimed an exception rule would not be sufficient in order to avoid collective punishment. As a result, exemption paragraphs have been added to both the Production Area Regulation and the Capacity Adjustment Regulation. The NSL stated in the consultation process following the Aquaculture paper that they wanted the limits of the exemption rules to be achievable for the companies that were operating well, and hence encouraging good companies (NSL, 2016). A general comment on the suggested

limits were that they were too strict. The NSL as well as Seafood Norway stated this, and this was connected to collective punishment mentioned earlier, the way the originally were suggested. Seafood Norway opposed the collective responsibility, and wanted administrative decisions rather than a general collective regulation in case of reduction (NSL, 2016; Sjømat Norge, 2016). Seafood Norway wanted an individual administrative procedure, rather than the company making it such by applying for an exception (Sjømat Norge, 2016).

Three important interest groups, The Federation of Norwegian Industries (Norsk Industri), the Norwegian Seafood Companies National Federation (Tidl. Norske Sjømatbedrifters Landsforening, nå Sjømatbedriftene) and Seafood Norway (Sjømat Norge) doubted at first the whole systems knowledge base, and therefore also the exemption rules base. It is worth mentioning that they sent in a joint reply to the hearing, in addition to individual answers. They claimed the capacity adjustment could only be based on a fully developed system, and since that was not the case, they wanted the consultation process postponed, and a further development of systems knowledge foundation in closer cooperation with the industry and research (Sjømat Norge / Norsk Industri / Norske Sjømatbedrifters Landsforening, 2016). Seafood Norway found §12 too strict in comparison with the Salmon Lice Regulation (Sjømat Norge, 2016).

The Production Area Regulation was entered into force in the start of 2017. At the same time it was stated that further changes in the exemption rule were going to be necessary (NFD, 2017,a)

In May 2017 a new consultation process started. The claim from the companies that the demands were to strict as it was set to 0,1 mature female salmon lice showed itself persistent. The NSL claimed they were so strict that few would be able to fulfill the criteria, so therefore §12 was not in reality an existing option, as it was suggested to be at first, before they had set the criteria (Norske Sjømatbedrifters Landsforening, 2017). This third consultation process with importance for §12's shape was the consultation process with the draft for regulation concerning capacity increase for licenses for aquaculture with grow out fish in the sea of salmon, trout and rainbow trout in 2017/2018. It concerned an increase in capacity for existing licenses, and it is worth mentioning that for allocating new licenses, there was a parallel process that will not be dealt with any further. With regards to §12, this consultation process suggested offering 6% increase to companies qualifying according to the rules, no matter the environmental status in the production area. Furthermore the ministry suggested

24 000 tons to be offered, and that the amount not being offered through green area offer, and the exception rule, be auctioned away (NFD, 2017,c)

This consultation process contributed to a specification and further elaboration of §12 in the Production Area Regulation by deciding the capacity increase for those companies getting an excemption. This meant a) that the NMTF, after having challenged the NVI (Norwegian Veterinary Institute) to give assistance, decided to include elements (0,17 once) in order to a larger extent avoid disqualifying companies that would qualify, because of the way of counting salmon lice and, b) specified the period for qualification to be 12 months and including a whole production cycle with both larger and small fish and, c) adding a more individual adapted method for calculating growth in order to avoid companies circumventing the exemption rule, by using production (rather than license or location) as a measure for growth. This because in the case where it was license or location as a measure, and a company had not used all the biomass in the location applied for, they could use it on a different location connected to a different license where the demands were not fulfilled due to not 100% use of MAB on the location and license originally receiving the exemption and growth. The DoF will adjust the growth, according to how much of the MAB is used by the company on the location, if it is not fully used (NFD, 2017,a). In the consultation process the authorities suggested changes that would facilitate different production methods, and so be flexible. When it came to the exemption arrangement it would be made own rules for 2017 according to the suggestion. In the consultation process the authorities particularly ask for feedback regarding the suggested changes in §12 in the regulation (NFD, 2017,a).

Also the consultation process that was initiated in February 2017 showed that some of the attitudes were similar to those in the earlier hearings. Sjømat Norge claimed that some demands had been met to a certain degree but that the trust in the system was still under doubt, with regards to the knowledge base.

Why were the consultation processes important?

These were important in that they questioned the legitimacy of the whole system (with regards to the lacking knowledge base, and the prematurity of the models that were to be used. These were still being tested (NFD, 2016). The §12 originally suggested was not sufficient for the industry to accept. The consultation processes show the process of adjusting the §12 an that it turned out different than from the start. The authorities to a certain degree

listened, attempted to be more flexible and to mitigate the concern about reducing the chance of counting mistakes in the set up. NSL claimed in the consultation process that led up to the Aquaculture paper that they wanted for the red area, that those operating well should have their capacity frozen. Then the authorities should take measures towards those operating in a way that affected the environment in a way that was not good enough. They thereby suggested the authorities to lower the production of those operating badly, and in this manner correct the area back to a sustainable way of operation, to make the area green. Then the legal challenges would be avoided in their point of view (NSL, 2015).

These consultation processes revealed criticism from several actors concerning the system (TLS). It showed that the scientific foundation was very uncertain. Seafood Norway was specific regarding counting mistakes (Sjømat Norge, 2016). Collective punishment was a major issue leading up to the exemption rule. The juridical foundation has also been criticized with regards to the collective punishment (wanted individual administrative decision instead of general regulation decision that affected both those operating within and outside the regulatory framework).

The authorities have met the critics to a certain extent in that the exemption rule has been adjusted. A recent consultation process was initiated in February 2019 can help illustrate how the debate has been. This process has, among other aspects, specified §9 in the Aquaculture act. The paragraph a) in §9 has been suggested specified as part of a larger change to make sure the authorities have better legal coverage in case there will be challenges related to reduction of capacity. As stated in the consultation document "Hearing-suggestion for change in the aquaculture law" (auth.own.trans) the main point is to clarify the foundation for authority to reduce capacity. It is clear in the consultation process that in different settings and from different actors from the industry it has been claimed that the there will be lawsuits, if the capacity will be reduced as stated in 2019 (Nærings- og Fiskeridepartmentet, 2019,a) (NFD, 2019,b). Some of the consultation processes and settings referred to are earlier ones. This can be seen as a back drop for the §12, and the major discussion leading up to establishing §12 in that one wanted to avoid collective punishment, as well as that the legal foundation was insufficient.

An important result after feedback from the consultation processes was a measure to make sure mistakes in counting would not disqualify good farmers within the criteria from growing. This was the second paragraph in §12 in the Production Area Regulation stating that one

could have one counting of 0,17 (0,1 set as the maximum limit). This was done after pressure from the unions for the seafood industry during the consultation process. (Høringssvar fra Sjømat Norge, 2017).

Paragraph 12 has been amended throughout a number of consultation processes and the final §12 is more elaborate and more complicated than the original suggestion. In short, the rule came as a result of the industry being critical to the suggested system and that it would lead to collective punishment, as good farmers could punished on equal terms as bad farmers. Hence, an exception rule was needed to create support for the TLS.

It has been argued that grounds for reducing production capacity lacks authority with regards to §9 in the aquaculture act that claims "The Ministry can change and withdraw the aquaculture license: a) if this is necessary from a consideration for the environment" (Lovdata, 2015)(auth.own.trans). Sjømat Norge has questioned the authority, legally, to reduce capacity (Sjømat Norge, 2016,; Høringssvar fra Sjømat Norge, 2017).

It has also been questioned whether individual administrative decisions should be made, instead of decisions through regulation. Moreover, it has been argued that the process of establishing a new system should be a democratic process (FKD, 2013). Thus, the question is whether the companies are being treated according to their legal rights (NFD, 2016).

In sum, the industry argues that the salmon lice limits are very strict and hard to accomplish for the farmers. They also doubt the maturity of the models, and the knowledge base the system is founded on. The authority of the regulations and the preference of individual administrative decisions, rather than a regulatory decision, is also argued for from an industry point of view. This last consultation process concerned reduction. It was a haste consultation process that was criticized for its short deadline (Sjømatbedriftene, 2019). The suggestions were not accepted by the industry. The complaints were not changed. After all the consultation processes one can conclude with that in this first round what has been decided has been enforced quite strictly, and what was meant to be treated objectively, and give exception has led to a strict objective regime. The companies wanted the strict rules. It seems that collective punishment through collective responsibility was the problem that could arise if good companies became punished for that there were bad companies in the same area , meaning that they operated in a way that had a negative impact on the environmental situation The §12 was to be the solution to this. But did it solve the problem**?** The problem was

connected to those not contributing to the environmental challenge, and the risk of punishing them (NSL, 2015).

Conclusion

As a conclusion the exemption arrangement was supposed to be an attempt to adapt, and to make sure those operating well were not punished for what others did wrong/not sufficiently well with regards to how they operated. The companies have been critical to how reduction of capacity should be done, and questioning the need for a rule where they need to apply to not have their production capacity collectively reduced without the legal rights connected to individual administrative decisions. When considering the last hearing, it seems that they are not satisfied with the process. This can be further exemplified with the critics regarding only a three week response deadline on the consultation process without giving a reason for the short response time. This means they break the act on public administration. How is the legitimacy for this system, and the acceptance of the way the process has been?

Chapter 5 : Results

5.1 The need for the exemption rules §12

It is useful now to recap why there was a need for the exemption rules. They were described in a previous chapter, this section will describe why there was a need for the exemption rule. One of the main objections by industry actors towards the TLS was the sense of collective punishment. A comment from one of the informants may be used to illustrate this point: "[…] a collective punishment, in that everyone needs to reduce production no matter how good they are […] We do not trust them (those behind the system) (Farmer 3, phone interview, April 9, 2019). Another farmers quote may be used to further elaborate the need:

> *The exemption arrangement is a nice safety valve.* Because if one is in a production area with many "bad neighbors", but is operating well, then the exemption arrangement is a safety valve that contributes to legitimizing the TLS. *The exemption arrangement contributes to mend some on the weaknesses with the TLS,* because one

can nuance the situation inside a production area" (Farmer 1, phone interview, April 5, 2019).

Hence, a TLS without the exemption rule, could lead to a situation whereby within a production area had to reduce their production (red areas), no matter how well the individual farm was operationg in terms of lice and environmental effects.

The possibility of this situation has been part of the criticism against the new TLS, and the exemption rule itself has been part of the debate (Sjømat Norge, 2016) (NSL, 2016).

In the Aquaculture paper, it was stated that one would allow for an exemption rule to the action rule in the TLS. This would be in a situation if and where a farmer could prove that the way this farmer was operating was not causing the situation, environmentally, that lead to having to decrease the production capacity in the area this farmer was operating in (NFD, 2015,a). The Parliament's Committee for Trade and Industry supported the suggestion from the Aquaculture paper that the authorities should have the opportunity to make individual administrative decisions for exemptions when the precondition just described was fulfilled (Næringskomiteen, 2015, p. 11). This arrangement would involve allowing for making an individual administrative decision, and from the farmers interest organizations this had been part of the criticism about the TLS, not opening for this but rather reducing the production capacity for everyone in a production area. This created a need for a rule that did not punish collectively. The challenged was in that the TLS, without an exemption rule, would not have separated between those operating in a way that created the need to reduce, and those potentially not doing so, and potentially thereby punish someone that was not even the cause of the problem. Therefore, we could say that the exemption rules to the action rule might have been instigated in order for the system to have enough support among the stakeholders to be have the chance to be implemented (NFD, 2016).

The need for an exception can be reflected in the discourse about the rules during the consultation processes, with the most important one being the consultation process regarding implementation of the Aquaculture Paper. The NSL (The Norwegian Seafood Companies Union) referred to the steering committee's conclusions about uncertainty and were doubting the whole validity of the TLS. They also criticized the uncertainty concerning the foundation being used to reduce capacity, in that they were asking questions concerning the legitimacy of a decision of reducing production capacity already given to the farmers, - which could lower the MAB down to 94%. In the consultation process where the system and the exemption

arrangement were discussed, it became clear that the suggested system would result in collective punishment, and it was suggested that such a system should be avoided NSL, 2016; NFD, 2019,b).

The intention was that an exemption arrangement should create a fair, strict and trustworthy practice of the arrangement as seen from both those inside and outside, from those involved in the industry and those managing it. The intention was to not undermine the TLS with regards to how it was based on production area regulation. The exemption arrangement should be based on objective criteria that were also administratively efficient to follow through and it was supposed to be neutral with regards to the technology used by those operating (NFD, 2016). These intentions were created in order to include all operators and to give all the opportunity to apply for the exemption growth. The consultation processes after the Aquaculture paper referred to in Chapter 4 shows that all areas were also included eventually, which meant that applicants from the yellow and green areas were welcomed. There are as already seen two rules that are quite similar. Why this is so may be illustrated with a quote from the interview of the Directorate of Fisheries when shaping the regulations claimed "Us in the Directorate of Fisheries in cooperation with the Norwegian Food Security Agency believed that the exemption rule in the Production Area Regulation and in the Capacity Adjustment Regulation had to be more or less identical. Otherwise, they would be too unpredictable for the farmers" (Person from DOF, phone interview, April 10, 2019). The NFSA has the responsibility for the Food and the Animal Welfare Act (Hersoug, The greening of Norwegian salmon production, 2015, pp. 7-8). They are also the ones handling the applications concerning exemption growth. Predictability has been a goal all along with the new system, and also for the exemption rules (NFD, 2015,a).

The exemption arrangement, along with the TLS, has been much debated. Individual handling of companies and collective punishment are key issues (NFD, 2015,b, p. 31) (Mellbye, www.fiskejuss.no, 2016). Establishing the TLS was suggested and decided to be a process of regulation, based on consultations and democratic processes (FKD, 2013). An important criticism concerning the TLS has been the collective responsibility connected to the color setting and reduction of production capacity in a production area. This collective responsibility concerns both the possibility for an area to grow, to reduce its production, or for the production capacity to be frozen (Hersoug, Mikkelsen, & Karlsen, "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming, 2019). Criticism has come from many sides, including the industry, an environmental organization and the

management (NFD, 2015,b, p. 31). The early criticism was mentioned already as the exemption arrangement was suggested and the rules came to avoid the collective punishment (NFD, 2015,b, p. 57). "*The point of the exemption rules is to maintain the foundation for the new system, namely that it is the aquaculture industry's influence on the outer environment that shall decide the production capacity"* (NFD, 2017,b, p. 10) (auth.own.trans). The exemption rule may potentially be said to supply the principles mentioned earlier to the TLS, although it is an exemption rule to the action rule.

5.2 How does the exemption rules §12 work in practice

"The exemption arrangement shall contribute to stimulate further environmentally friendly operating" (NFD, 2016, p. 44) (auth.own.trans). [2]

Did it have this effect in the first application round? In case it did not, what effect did it have? When considering how the exemption arrangement works in practice one farmer claimed they applied to avoid a reduction in production capacity (Farmer 3, phone interview, April 9, 2019). The document analysis of the application answers in the first round from the NFSA to the farmers showed what those being interviewed also all claimed, that the rules have been interpreted strictly (Mattilsynet, 2018,a)(Farmer 1,phone interview, April 5, 2019 ;Farmer 2, phone interview, April 5, 2019; Farmer 3, phone interview, April 9, 2019). This may to an extent show the rule seems to work accordance to the intention of the authorities regarding objectivity when they state that it is supposed to be an objective arrangement that does not lead to much resource use when handling individual administrative decisions. This view was expressed in a consultation document after the Aquaculture Paper (NFD, 2016). The NFSA confirmed this in the interview stating that it had been: "Much less work this year than last year. I would guess that an application handling takes from 4-15 hours, and is gone through by a lawyer and a specialist advisor" (Person from the NFSA, phone interview, April 9, 2019). When going through the application answers from the NFSA, they show that the NFSA has been firmly handling all the applications and criteria in an objective manner, not allowing much room for discretion (Mattilsynet, 2018,a). The NFSA states that their interpretation is strict, as the demand for an exemption according to the capacity adjustment regulation was very specific and that there therefore was less need to use a discretional consideration to decide if the applicant fulfill the criteria or not (Person from the NFSA,

[2] Environmentally friendly in the §12 refers mainly criteria about less lice production and spreading and the lessening in use of medical treatment in the industry (NFD, 2016, p. 44)

email, April 25, 2019). It has not been sufficient to be close to fulfilling almost all criteria, and also all criteria had to be fulfilled. The answers from the NFSA have been considered one by one, and as a separate unit. All of the criteria have had to be fulfilled in order to get the chance to be offered to buy exemption growth. No weighting of the different criteria seems to have been made during the process. Handling has demanded to be within the set parameters and not interpretation if certain criteria was close, or in combination with other criteria. In one case only once over 0,17 in the periods being considered got refusal with regards to lice numbers (Mattilsynet, 2018,a). Also when using medical treatment on part of a location once, and another half at the same location at a different time has been interpreted by the NFSA as two treatments (Mattilsynet, 2018,a). So for those applying when looking at medical treatment the interpretations were strict, and furthermore the counting of lice. The understanding of what makes a full production cycle was strict as well, going back in time to find the history of a full cycle in order to get a full production cycle picture (Mattilsynet, 2018,a). The handling with no discretion becomes confirmed after interviewing the NFSA and understanding that on the complaints, which the NFSA headquarters are handling, no decisions made in the first instance, were changed during the complaining process (Person from the NFSA, phone interview, April 9, 2019). What the application answers also show when all areas are considered together, and that the NFSA confirms in the interview, is that of those applying that got a refusal, there have been applicants that have fallen outside the exemption arrangement in that they have not been not being qualified due to e.a lack of documentation or a newly started production cycle. This has been a challenging thing according to the NFSA in the interview that so many applied based on production cycles just having started, something that made them fall outside the exemption arrangement and a reason they got a refusal (Person from the NFSA, phone interview, April 9, 2019). It is also interesting to see that only 12 locations got their applications accepted out of 1015 grow out locations in total in 2018 (FD, 2019).

5.3 How is the practice of the exemption rules in this first round perceived by the stakeholders.

Experiences with the exemption rules

So far, there has been one round of applying for capacity increase according to §12, after the TLS was introduced in the fall of 2017. The result was 56 applications for 43 locations, of which 12 locations fulfilled the criteria in the exception rules. Those not fulfilling the

requirements in §12 were rejected. The 56 applications were from red, yellow as well as green areas, but only one applicant from red area and only one from the yellow area was offered production increase. The NFSA received 17 complaints, but did not overturn any of the initial decisions (Mattilsynet, 2018,a) (Mattilsynet, 2018,b). According to Mellbye these are individual administrative decisions (Mellbye, Rettslig regulering av norsk akvakultur, 2018, p. 119). After this first round, it shows that there is a strict regulation regarding the exemption rule, and did not involve many locations, or companies in the first round (Mattilsynet, 2018,a). When asked about the exemption rule the NFSA stated that it is "A benefit for those that are situated on locations that are beneficial" (Person from the NFSA, phone interview, April 9, 2019).

From the result of the document analysis of the consultation processes is may be observed that the exemption rule was heavily debated, especially among industry stakeholders. One argument from industry was that there is a great uncertainty regarding the research and the models the system is founded upon and thereby also the foundation for the criteria set in the TLS and the exemption rules. Furthermore, the industry was questioning whether the system (TLS) was ready for implementation and suggested a timeframe for implementation, due to the lack of sufficient scientific knowledge and uncertainty regarding the models suggested. It has also been argued that the exemption rules are not sufficient to avoid collective punishment, as those operating well would not experience growth and might risk a demand to reduce, and thereby punishing those operating well in areas that must reduce the production capacity. Moreover, requirements were seen to be too strict, and therefore collective punishment becomes the consequence (Sjømat Norge, 2016; Norske Sjømatbedrifters Landsforening, 2017).

So how has this first round been from the viewpoint of the stakeholders? A result from interviewing is that it will take more time to see whether the exemption rule works according to its intention. That is whether it is leading to less use of medicine through medical treatments and fewer lice. This however relies on the counting and that the numbers may be trusted. However, when it comes to fish welfare it seems to lead to *decreased fish welfare.* This is an interesting, and perhaps not unexpected effect of the exemption arrangement. From the farmers side (Farmer 2, phone interview, April 5, 2019; Farmer 3, phone interview, April 9, 2019) and the NFSA states that decreased fish welfare is an issue that has come as a result of the exemption arrangement so far. Four of five that was interviewed that it works in favor

of use of more mechanical treatments (Farmer 1,phone interview, April 5, 2019 ;Farmer 2, phone interview, April 5, 2019; Farmer 3, phone interview, April 9, 2019 ; Person from the NFSA, phone interview, April 9, 2019). These treatments are causing losses due to killing or result in stress that may cause diseases after the treatment is finished according to one farmer (Farmer 3, phone interview, April 9, 2019) One farmer stated " (The exemption rule) […] unfortunately leads to increased mechanical treatment that is bad, when it comes to fish welfare because it kills most fish. They put too much focus on the environmental consequences of the treatment, and not on fish welfare […] All chemical treatments are treated equally" (Farmer 2, phone interview, April 5, 2019). In addition one farmer also claims that cleaner fish may be substituted as a lice method for mechanical treatment in the future to qualify (Farmer 3, phone interview, April 9, 2019). To the increased mechanical treatment the NFSA states "[..,] it affects the fish welfare and results in increased fish mortality, a fact that is perceived as challenging from the NFSA's side. The lice regulation does not go before the act on animal welfare. This the farmer him-/herself must ensure to balance in cooperation with the fish health service" (Person from the NFSA, phone interview, April 9, 2019).

In other aspects it seems the farmers *believe* that the exemption rules works according to their intentions. When considering that they are to contribute to less lice and medical treatments through better environmental operations, one farmer claims that it stimulates the use of technology: "From where the farmers are standing they (the authorities) reward well those that are good […] One gets incentive to operate better […] " (Farmer 1, phone interview, April 5, 2019). Another further confirms that it works when stating: "The arrangements, especially the exemption rule, demands and encourages to use new technology, this goes for both de-licing and semi-closed facility […] One need to be good at lice for the exemption arrangement. One gets technology development, so it works according to its intention" (Farmer 2, phone interview, April 5, 2019). However, the same farmer also had some reservations whether if the best farmers really would be rewarded, as the farmer was suspecting that the counting arrangement of the TLS and the exemption rule opens up for those who want to count speculatively could do so, whilst […] those that follow the system, may be punished» (Farmer 2, phone interview, April 5, 2019). This illustrates that the opinions if it works according to all the intentions are divided, and it is not possible to claim whether the exemption rules, or the TLS will actually lead to less lice, in order to see the results of this, more time is needed, and 12 locations are potentially not affecting much when

the large picture is taken into consideration (Styringsgruppen for vurdering av lusepåvirkning, 2017).

Strict criteria, lack of discretionality but objective treatment:

When questioned why they applied, the farmers gave the impression that *avoiding reduction* in production capacity was a key reason. This was just as important as growth itself., so it seems the exemption arrangement may be used for this in the future. Another common feedback from those interviewed, both from the authorities and the farmers is that the criteria, that has been intended to be strict, has been perceived by all as being that. They referred to limits for *lice, interpretation on what is one medical treatment and also the understanding of what makes a production cycle in the first round.* Comments were also made about the second round with regards to the authorities using a production year two years in a row and that this had a retroactive effect. Not all farmers commented on all of these aspects. But the strict handling of the criteria was commented by all the farmers interviewed and that they did not use discretion was commented 4 of the 5 being interviewed (including all farmers interviewed). The farmers perceived the NFSA as being strict when handling, both regarding the understanding of what was one treatment of medicine (use of medicine) and with regards to lice numbers (Farmer 1, phone interview, April 5, 2019; Farmer 3, phone interview, April 9, 2019). In addition, the understanding of what consists a whole production cycle was seen as strictly handled according to one farmer (Farmer 3, phone interview, April 9, 2019). The results show different opinions on this matter so how this may affect the process legitimacy, is not obvious. One farmer claims "The trust is not so great when the NFSA interpreted the rules so rigidly […]" (Farmer 3, phone interview, April 9, 2019). The same farmer also stated that "The NFSA does not manage to see the good entirety" (Farmer 3, phone interview, April 9, 2019). The rigid interpretation of the criteria has results that show different opinions. One farmer commented that:

> *"That we are being measured by production backwards in time, when nobody knew the rules is unreasonable" (Farmer 3, phone interview, April 9, 2019). Yet, the views are mixed. When commenting how the process has been, one farmer claims "We got a fair treatment" (Farmer 2, phone interview, April 5, 2019).*

Furthermore, regarding the application process the same farmer claimed:

> *"As predicted, predictable. We are not disappointed. […] We got an increased respect for the management. The NFSA treated this mathematically and there was no discretion.*

And we agree that is must be like this, when the criteria are made this way" (Farmer 2, phone interview, April 5, 2019).

What these may show is that the level of objectivity with the handling of the exemption rules is the first round is high, and so potentially according to this intention with the new system. When asking the NFSA about the view on first round handling and reactions they stated that "We have not received signals that the Ministry has commented or criticized, and that we therefore have handled after the intention with the exemption arrangement" (Person from the NFSA, phone interview, April 9, 2019).

This *perceived lack of discretional handling* of the exemption rule's criteria in the capacity adjustment regulation was conveyed by some of the interviewed farmers as well as the NFSA and the DOF. It seems therefore, in accordance with the documents from the NFSA that there were *no use of discretion* in the handling of the applications (Mattilsynet, 2018,a; Farmer 1,phone interview, April 5, 2019 ;Farmer 2, phone interview, April 5, 2019; Farmer 3, phone interview, April 9, 2019; Person from the NFSA, phone interview, April 9, 2019).

The knowledge foundation is still being questioned

When challenged about the exemption rules the discussion shifted to the foundation of the TLS and a lack of trust in the science the system is based upon, the methods being used, the uncertainties of these as well as uncertainty concerning the counting. Lice as an indicator also became a topic, and uncertainty was mentioned with regards lice as an indicator as well. As shown in the Chapter 4 about the exemption rules the farmers' interest organizations doubted the TLS and the scientific basis on which it rests. More specifically, the farmers criticized the time of counting and the methods for counting on wild fish, and that lice was not the only reason for wild fish mortality (Farmer 1,phone interview, April 5, 2019 ;Farmer 2, phone interview, April 5, 2019; Farmer 3, phone interview, April 9, 2019). There were several and quite clear comments from the interviews may show that they are still doubting some of the scientific basis and methods used. One farmer interviewed claimed "[…] it should not have been so that one became hit by random statistical variation. The counting method is not suitable**.** It is completely random" (Farmer 2, phone interview, April 5, 2019). There is also lack of trust connected to lice as a single indicator, and its importance, and therefore whether the indicator actually works with regards to the end result. How then may they then accept the §12' ? One farmer stated in this context that "[…] Lice is one of the smaller reasons, but it may affect (death on smolt wandering to the sea)" (Farmer 2, phone interview, April 5, 2019).

Another farmer claimed that "One is building the management of a whole industry om a contested foundation with large error sources" (Farmer 1, phone interview, April 5, 2019). This doubt in the method for the TLS is confirmed by all farmers, which may show that they also doubt the method the exemption rule is based upon. So there seem to be split signals from the farmers with regards to whether discretion is positive or negative in the context of the exemption rules, amongst other reasons due to this distrust in the scientific and counting methods. The farmers doubt their effect on the end result. This may certainly affect the legitimacy.

With regards to the criticism in the consultation processes both with regards to the TLS and the exemption rule, this result does not come as a surprise. After having read the documents from stakeholders in the consultation processes concerning the exemption rule, those dealing with the Aquaculture Paper stakeholders show similar views.[3] Three stakeholder groups together claimed a similar view doubting the knowledge foundation of the TLS in that the model being used was not understood as being suitable at the time being, and should be further developed in cooperation with the industry and research. They also suggested postponing the consultation process (NSL, 2016). Seafood Norway, being one of these three, sent in an independent answer, as did the NSL in addition to them sending a common answer with a third organization Norsk Industri. Seafood Norway were against the whole system, and claimed that it would not contribute to securing predictability for the farmers in the political discretion in setting colors to areas. They commented that the exemption rule would lead to collective punishment in that it might reduce the production capacity of good farmers in an area set to reduce. In addition the strictness of the suggested criteria was commented on (Sjømat Norge, 2016). With regards to those being interviewed, most spoke about the TLS, in a predominantly critical way, but also showing understanding that the system was new. "TLS and the Statutes for the exemption rules has been a start on a management system, and that is not something we want to criticize. But if it is to work in the future, we need to get more information about the final result and final effects in the different areas" (Farmer 2, phone interview, April 5, 2019). It is important to note here that the TLS was seen as being a start. It seemed like the exemption arrangement was described in a better way than the TLS, and that without the exemption arrangement, according to one farmer, the TLS would have had less support: "[…] It is absolutely necessary that a system that treats everyone the same has

[3] . Doubting the TLS due to uncertainties with lice as an indicator, the foundation used by the authorities to reduce, and the legal foundation and legitimacy if reducing capacity.

exemption rules. Without this the TLS would have had less support" (Farmer 1, phone interview, April 5, 2019). Another claims "The exemption arrangement is fair […] It is more specific, and gives a better accuracy than the TLS" (Farmer 2, phone interview, April 5, 2019).

Claims there are faults in counting

Point 7.1.4 in the consultation document concerning implementation of the White Paper 16 states "In order for the arrangement to be trustworthy other actors, the management and other interested parties have trust to the fact that the criteria to receive an exemption from the action rule actually are fulfilled" (NFD, 2016, p. 45; NFD, 2016). One comment from a farmer shows doubt about the likelihood of prioritizing those who will operate and who will actually fulfill the criteria:

> *"[…] The statistical uncertainty in the number one get with the mandatory counting regime are not necessary trustworthy numbers and may be taken advantage of and affected by those that count. […] The exemption rule works better than the TLS. It is only the mathematics that does so that it may be a bit unfair because one counting may destroy values worth millions. Counting tacticians may win due to this" (Farmer 2, phone interview, April 5, 2019).*

The same farmer doubts the effect statistically and biologically, but not management wise (Farmer 2, phone interview, April 5, 2019) This may materialize itself in a larger trust then, in the exemption rule than in the TLS.

Communication between the industry and the management

When the farmers and the authorities were challenged on the experiences with the first round of the exemption arrangement the treatment of applications and complaints received varying feedback According to Jentoft and Mikalsen the quality and possibilities of the communication affects a systems process legitimacy (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 28). More so with regards to the time used in handling in comparison to other aspects of their work. The feedback could affect the legitimacy negatively when taking into consideration what one farmer stated: "The NFSA uses different wording in their application form than in the regulation. This has created interpretation mistakes that we have had to clarify with regards to content" (Farmer 1, phone interview, April 5, 2019). The same farmer claimed that, despite this, the overall

communication was good and that the answers from the NFSA was quicker in the 2017 (2018) exemption application round than when communication with the NFSA concerning other issues. A second farmer claimed that this round was a "Straightforward application process. Good instructors." (Farmer 2, phone interview, April 5, 2019). So when it comes to communication it shows that there are improvements although the support was good.

One weakness of this study is that seeing the differences between yellow and red areas, and potentially comparing them has not been possible. Therefore, these differences does not show in the results. This may have been solved by including more companies, and not just among those that those that applied in the 2017 (2018) application round. This was a result of several things: mainly too few sources to conclude about it, and also the timeframe and methods chosen. If this could be undertaken in the future, it might give a better understanding of the §12's effect on the legitimacy of the TLS and consider the social sustainability of the TLS.

Chapter 6 Discussion

6.1 How does the exemption rules affect the legitimacy of the TLS

"The *point* of the exemption rules is *to maintain the foundation for the new system*, namely that it is the aquaculture industry's *influence on the outer environment* that shall *decide the production capacity*" (NFD, 2017,b, p. 10) (auth.own.trans). This maintaining of the foundation alongside more environmental operation with regards to lice, and giving the opportunity to encourage the best operators to apply for 6% growth rather than 6% decrease is why the rules came (NFD, 2017,b). This may be seen as providing the TLS with legitimacy. Due to the consultation process the TLS contains procedure legitimacy (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 35). The farmers claimed they were not heard, but the organizations representing the farmers were participating in the consultation process (Sjømat Norge / Norsk Industri / Norske Sjømatbedrifters Landsforening, 2016); (Sjømat Norge, 2016). The exemption rule was discussed during the process and the changes in the rule as shown in the chapter about the exemption rules, came after a consultation process with several consultation rounds (NFD, 2017,a; NFD, 2017,b). What may be said to be examples of mitigating critique may be that exemption growth were given no matter which color the area had, the 0,17 criteria and extra paragraph in order to avoid miscounting, and allowing one medical treatment were attempts to meet the industry in their demands NFD, 2017,b; NFD, 2017,c) The resistance towards the TLS was strong, and this is

mainly related to its content legitimacy, as it was the foundation of the system that was doubted and which consequences it would have for the farmers that was mostly protested, along with the collective punishment as commented earlier (NSL, 2015; Sjømat Norge/Norsk Industri/Norske Sjømatbedrifters Landsforening; Sjømat Norge, 2016). The attitudes against the TLS were persistent and lasting (Norske Sjømatbedrifters Landsforening, 2017). There are signals from the farmers about not being included in the process, and this will affect the procedure legitimacy negatively. However, the formal procedure possibility strengthens the procedure legitimacy, but not as much as if the involvement was actual. The system contains a degree of procedure legitimacy (Jentoft, Hengende snøre - Fiskerikrisen og framtiden på kysten, 1991).

		System contains content legitimacy?	
		Yes	No
System contains procedure legitimacy?	Yes	1: With §12	2: Without §12
	No		

Figure X: The legitimacy of the TLS (Showing both with the §12 and without the §12)
Source: (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 34).

The figure from the theory chapter is used in order to illustrate the TLS with and without the §12. The figure demonstrates that §12 is providing the TLS with at least content legitimacy(although there is a more nuanced discussion given in the results). The TLS contains procedure legitimacy through the consultation processes, although the answers from the farmers reveal that this could have been better, if it was less formal. But since the industry has viewed such strong opinions through the consultation process, a strictly handled exemption arrangement may compensate for the lack content legitimacy, by supplying this through the predictable and objective handling by the NFSA. The §12 avoids collective punishment and guaranteed decreasing production for those operating within certain criteria, and thereby provides the TLS with content legitimacy. One farmer claimed “We got a fair

treatment" (Farmer 2, phone interview, April 5, 2019). The opinions are however divided, but the farmers are confirming the resistance to the content of the TLS during their interviews. This was seen in the consultation answers and when speaking to the farmers. Therefore the two numbers that are filled into the model, have been placed low down in their respective cells. This shows a weak type of legitimacy. An example may be a farmer stating that that a too small amount of fish is counted, and believe that research counts the wrong species and the weakest fish. One claim that random statistical variation undermines the legitimacy (Farmer 2, phone interview, April 5, 2019). This may illustrate that the content legitimacy of the TLS is weak, and is dependent upon a strictly handled exemption rule to secure, or contain the content legitimacy it needs to last. A comment that may furthermore show that §12 contributes positively to the content legitimacy through its handling was: "As predicted, predictable. We are not disappointed. […] We got an increased respect for the management. The NFSA treated mathematically and there was no discretionality. And we agree that is must be like this, when the criteria are made this way" (Farmer 2, phone interview, April 5, 2019). As mentitoned the attitudes towards this is diverse and what is important according to Jentoft in order for a system to have legitimacy: "It is more likely that the fishers (Here: farmers) will obey the regulations , if they have been part of shaping them" (Jentoft, Hengende snøre - Fiskerikrisen og framtiden på kysten, 1991, p. 129). The communication seemed to have been good in this first round of exemption growth. This is a feature that affects the procedure legitimacy of the TLS positively in that it seemed to be good with the NFSA in the application round (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 28). The farmers feel they were not heard before the TLS and rules were shaped. As seen they were at least included in formal consultation processes. Jentoft and Mikalsen underline that those arrangements made to secure involvement need to actually work and that the legitimacy (both content and procedure will) will be affected by how the affected people are consulted, and how this feedback is used (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 35). A comment from one of the farmers show an attitude towards the participation before the rules and the TLS came into being in the direction of a weakening of the procedure legitimacy: "The way we experience the whole TLS and the consultation processes the interest organizations and the industry have not been listened to on any point. There has been little degree of involvement in this regard, other than the following through of purely formal processes» (Farmer 1, phone interview, April 5, 2019). The other farmers also show a similar view on this matter. According to Jentoft and Mikalsen if the stakeholders did not get to voice their opinions and feel they are heard this weakens the

procedure legitimacy (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001, p. 28). One farmer states: "No, we were not aware of the hearing that led to the (exemption) rule being made In December 2017, and with retroactive effect. We had little or no influence on the shaping of the rule and we are not listened to much. It is short deadlines on the consultation processes. It is the IMR, NFSA and the NVI that lay the foundation on «professional» basis and one may question the professional basis" (Farmer 3, phone interview, April 9, 2019). The comments reveal attitudes that may affect the procedure legitimacy negatively. The fact that they have been invited to participate, increases the procedure legitimacy and it makes them more prone to accept a content that goes against what the want as content. But it weakens the legitimacy ift they doubt the system, and more so if they were actually not given the chance to participate in the consultation process. (Jentoft & Mikalsen, Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen, 2001). The opinions differ, so therefore the procedure and content legitimacy are considered weak in the figure above.

A general feature though is that the §12 is positive for the content legitimacy of the TLS, and has been that during the procedure of shaping the TLS and a comment that may be used to illustrate that came from one of the farmers.

> " *The exemption arrangement is a nice safety valve.* Because if one is in a production area with many "bad neighbors", but is operating well, then the exemption arrangement is a safety valve that contributes to legitimizing the TLS. *The exemption arrangement contributes to mend a little on the weaknesses with the TLS*, because one can nuance the situation inside a production area" (Farmer 1, phone interview, April 5, 2019).

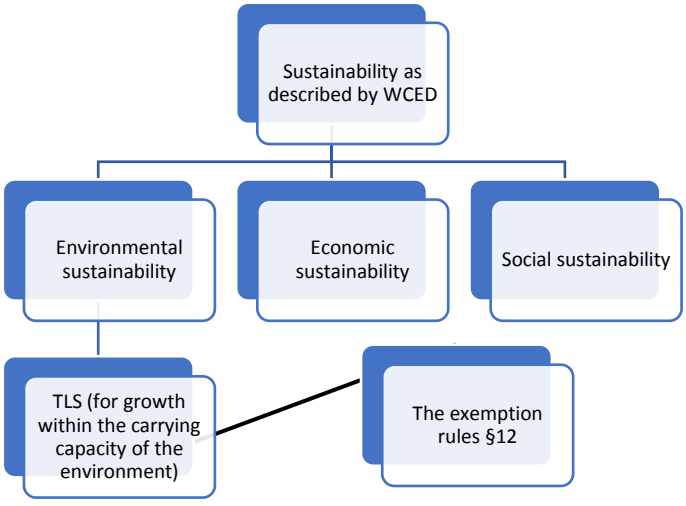
This reinforces the placing in the figure above, as the farmer were so much against the TLS from the start of the consultation process leading up to its establishment in 2017 (NSL, 2015; Norske SJømatbedrifters Landsforening, 2017; Sjømat Norge, 2016; Sjømat Norge/Norsk Industri/Norske Sjømatbedrifters Landsforening).

But the fact that few were interviewed, makes concluding about more than those interview hard. Seafood Norway claimed with strict demands, and also not favoring the good, but those fulfilling the too strict demands may be seen as a sign of them still punishing collectively (Sjømat Norge, 2016). But again the fact that they have been part of the process, gives the

TLS procedure legitimacy. How companies in the red areas and yellow areas react to the reduction remains to see when the capacity will be affected later this year.

In the future, the better the exemption rule works, the more it provides the TLS with legitimacy one may claim. The fact that it gives a chance for farmers to avoid collective punishment seems to have to have strengthened the procedure, and content legitimacy of the TLS, just by having the rule.
Since the farmers seem to still doubt the foundation and counting methods the content legitimacy of the TLS is fragile. But one may also claim that these doubts about the methods show an improvement potential for content legitimacy with regards to methods for the TLS, and the exemption arrangement. The doubt may be a potential challenge for the content legitimacy of the TLS, and so it might also be that for the exemption rules.

6.2 How does the exemption rules and the TLS affect the social sustainability of the aquaculture industry?



If the rule works well according to the intention and contributes to reducing the lice pressure in the future, the social sustainability will most likely increase. Similarily, if the economic sustainability and social sustainability decreases it may threaten the systems social acceptance locally, or even at a broader level.

Decreased fish welfare as shown in the results is something that might decrease social acceptance for the TLS and §12 in the future, if it does, and keeps facilitating decreased fish welfare.

When the farmers were challenged on the exemption rule and how it affected the acceptance of the TLS they answered the following: "It does not increase the acceptance for the TLS. […]. I fear that we have to live with the TLS in the future. It has only been working for two years. I do not think it will be permanent, but 6-8 years. But it will not last" (Farmer 3, phone interview, April 9, 2019). The NFSA was asked about the future of the system and replied "The system has only just started working. If it is not a prestige project, the authorities have invested so much in the system that it is more likely that the indicators will be changed rather than the system facing any dangers of being dismissed or considerably changed" (Person from DOF, phone interview, April 10, 2019). Another farmer claimed :"Not a great future for the TLS, if one does not measure the end result, which is 3-5 years from what is now measured. In 3-5 years will be when the salmon comes back to the rivers" (Farmer 2, phone interview, April 5, 2019). But then the same farmer states also that: "The TLS has been the start of a management, and it is not something we wish to criticize. But if it is to work in the future we need more information about the end final effects and final effects in the different production areas. […] It is a great opportunity, and a good system all in all, in many ways. But they should aim at video surveillance (in the rivers) to get an overview on wild fish" (Ibid).
As shown above from the NFSA it seems that the system might have come to stay. Different views on the future, two farmers interviewed believe it will not last, while one claims it has just started and is positive towards it as it has made the farmers work together (the TLS). This may be seen as a way for the industry to solve their challenges, by working together (NFD, 2015,a).

The three pillars: mostly environmental, but what about economic and social sustainability?

When considering the documents leading up to the establishment of the two §12's the term sustainability is a large part of the documents (NFD, 2015, a; NFD, 2015,b; NFD, 2016). These as well as other documents leading up to the establishment were checked with regards to which of the pillars were the most represented and not surprisingly, after having read the strategies from 2007 and 2009 and the Gullestad report, environment is important, but also

elements related to economic activity, especially value creation. This has to do with the fact that environment is to decide and set the limit for the possibility for, and the magnitude of growth (NFD, 2016). But economic value creation, and support for the system socially, are as Lyotard mentioned part of a plan or goal, in fact all three sustainability pillars are. And it remains to see what will actually be the results of the TLS.
The positive side is that the areas with challenges will be improved, over time, but socially this leads to less support potentially for those it affects, but in the long run that challenges might be solved with regards to lice, so it receives more external legitimacy. A comment from the DOF shows however that the exemption rule has been criticized for focusing to much on lice: "We received complaints from the environmental organizations (Naturnvernforbundet and Norske Lakseelvar sine fylkeslag) on 2% growth. These complained due to the fact that there were no other environmental concerns than lice that mattered. We received 62 complaints" (Person from DOF, phone interview, April 10, 2019). This was concerning the TLS and the exemption rule, and after the TLS was established.

When coding the documents, a wordcount was done from the documents, and a central document like the White paper helps to illustrate a pattern in the documents, only as a catalyst for the tendencies when reading. When looking for the words sustainability in the White Paper we see a clear difference in favor of environmental sustainability. Sustainability is mentioned 164 times, and out of these social sustainability is mentioned once. So is economic sustainability. Economy was mentioned 29 times, social 4 times, environment 445 times, settlement 2 times and workplaces 9 times. Tax was measured 13 times (NFD, 2015,a). As stated earlier in the paper the Ministry, according to Solås et al , has underlined that there is too narrow focus on environmental sustainability in the shaping of the TLS (Solås, et al., 2015). This may be used as an illustration to confirm that opinion. Also lkoking at other documents the environmental focus in the documents leading up to the exemption rule and its criteria is predominant. The further out in the process of shaping the exemption arrangement, the less traces of economic and social one main find in the documents.

The population has become more critical to the environmental impact that humans create, it seems the management is seeking to legitimize activity. This they do by taking steps towards a more sustainable way of operation (Jentoft, Legitimacy and disappointment in fisheries management, 2000). With this as a back drop it will be interesting to see in the future how the TLS turns out. Because as pointed out by the steering committee and the research institutions

there are uncertainties with the foundation of the TLS (Styringsgruppen for vurdering av lusepåvirkning, 2017). The TLS will have to operate for a period in order to be able to consider the results of the system With regards to the exemption rule it is especially interesting with regards to how it affects the lice situation and if the TLS lowers the lice spreading. This will determine whether the system contributes to environmental sustainability or not. With regards to economic sustainability, it seems like it may be negative and not securing that for those having to reduce their production capacity by 6% or potentially more. Having to reduce will according to one farmer lead to a situation that may challenge both economic- and social sustainability : «We mainly apply to avoid reduction. Reduced production leads to less activity and turn over. We have a complex company and a result may be uncertain work places, lower investment and less innovation. It becomes a vicious circle" (Farmer 3, phone interview, April 9, 2019). This shows that the TLS may contribute to less economic and, social sustainability and support in certain areas. This might affect the acceptance for the system.

Following the sustainable path may legitimize using the oceans for aquaculture also in the future. As mentioned in the White Paper 16 and the consultation document that came before it there is a clear message that a certain footprint must be accepted (NFD, 2015,a; NFD, 2015,b). TLS seem to have been the start of a solution for the industry to grow while solving its challenges, and maintaining its support in the society for the footprints through the new system (NFD, 2015,a). A farmer claimed that the TLS ia a start, and its module based build up may make it flexible enough to encounter changes in the future (Farmer 1, phone interview, April 5, 2019; NFD, 2015,a). In this sense one may understand the farmer claiming it is a really good opportunity and good in many ways by providing this flexibility to change parameters to adapt in the future (Hovland, et al., 2014) The amount of applicants so far show that few locations and applicants have managed to get exemption growth or avoided reduction, although increasing in number from the first round to the second. The strength of the §12 may be affected by how many it concerns in the future, and whether those having to reduce will accept the regulations or not. The consultation process that started in February, suggesting changes to the aquaculture act, may show that the government is trying to brace itself for the resistance it might meet when reducing the red areas (Nærings- og Fiskeridepartmentet, 2019,a).

Chapter 7 Conclusion:

There has been too little time and only one round of exemption growth to offer a thorough conclusion about sustainability at this stage. This makes it too short time to really conclude about its acceptance. But what this paper does show is that the §12 contributed the TLS with content legitimacy. A positive element with the §12 that supports the TLS with legitimacy is its strictness. This provides the TLS with the objectivity and predictability that the government has been promising. The farmers participated in the consultation processes and the authorities showed a will to compromise, although in practice this was a very limited compromise. To use the words of one farmer being interviewed, the §12 may be seen as a safety valve during the process of establishing the TLS. If it is to keep providing the TLS with content legitimacy and have a chance to give the new system social acceptance, it might be smart to do something about the potential decreased fish welfare it is causing as this may be a challenge towards sustaining or contributed to increased social acceptance in the future for the aquaculture industry. Fish welfare might become an issue if the technology does not find ways to de-lice without decreasing fish health. This could be a challenging side effect to the economical as well as the social sustainability of the TLS, and the §12. A more challenging part is that the reduction of production capacity is one of the reasons for the consultation process that was initiated earlier this year. According to Sjømatbedriftene the government is trying to limit the chances for the industry to test their legal rights, when the reduction comes (Sjømatbedriftene, 2019) This process shows that the legitimacy of the TLS is fragile, and the first reduction of capacity might be a test for the TLS, and also the exemption rules. The answers are quite divided, so whether the rule works according to its intention time will need to show. But the strictness of the handling of §12 strengthens the legitimacy of the TLS. Even though the answer are not unanimous they still criticize the things that has be criticized all along from the start so the legitimacy needs to be strengthened rather than being weakened. As shown, few applied, and fewer got access to the exemption growth and avoided reduction, so the large majority in the red and yellow areas will have their full potential existing capacity limited. The answer from Sjømatbedriftene shows that we do not know the consequences yet reducing production capacity in the future (Ibid). A 6% reduction is dramatic, and it is hard to say whether this will be an economically sustainable system. However, at this stage it does appear that the reduction in lice pressure leads to an ecosystem-based approach to aquaculture management which will help to create a biological sustainability within the industry.

As the interview with the DOF showed the system has been criticized for focusing to much on lice:

> *"We received complaints from the environmental organizations (Naturnvernforbundet and Norske Lakseelvar) on 2% growth. These complained due to the fact that there were no other environmental concerns than lice that mattered. We received 62 complaints"* (Person from DOF, phone interview, April 10, 2019).

This was concerning the TLS and the exemption rule, and after the TLS was established. There are opinions against the system by many actors, so the system may need to make changes with regards to the indicator.

However if the focus on the environment keeps being too narrow in the future, the balance will potentially also lead to the TLS being challenged. A weak economic sustainability will affect the two others, as the three are hard to strictly separate. A weak economic sustainability, will affect the social sustainability both with regards to support, and less trickle down or knock on effects. Whether the environmental sustainability will be overshadowing the two others, remains to be seen in time.

Suggestions for further studies:

To see how the legitimacy and social acceptance changes over time for the TLS could be an interesting project. The results from the consultation processes and the interviews are similar, there are still doubts about some of the same elements. This also shows that further research on these attitudes with regards to whether the legitimacy and social acceptance in the future has increased or decreased. Furthermore to see whether the exemption arrangement works according to its intentions and goals may be a research project. This year, a new round with the exemption arrangement is being followed through. Also asking those that have not applied, what they think about the TLS and the exemption arrangement with regards to social acceptance could be a possible study. As this paper was written thermic treatment has been discussed and new regulations will most likely affect the exemption arrangement and the TLS in the next round. How this affects the TLS and the exemption arrangement may be possible. Comparing the two years to develop a deeper understanding of the exemption rules in order may be done.

Referanser

Havforskningsinstituttet og Veterinærinstituttet . (2012). *Forslag til førstegenerasjons målemetode for miljøeffekt (effektindikatorer) med hensyn til genetisk påvirkning fra oppdrettslaks til villaks, og påvirkning av lakselus fra oppdrett på viltlevende laksefiskebestander.* Bergen: Havforskningsinstituttet og Veterinærinstituttet . Retrieved from https://www.google.com/search?ei=0ETcXPLiD_CsmwXQ-bfoAQ&q=Taranger+et+al%2C+2011&oq=Taranger+et+al%2C+2011&gs_l=psy-ab.3...1808912.1811917..1812757...0.0..0.157.279.0j2.....0....1j2..gws-wiz.....0.KB5ac5DjzzM

Aarre, E. (2018, November 3). Laksen spiser fem ganger mer enn den gir tilbake. *Fædrelandsvennen*, p. 16. Retrieved from https://web.retriever-info.com/services/archive/displayPDF?documentId=055034201811035006766&serviceId=2

Almås, K., & Ratvik, I. (2017). *Sjøkart mot 2050.* Trondheim: SINTEF Ocean AS. Retrieved February 12, 2019, from https://www.sintef.no/contentassets/b26c5aed53be4385b4ab770c24761a95/sjokart--endelig-versjon-7.april-2017.pdf

Berge, A. (2016, November 3). Havbruk kan bidra til å nå flere av FNs bærekraftsmål. *Havbruk kan bidra til å nå flere av FNs bærekraftsmål*. (A. Berge, Ed.) Bergen, Hordaland, Norway. Retrieved March 31, 2019, from https://ilaks.no/havbruk-bidra-til-a-na-flere-av-fns-baerekraftmal/

Bonde, A. (2018, May 29). *www.snl.no*. Hentet March 1, 2019 fra Soria Moria-erklæringene: https://snl.no/Soria_Moria-erkl%C3%A6ringene

Dahl, I. (2018). Beskyttelsesregimet for villaks - noen rettslige betraktninger. In G. E. Trude Haugli, *Rettsvitenskap under nordlys og midnattssol* (pp. 81-104). Tromsø: Fagbokforlaget.

Det Kongelige Norske Videnskabers Selskab (DKNVS) og Norges Tekniske Vitenskapsakademi (NTVA). (2012). *Verdiskaping basert på produktive hav i 2050.* Trondheim: SINTEF. Hentet May 15, 2019 fra https://www.sintef.no/globalassets/upload/fiskeri_og_havbruk/publikasjoner/verdiskaping-basert-pa-produktive-hav-i-2050.pdf

Emas, R. (2015). Brief for GDSR 2015. *The Concept of Sustainable Development: Definition and Defining Principles*. Retrieved from https://sustainabledevelopment.un.org/content/documents/5839GSDR%202015_SD_concept_definiton_rev.pdf

Everett, E., & Furseth, I. (2012). *Masteroppgaven - Hvordan begynne - og fullføre.* Oslo: Universitetsforlaget.

FAO . (2003, None None). FAO Fisheries Technical Paper 443. *The ecosystem approach to fisheries - Issues, terminology, principles,institutional foundations,implementation and outlook*. Rome, Rome, Italy. Retrieved May 9, 2019, from http://www.fao.org/3/a-y4773e.pdf

FD. (2016, September 20). *Fiskeridirektoratet*. Retrieved January 9, 2019, from Biomasse: https://www.fiskeridir.no/Akvakultur/Drift-og-tilsyn/Biomasse

FD. (2018, August 14). *www.fiskeridir.no*. Retrieved May 7, 2019, from Akvakultur: https://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Saertillatelser/Utviklingstillatelser

FD. (2019, January 31). *www.fiskdir.no.* Retrieved May 10, 2019, from Akvakultur - Laks, regnbueørret og ørret: https://www.fiskeridir.no/Akvakultur/Statistikk-akvakultur/Akvakulturstatistikk-tidsserier/Laks-regnbueoerret-og-oerret

Fisk Media AS. (2011, March 5). Arealutvalgets rapport på høring. *Arealutvalgets rapport på høring*. Hellevik, Sogn og Fjordane, Sogn og FJordane: Fisk Media AS. Retrieved May 15, 2019, from https://fisk.no/oppdrett/4392-arealutvalgets-rapport-pa-horing

FKD. (2009). *Strategi for en miljømessig bærekraftig havbruksnæring.* Oslo: Fiskeri- og kystdepartementet. Retrieved from https://www.regjeringen.no/globalassets/upload/fkd/vedlegg/brosjyrer/2009/brosjyre_strategi_baerekraftig_havbruk.pdf

FKD. (2011). *Effektiv og bærekraftig arealbruk i havbruksnæringen - areal til begjær.* Ekspertutval oppnevnt av Fiskeri - og kystdepartementet. Retrieved March 19, 2019, from https://www.regjeringen.no/globalassets/upload/fkd/vedlegg/rapporter/2011/effektiv_og_baerekraftig_arealbruk_i_havbruksnaeringen.pdf

FKD. (2013, March 22). *Meld.St.22 (2012-2013) Verdens fremste sjømatnasjon.* Oslo: Fiskeri- og kystdepartmentet. Retrieved from Meld.St.22 (2012-2013) Verdens fremste sjømatnasjon: https://www.regjeringen.no/contentassets/435e99fc39b947d79ca929eff484ac75/no/pdfs/stm201220130022000dddpdfs.pdf

Grønmo, S. (2004). *Samfunnsvitenskapelige metoder.* Bergen: Fagbokforlaget.

Hersoug, B. (2015, November 16). The greening of Norwegian salmon production. *Maritime Studies*, pp. 1-19. Retrieved March 26, 2019, from https://maritimestudiesjournal.springeropen.com/articles/10.1186/s40152-015-0034-9

Hersoug, B., Mikkelsen, E., & Karlsen, K. (2019, November 29). "Great expectations" - Allocating licenses with special requirements in Norwegian salmon farming. *Marine Policy*, pp. 152-162.

Hovland, E., Møller , D., Haaland, A., Kolle, N., Hersoug, B., & Nævdal, G. (2014). *Norges Fiskeri- og Kysthistorie: Over den leiken ville han rå - Norsk havbruksnærings historie Bind V.* Bergen: Fagbokforlaget.

Høringssvar fra Sjømat Norge. (2017, June 29). Retrieved from Regjeringen.no: https://www.regjeringen.no/no/dokumenter/horing---forslag-til-endringer-i-forbindelse-med-implementering-av-nytt-system-for-kapasitetsjusteringer-i-havbruksnaringen/id2553982/?uid=554f9d1e-d651-4575-a12b-34707b2df921

Jacobsen, D. (2005). *Hvordan gjennomføre undersøkelser? Innføring i samfunnsvitenskapelig metode.* Kristiansand: Høyskoleforlaget.

Jentoft, S. (1991). *Hengende snøre - Fiskerikrisen og framtiden på kysten.* Oslo: Ad Notam Forlag.

Jentoft, S. (2000, March). Legitimacy and disappointment in fisheries management. *Marine Policy*, pp. 141-148.

Jentoft, S., & Mikalsen, K. (2001). *Lastet til ripa - Fiskernes rettsstilling i ressursforvaltningen.* Trondheim: Tapir Akademisk Forlag.

Karlsen, Ø., Finstad, B., Ugedal, O., & Svåsand, T. (2016). *Kunnskapsstatus som grunnlag for kapasitetsjustering innen produksjons-områder basert på lakselus som indikator.* Bergen: Havforskningsinstituttet m.fl. Retrieved May 15, 2019, from https://www.imr.no/filarkiv/2016/04/kunnskapsstatus_lakselus_som_indikator.pdf/nb-no

Károly, K. (2011). Rise and Fall of the Concept Sustainability. *Journal of Environmental Sustainability*, pp. 7-18. Retrieved from https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1008&context=jes

Klima-og miljødepartementet. (2002, June 21). *www.regjeringen.no*. Hentet fra Proposisjoner til Stortinget Om opprettelse av nasjonale laksevassdrag og laksefjorder: https://www.regjeringen.no/no/dokumenter/stprp-nr-79-2001-2002-/id206699/

Kuhlman, T., & Farrington, J. (2010, November 1). What is sustainability? *Sustainability*, pp. 3436-3448. Retrieved March 26, 2019, from https://www.mdpi.com/2071-1050/2/11/3436

Lovdata. (2006, June 1). *www.lovdata.no*. Retrieved from Lov om akvakultur (akvakulturloven): https://lovdata.no/dokument/NL/lov/2005-06-17-79

Lovdata. (2015, October 1). *www.lovdata.no*. Retrieved March 19, 2019, from Lov om akvakultur (akvakulturloven): https://lovdata.no/dokument/NL/lov/2005-06-17-79?q=akvakulturloven

Lovdata. (2017, January 16). *www.lovdata.no*. Retrieved from Forskrift om produksjonsområder for akvakultur av matfisk i sjø av laks, ørret og regnbueørret (produksjonsområdeforskriften): https://lovdata.no/dokument/SF/forskrift/2017-01-16-61/KAPITTEL_4%20-%20KAPITTEL_4#KAPITTEL_4%20-%20KAPITTEL_4

Lovdata. (2017,a, January 16). *www.lovdata.no*. Retrieved Mars 16, 2019, from Forskrift om produksjonsområder for akvakultur av matfisk i sjø: https://lovdata.no/dokument/SF/forskrift/2017-01-16-61

Lovdata. (2017,b, December 20). *www.lovdata.no*. Retrieved Mars 16, 2019, from Forskrift om kapasitetsøkning for tillatelser til akvakultur med matfisk i sjø av laks, ørret og regnbueørret i 2017-2018: https://lovdata.no/dokument/SF/forskrift/2017-12-20-2397?q=produksjonsomr%C3%A5deforskriften

Lyotard, J.-F. (1986). *Det postmoderne forklaret for børn.* København: Akademisk Forlag.

Mattilsynet. (2018,a, April 11). *www.mattilsynet.no*. Retrieved from Kapasitetsøkning 2017/2018: Oversikt søknader behandlet av Mattilsynet: https://www.mattilsynet.no/fisk_og_akvakultur/akvakultur/drift_av_akvakulturanlegg/kapasitetsokning_20172018_oversikt_soknader_behandlet_av_mattilsynet.29846

Mattilsynet. (2018,b, June 5). *www.mattilsynet.no*. Retrieved from Klagesaker på kapasitetsøkning i oppdrett: https://www.mattilsynet.no/fisk_og_akvakultur/akvakultur/drift_av_akvakulturanlegg/klagesaker_paa_kapasitetsokning_i_oppdrett.30921

Mattilsynet. (2019, April 10). *www.mattilsynet.no*. Retrieved April 12, 2019, from Mattilsynet vurderer 49 saker om unntaksvekst for oppdrettsanlegg: https://www.mattilsynet.no/fisk_og_akvakultur/akvakultur/drift_av_akvakulturanlegg/mattilsynet_vurderer_49_saker_om_unntaksvekst_for_oppdrettsanlegg.34498

Mellbye, H. (2016, October 28). *www.fiskejuss.no*. (Sands, Producer) Retrieved April 26, 2019, from Trafikklyssystem i strid med Grunnloven: http://fiskejuss.no/2016/10/trafikklyssystem-i-strid-med-grunnloven/

Mellbye, H. (2017, June 1). *www.fiskejuss.no*. Retrieved April 26, 2017, from Produksjonsområdene i akvakultur - et demokratisk problem: http://fiskejuss.no/2017/06/produksjonsomradene-i-akvakultur-et-demokratisk-problem/

Mellbye, H. (2018). *Rettslig regulering av norsk akvakultur.* Oslo: Universitetsforlaget.

Mikalsen, K. H., & Jentoft, S. (2001, April 9). From user-groups to stakeholders? The public interest in fisheries management. *Marine Policy*, pp. 281-292.

Moldan, B., Janouskova, S., & Hak, T. (2011, January 26). How to understand and measure environmental sustainability: Indicators and targets. *Ecological Indicators*, pp. 4-13. Retrieved March 31, 2019, from http://eclass.uth.gr/eclass/modules/document/file.php/MHXA236/%CE%95%CE%A1%CE%93%CE%91%CE%A3%CE%99%CE%95%CE%A3%202018/%CE%9C%CF%80%CE%AC%CF%84%CF%83%CE%B9%CE%BF%CF%82.pdf

NFD. (2015,a). *Meld.St.16 (2014-2015) Forutsigbar og miljømessig bærekraftig vekst i norsk lakse-og ørretoppdrett.* Oslo: Nærings-og Fiskeridepartementet. Retrieved from https://www.regjeringen.no/contentassets/6d27616f18af458aa930f4db9492fbe5/no/pdfs/stm201420150016000dddpdfs.pdf

NFD. (2015,b, November 24). Høringsnotat - melding til Stortinget om vekst i norsk lakse- og ørretoppdrett. *Høringsnotat - melding til Stortinget om vekst i norsk lakse- og ørretoppdrett*. Oslo, Oslo, Norway: Nærings - og Fiskeridepartementet.

NFD. (2016). *Høringsnotat - Implementering av Meld.St.16 (2014-2015).* Oslo: Nærings- og fiskeridepartementet. Retrieved from https://www.regjeringen.no/contentassets/c9a57b93b9a04cabb67665314dc3bbd6/horingsnotat.pdf

NFD. (2017,a, May 19). Høringsbrev. *Høring -diverse forslag til endringer i forbindelse med implementering av nytt system for kapasitetsjusteringer i havbruksnæringen*. Oslo, Oslo, Norway: Nærings-og Fiskeridepartementet. Retrieved from https://www.regjeringen.no/contentassets/70675f4f7df3464db42d49573d489706/horingbr

ev---diverse-forslag-til-endringer-i-forbindelse-med-implementering-av-nytt-system-for-kapasitetsjusteringer-i-havbruksnaringen.pdf

NFD. (2017,b, December 8). Høringsnotat - Utkast til forskrift om kapasitetsøkning for tillatelser til akvakultur med matfisk i sjø av laks, ørret og regnbueørret i 2017/2018. *Høringsnotat*. Oslo, Oslo, Oslo: Nærings-og Fiskeridepartementet. Retrieved from https://www.regjeringen.no/contentassets/58daa202d0f344b986aa35b440bb5fb9/horingsnotat-l2147037.pdf

NFD. (2017,c, November 6). *www.regjeringen.no*. Retrieved from Nytt forslag om laksevekst: https://www.regjeringen.no/no/aktuelt/nytt-forslag-om-laksevekst/id2577815/

NFD. (2019,b, February 1). Høringsnotat - forslag om endring av akvakulturloven. *Høringsnotat*. Oslo, Oslo, Norway: Nærings- og Fiskeridepartement. Retrieved from https://www.regjeringen.no/contentassets/65509f713fb6448c9cbe25f593cc5192/horingsnotat.pdf

Norske Sjømatbedrifters Landsforening. (2017, June 29). Høringssvar - forslag til endringer i forbindelse med implementering av nytt system for kapasitetsjusteringer i havbruksnæringen. *Untitled*. Oslo, Oslo, Norway: Norske Sjømatbedrifters Landforening. Retrieved from https://www.regjeringen.no/contentassets/3cf0574d78744563aef521a29afa8b66/norske-sjomatbedrifters-landsforening.pdf?uid=Norske_Sj%C3%B8matbedrifters_Landsforening.pdf

NSL. (2015, January 9). Høringssvar på melding til stortinget om vekst i norsk lakse- og ørretoppdrett. *Høringssvar på melding til stortinget om vekst i norsk lakse- og ørretoppdrett*. Trondheim, Sør-Trøndelag, Norway: Norske Sjømatbedrifters Landsforening. Retrieved from https://www.regjeringen.no/contentassets/b2de95d503b842c599412de09d5c68b3/norske-sjomatbedrifters-landsforening.pdf?uid=Norske_sj%C3%B8matbedrifters_landsforening

NSL. (2016, September 21). Untitled. *Untitled*. Trondheim, Trøndelag, Norway: Norske Sjømatbedrifters Landsforening. Retrieved from https://www.regjeringen.no/contentassets/2327db7995364d28904bf70d619b8ea2/norske-sjomatbedrifters-landsforening.pdf?uid=Norske_Sj%C3%B8matbedrifters_Landsforening.pdf

Nærings- og Fiskeridepartementet. (2019, February 2). Høring - forslag om endring av akvakulturloven. *Høringsnotat*. Oslo, Oslo , Norway: Nærings - og Fiskeridepartementet. Retrieved from

https://www.regjeringen.no/contentassets/65509f713fb6448c9cbe25f593cc5192/horingsnotat.pdf

Nærings- og Fiskeridepartmentet. (2019,a, February 1). *www.regjeringen.no*. Retrieved from Høring - forslag om endring av akvakulturloven: https://www.regjeringen.no/no/dokumenter/horing---forslag-om-endring-av-akvakulturloven/id2627298/?expand=horingsnotater

Næringskomiteen. (2015, June 8). *www.stortinget.no*. Retrieved from Innstilling fra næringskomiteen om forutsigbar og miljømessig bærekraftig vekst i norsk lakse-og ørretoppdrett: https://www.stortinget.no/globalassets/pdf/innstillinger/stortinget/2014-2015/inns-201415-361.pdf

Nærings-og Fiskeridepartementet. (2017, December 21). Veileder til forskrift omkapasitetsøkning 2017/2018side 1Veiledertilforskrift omkapasitetsøkning for tillatelser til akvakultur med matfisk i sjø av laks, ørret og regnbueørret i 2017/2018. *Veileder til forskrift omkapasitetsøkning 2017/2018side 1Veiledertilforskrift omkapasitetsøkning for tillatelser til akvakultur med matfisk i sjø av laks, ørret og regnbueørret i 2017/2018*. Oslo, Oslo, Norway: Nærings- og Fiskeridepartmentet. Retrieved from https://www.regjeringen.no/contentassets/0701556f65e64601899c973552dec326/veileder--forskrift-om-tildeling-av-kapasitetsokning.pdf

Olerud, K. (2016, October 30). Verdenskommisjonen for miljø og utvikling. *Verdenskommisjonen for miljø og utvikling*. Bergen, Hordaland, Norway: Store Norske Leksikon. Retrieved Mars 26, 2019, from https://snl.no/Verdenskommisjonen_for_milj%C3%B8_og_utvikling

Purvis, B., Mao, Y., & Robinson, D. (2018, August 23). Three pillars of sustainability: in search of conceptual origins. *Sustainability science*, pp. 1-15. Retrieved from https://link.springer.com/content/pdf/10.1007%2Fs11625-018-0627-5.pdf

Regjeringen. (2017, October 30). *www.regjeringen.no*. Retrieved from Aktuelt: https://www.regjeringen.no/no/aktuelt/regjeringen-skrur-pa-trafikklyset/id2577032/

Rothstein, B. (1998). *Just institutions matter: the moral and political logic of the universal welfare state.* Cambridge: Cambridge University Press.

Sjømat Norge / Norsk Industri / Norske Sjømatbedrifters Landsforening. (2016, September 20). *www.regjeringen.no*. Retrieved from Høringssvar fra Sjømat Norge/Norsk Industri/Norske Sjømatbedrifters Landsforening: https://www.regjeringen.no/no/dokumenter/forslag-til-

regelverk-for-a-implementere-nytt-system-for-kapasitetsjusteringer-i-lakse--og-orretoppdrett/id2505908/?uid=a8354dcd-99b2-4668-86dc-962a83f35fec

Sjømat Norge. (2016, September 20). Høringssvar fra Sjømat Norge. *Høringssvar fra SJømat Norge*. Oslo, Oslo, Norge: Sjømat Norge. Retrieved from https://www.regjeringen.no/no/dokumenter/forslag-til-regelverk-for-a-implementere-nytt-system-for-kapasitetsjusteringer-i-lakse--og-orretoppdrett/id2505908/?uid=07aaf81b-9477-49f1-a964-5282f914c82f

Sjømatbedriftene. (2019, February 21). *www.regjeringen.no.* Retrieved from Høringssvar fra Sjømatbedriftene: https://www.regjeringen.no/no/dokumenter/horing---forslag-om-endring-av-akvakulturloven/id2627298/?uid=1ba970c6-0451-47be-821b-e34962b84bac

Solås, A.-M., Hersoug, B., Andreassen, O., Tveterås, R., Osmundsen, T., Sørgård, B., . . . Robertsen, R. (2015). *Rettslig rammeverk for norsk havbruksnæring - karlegging av dagens status.* Tromsø: Nofima.

Styringsgruppen for vurdering av lusepåvirkning. (2017, September 15). Råd fra styringsgruppen for vurdering av lusepåvirkning. *Råd fra styringsgruppen for vurdering av lusepåvirkning*. Bergen, Hordaland, Hordaland. Retrieved May 15, 2019, from https://www.regjeringen.no/contentassets/b352699b485d471fa50b9efdffb28dce/rad-fra-styringsgruppe-til-nfd-september-1509.docx.pdf

Teknologirådet. (2012). *Fremtidens lakseoppdrett.* Oslo: Teknologirådet. Retrieved May 15, 2019, from https://teknologiradet.no/wp-content/uploads/sites/105/2018/04/Rapport-Fremtidens-lakseoppdrett.pdf

The Food and Agriculture Organization of the United Nations. (2019, March 28). *www.fao.org*. Retrieved March 28, 2019, from http://www.fao.org/3/ai388e/AI388E05.htm

The United Nations. (n.d.). *Sustainable development goals*. Retrieved March 28, 2019, from www.un.org: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

The United Nations,a. (n.d.). *Sustainable development goals*. Retrieved March 28, 2019, from https://www.un.org/sustainabledevelopment/sustainable-development-goals/

The United Nations,b. (n.d.). *www.un.org*. Retrieved May 12, 2019, from Sustainable development goals: https://www.un.org/sustainabledevelopment/oceans/

Unknown. (2016, March 9). An introduction to document analysis. Unknown, Unknown, Unknown: Unknown. Hentet May 15, 2019 fra https://lled500.trubox.ca/2016/244

Ådlandsvik, B. (2015). *Forslag til produksjonsområder.* Bergen: Havforskningsinstituttet. Retrieved May 15, 2019, from https://www.regjeringen.no/contentassets/e391c7b59ddc4791a4e4d4aa37018185/omrader apport-hi.pdf

Appendices:

Appendix 1 §12 (the exemption rule) from the Production Area Regulation

§ 12.*Tilbud om kapasitetsøkning uavhengig av miljøstatus i produksjonsområdet*

Uavhengig av miljøstatus i produksjonsområdet, kan departementet gi tilbud til innehaver av tillatelse som har lokaliteter der

a) lakseluslarver ikke slippes ut i frie vannmasser, og dette er dokumentert for den sist gjennomførte produksjonssyklusen og samtidig for en periode på minimum 12 måneder av en uhildet faginstans, eller

b) det

1. var færre enn 0,1 voksne hunnlus per fisk ved alle tellinger i perioden 1. april til 30. september, eller at utslippet av egg og frittsvømmende stadier av lakselus til miljøet ikke er større enn det utslippet ville ha vært fra et tilsvarende antall fisk med et lusenivå på 0,1 voksne hunnlus i gjennomsnitt per fisk, og

2. behandlet medikamentelt mot lakselus ikke mer enn 1 gang under den siste produksjonssyklusen. Dersom produksjonssyklusen er kortere enn 12 måneder, forlenges perioden bakover i tid til 12 måneder men samtidig slik at hele produksjonssyklusen omfattes.

Selv om det observerte lusenivået på en lokalitet overskrider lusegrensen angitt i første ledd, kan departementet likevel gi tilbud til innehaver av tillatelse så fremt den observerte verdien

1. oversteg 0,17 kun ved en telling per periode nevnt i første ledd bokstav a, og

2. et lusenivå høyere enn 0,1 voksne hunnlus ikke ble påvist i mer enn tre påfølgende tellinger i løpet av perioden.

Tilbudet vil kunne omfatte de tillatelsene som er knyttet til lokaliteten som oppfyller vilkårene. Tilbudets størrelse avgrenses i utgangspunktet av hvor stor del av den samlede tilknyttede tillatelseskapasiteten som faktisk er benyttet på lokaliteten som oppfyller vilkårene. Departementet kan redusere tilbudets størrelse forholdsmessig basert på den faktiske vektøkningen hos fisken som holdes på lokaliteten. Hver tillatelse knyttet til lokaliteten som faller inn under unntaket kan ikke økes med mer enn 6 pst. i hver tildelingsrunde. Tilbudet beregnes på grunnlag av

1. samlet vektøkning på fisk i sjø på lokalitet som oppfyller vilkårene, eller

2. samlet vektøkning på settefisk over 250 gram eller matfisk produsert for samme formål (postsmolt), som er produsert på lokalitet i sjø som oppfyller vilkårene i første ledd.

3. Matfisk som er flyttet til eller fra lokaliteten som oppfyller vilkårene, med unntak for fisk til slakt, medregnes ikke.

4. perioden 1. februar i søknadsåret og to år tilbake i tid, og snittet av de to årene legges til grunn i beregningene.

5. Dersom selskapet eller konsernet ikke har tilsvarende produksjon i samme produksjonsområde, kan departementet i beregningen av (1) og (2) legge andre erfaringstall eller estimater til grunn.

Dokumentasjon av oppfylling av vilkårene etter denne bestemmelsens første og andre ledd sendes på fastsatt skjema til Mattilsynet innen 1. mars i oddetallsår, likevel slik at i 2019 skal dokumentasjonen sendes innen 5. april 2019.

Kapasitetsjustering av maksimalt tillatt biomasse (MTB) etter denne bestemmelsen forutsetter innbetaling av et vederlag til statskassen. Vederlagets størrelse og frist for innbetaling fastsettes særskilt av departementet for hver runde med tilbud. Vederlaget blir ikke tilbakebetalt ved en eventuell senere endring eller tilbakekall av tillatelsen på grunn av forhold nevnt i akvakulturloven § 9. Det samme gjelder dersom andre forhold gjør at tillatelsen helt eller delvis taper sin verdi.

Det skal betales gebyr for tilsyn utført etter denne bestemmelsen.

Endret ved forskrifter 7 juli 2017 nr. 1161, 20 feb 2019 nr. 216.

Source: (Lovdata, 2017,a).

Appendix 2 §12 (The exemption rule) from the Capacity Adjustment Regulation (2017-2018)

§ 12.*Tilbud om kapasitetsøkning uavhengig av miljøstatus i produksjonsområdet*

Innehaver av tillatelse som nevnt i § 2 kan sende søknad om å motta tilbud om kapasitetsøkning. For å motta tilbud må innehaverens tillatelse ha vært eller være tilknyttet en lokalitet der

a) lakseluslarver ikke slippes ut i frie vannmasser, og dette er dokumentert av en uhildet faginstans for den sist gjennomførte produksjonssyklusen og samtidig for en periode på minimum 12 måneder, eller

b) det

1. var færre enn 0,1 voksne hunnlus per fisk ved alle tellinger i perioden 1. april til 30. september i årene 2016 og 2017, eller at utslippet av egg og frittsvømmende stadier av lakselus til miljøet ikke er større enn det utslippet ville ha vært fra et tilsvarende antall fisk med et lusenivå på 0,1 voksne hunnlus i gjennomsnitt per fisk,
2. ikke er behandlet medikamentelt mot lakselus mer enn 1 gang under den siste produksjonssyklusen. Dersom produksjonssyklusen er kortere enn 12 måneder, forlenges perioden bakover i tid til 12 måneder, men samtidig slik at hele produksjonssyklusen omfattes,
3. ikke er truffet vedtak om reduksjon av maksimalt tillatt biomasse, og dette vedtaket har hatt effekt innenfor kalenderårene 2016 og 2017.

Selv om det observerte lusenivået på en lokalitet overskrider lusegrensen angitt i første ledd bokstav b) nr. 1 og 2, kan fylkeskommunen likevel gi tilbud til innehaver av tillatelse så fremt den observerte verdien

a) oversteg 0,17 kun ved en telling per periode per kalenderår nevnt i første ledd, og

b) et lusenivå høyere enn 0,1 voksne hunnlus ikke ble påvist i mer enn tre påfølgende tellinger i løpet av perioden per kalenderår.

Source: (Lovdata, 2017,b).

Appendix 3 Interview guide Farmers

Intervjuguide: Oppdrettarane

Introduksjon til temaet: Intervjuet vil handle om unntaksregelen (§12) for raude/gule produksjonsområder frå søknadsrunden i 2018.

Firmanavn: Anonym

Tidsramme: Frå 30 til 45 minutt

Intervjutype: telefon intervju

Tema	**Spørsmål**
Generelle spørsmål for å starte intervjuet	1) Sei litt om selskapet dykkar

Hovuddel av intervjuet

Here ynskjer eg lære meir om søknadsprosessen sett frå dykkar ståstad.	- 2) Kvifor meinte de at de skulle få unntak? - 3) Kan du sei litt om søknadsprosessen? - 4) Er de fornøgde med de grunngjevinga de fekk? - 5) Har svaret påverka synet ditt på unntaksregelen? Eller på trafikklyssystemet? Klage - Dersom de klaga, kvifor gjorde de det?
Her ynskjer eg å lære meir om synspunkt på unntaksordninga og §12 (unntaksregelen).	- 6) Førar unntaksregelen til muligheiter for dykkar selskap slik du ser det? I så fall kva slags muligheiter? - 7) Førar unntaksregelen til utfordringar/usikkerheiter for dykkar selskap slik du ser det? I så fall kva slags utfordringar? - 8) Kva syns du om kriteria i unntaksordninga? - 9) Opplever du at synspunkt blei høyrde under utforminga av regelen?
Her ynskjer eg å vete noko om kva konsekvensar	- 10) Korleis reagerar selskapet dykkar på svaret på søknaden?

unntaksregelen har ift oppslutnad.	- 11) Oppfatter du at unntaksordninga har brei oppslunad i næringa?
Avslutningsvis	- Er det noko de set inne med til slutt, som de ynskjer å sei. - La til i siste oppdrettars intervju at: Ift legitimiteten/sosial aksept: har prosessen fram mot etablering av regelen bidrege til å auke / eller minke aksepten dykkar for tls?

Appendix 4 Interview guide Norwegian Food Security Agency

Intervjuguide: Mattilsynet

Introduksjon til temaet: Intervjuet vil handle om unntaksregelen (§12) for raude/gule produksjonsområder frå søknadsrunden i 2018.

Navn: Anonym

Tidsramme: Frå 30 til 45 minutt

Intervjutype: telefon intervju

Tema	**Spørsmål**
Generelle spørsmål for å starte intervjuet	1)Sei litt om kvifor vi fekk unntaksregelen og om dykkar rolle i forhold til unntaksregelen

Hovuddel av intervjuet

Here ynskjer eg lære meir om søknadsprosessen sett frå dykkar ståstad.	- 2)Kvifor meinte oppdrettarane at dei skulle få unntak? - 3)Kan du sei litt om behandlingsprosessen? Er de fornøgde? - 4)Er de fornøgde med de grunngjevinga de gav? - 5)Har søknadane påverka synet ditt på unntaksregelen? Eller på trafikklyssystemet? Klage - 6)Kva reaksjonar har de fått på svara dykkar på klagene? - 7)Har klagene påverka synet ditt på unntaksregelen?
Her ynskjer eg å lære meir om synspunkt på unntaksordninga og §12 (unntaksregelen).	- 8)Førar unntaksregelen til mulegheiter for dykk slik du er det? I så fall kva slags mulegheiter? - 9)Førar unntaksregelen til utfordringar/usikkerheiter for dykk slik du ser det? I så fall kva slags utfordringar? - 10)Kva syns du om kriteria i unntaksordninga?

	- 11)Opplever du at synspunkt blei høyrde/lytta til under utforminga av regelen?
Her ynskjer eg å vete noko om kva konsekvensar regelen inneber.	- 12)Kva for konsekvensar for dykk har unntaksregelen? - 13)Oppfatter du at unntaksordninga har brei oppslutnad i næringa og hjå dykk i Mattilsynet?
Avslutningsvis	- Er det noko de set inne med til slutt, som de ynskjer å sei.

Appendix 5 Interview guide Directorate of Fisheries

Intervjuguide: Fiskeridirektoratet

Introduksjon til temaet: Intervjuet vil handle om unntaksregelen (§12) for raude/gule produksjonsområder frå søknadsrunden i 2018.

Navn: Anonym

Tidsramme: Frå 30 til 45 minutt

Intervjutype: telefon intervju

Tema	**Spørsmål**
Generelle spørsmål for å starte intervjuet og for å lære meir om unntaksregelen.	1) Sei litt om dykkar rolle i forhold til unntaksregelen

Hovuddel av intervjuet

Here ynskjer eg lære meir om bakgrunnen for unntaksordninga og søknadsprosessen sett frå dykkar ståstad.	- 2) Sei litt om kvifor vi fekk unntaksregelen (§12) i forskrifta. Kven var involvert i utforminga? - 3) Kan du sei litt om søknads- og behandlingsprosessen i 2018? I kva grad føler de og dei involverte frå forvaltninga at ordninga har fungert som tiltenkt etter første søknadsrunde? - 4) Har søknadsrunden under eitt (søknadar og klager/tilbakemeldingar) påverka synet ditt på unntaksregelen? Eller på trafikklyssystemet? Klage - 5) Kva reaksjonar har de fått på unntaksregelen no etter første runde? - 6) Har klagene påverka synet ditt på unntaksregelen?
Her ynskjer eg å lære meir om synspunkt på	- 7) Førar unntaksregelen til mulegheiter for dykk slik du er det? I så fall kva slags mulegheiter?

unntaksordninga og §12 (unntaksregelen).	- 8) Førar unntaksregelen til utfordringar/usikkerheiter for dykk slik du ser det? I så fall kva slags utfordringar? - 9) Kva syns du om kriteria i unntaksordninga? - 10) Opplever du at synspunkt blei høyrde/lytta til under utforminga av regelen? Isåfall kva synspunkt?
Her ynskjer eg å vete noko om kva konsekvensar regelen inneber.	- 11) Kva for konsekvensar for dykk har unntaksregelen? - 12) Oppfattar du at unntaksordninga har brei oppslutnad i næringa og hjå dykk i Fiskeridirektoratet? - 13) I kva grad trur du unntaksregelen bidreg til å skape støtte for trafikklysystemet i næringa og ellers?
Avslutningsvis	- Er det noko de set inne med til slutt, som de ynskjer å sei.