°CICERO Shades of Green

SalMar ASA
Green Bond Second Opinion

April 6, 2021

SalMar ASA is a Norwegian aquaculture company and one of the world's largest producers of farmed salmon. Green bond proceeds will finance investments into its operations in Norway. Operating expenditures are not included.

The majority of proceeds will be allocated to the category Sustainable food production, which includes environmentally certified fish farms, water-efficient systems for smolt (juvenile fish) production on land, local processing, as well as technologically innovative developments of offshore fish farming and closed systems at sea.

The carbon footprint of farmed salmon is around 80% lower than that of beef, slightly lower than that of pork, but higher than that of chicken, according to recent studies. The majority of farmed salmon's carbon footprint at harvest is due to the production of feed ingredients. Green bond proceeds will not be used for feed procurement, but may be directed to R&D efforts to reduce the environmental footprint of feed production. SalMar engages with its feed suppliers to ensure sustainable sourcing of feed ingredients. The company has achived a very efficient use of feed, mostly due to low fish mortality.

Airfreight can more than double farmed salmon's carbon footprint. Around one quarter of SalMar's production is tranported by air. Investments into local processing may reduce the volume to be transported, thus increasing transport efficiency.

Aquaculture cases a range of local marine environmental problems. Projects under this framework addresses these issues through environmental certifications and the development of offshore and closed systems.

SalMar has put forward goals for GHG emissions reductions, covering the full value chain (Scope 1, 2 and 3), which will be submitted to the Science Based Targets Initiative. Reporting follows the GRI format, and the company has received a B rating from the CDP the last three years. Scope 3 emissions are included from 2020.

Based on an assessment of the framework's alignment with the Green Bond Principles, the project categories and SalMar's governance, SalMar's Green Bond framework receives the overall **CICERO Medium Green** shading and a governance score of **Excellent**.

SHADES OF GREEN

Based on our review, we rate the SalMar's green bond framework **CICERO Medium Green.**

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in SalMar's framework to be **Excellent.**

GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.

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Contents

1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated April 2021. This second opinion remains relevant to all green bonds and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

Expressing concerns with 'Shades of Green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green	Examples
Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.	Wind energy projects with a strong governance structure that integrates environmental concerns
Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.	Bridging technologies such as plug-in hybrid buses
Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.	Efficiency investments for fossil fuel technologies where clean alternatives are not available

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green bond are carefully considered and reflected in the overall shading. CICERO Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

2 Brief description of SalMar ASA's green bond framework and related policies

SalMar ASA ("SalMar") is Norway's second largest salmon aquaculture company by market value, headquartered on Frøya in Central-Norway. Since inception in 1991, SalMar has developed into an integrated aquaculture enterprise with a production ranging from broodstock and smolt to value-added products and sales. Operations are located in Northern and Central-Norway. In addition, it is present in Iceland through the subsidiary Icelandic Salmon and in Scotland through the associated company Scottish Sea Farms. Because Green Bond proceeds will be directed to operations in Norway, Icelandic Salmon and Scottish Sea Food are not included in this description.

Environmental Strategies and Policies

Sustainability is one of SalMar's most central postulates and considered across its operations. This includes incorporating environmental KPIs both in the contracts for every production cycle at each site, and in the incentive structure for SalMar's corporate management.

GHG emissions

SalMar has set the following targets to reduce GHG emissions by 2030:

- Absolute emissions Scope 1 & 2 by 35% relative to 2018.
- Emissions intensity Scope 1 and 2 by 35% relative to 2018.
- Absolute emissions Scope 3 by 35% relative to 2020.

The targets will be submitted to the Science Based Targets Initiative for approval during 2021. The company reports GHG emissions for Scope 1 and Scope 2 in accordance with The Greenhouse Gas Protocol and IAO 14064-I. Scope 1 and 2 emissions increased slightly in 2020, but emissions intensity decreased by 3%. Since 2014, there has been no clear trend in absolute emissions, but intensity has shown a decreasing trend. Complete Scope 3 reporting begun in 2020, covering feed, transport of intermediate and final products, passenger flights, waste handling, and packaging material. As shown in Table 1, Scope 3 emissions are many times larger than Scope 1 & 2 emissions, which is typical for sea-based salmon farming. Feed use accounts for around 2/3 of Scope 3 emissions, the company informs. No common standard is available for such reporting, but it has been conducted by a third party. The sustainability report is externally verified.

For reducing scope 1 and 2 emission, the company has identified electrification of the value chain as the most important measure. The company also makes effort to exploit local power sources, such as heat in wastewater from nearby industry, and hydropower from water supply to one hatchery. For scope 3, the most important measures are to improve feed efficiency and reduce the footprint of feed ingredients, in addition to reducing transportation emissions through higher degree of local processing, new freezing technology, and new freight routes. The mitigation strategy will be finalized upon submission of the target to the Science Based Targets Initiative.

		2020	2019	2018	2017	2016	2015	2014
Scope 1	tCO2e	13 309	12 619	13 276	12 158	13 621	12 350	11471
Scope 2	tCO2e	2 998	2 522	2 897	3 019	2 399	2 835	4 137
Scope 3	tCO2e	619 805						

Intensity Scope 1+2	kgCO2e/ton produced biomass[1]	86.7	89.9	95.7	91.9	121.5	97.6	97.1

Table 1: GHG emissions and intensity

Feed

Feed use accounts for the vast majority of farmed salmon's GHG footprint at harvest (Winther et al. 2020). Effective feed utilization is one of the company's KPIs, measured as the economic Feed Conversion Ratio (eFCR). This is also an important determinant of the final product's GHG footprint. SalMar's 2025 target for this metric is below 1.13. The achieved ratio was 1.18 in 2018, 1.19 in 2019, and 1.16 in 2020, already significantly below the average for the Norwegian salmon aquaculture industry of 1.32 (Winther et al. 2020, based on 2017 figures). A prime reason for the high efficiency is the high survival rate (see below). In addition, the company has a focus on optimizing feeding, and has invested in remotely controlled feeding centers.

SalMar's largest feed supplier is Cargill Aqua Nutrition (CAN), delivering 64-73% of its supply during the last three years, with the remainder coming from Skretting. Soy protein concentrate (SPC) from Brazil make up 23% of the feed from CAN and 14% of the feed from Skretting. It is certified to not originate from land that has been recently deforested, by ProTerra (see Background). In addition, the suppliers of SPC have recently committed to become deforestation free across their operations (see Background). The feed used for SalMar's organic salmon (from Skretting) contains only 3% SPC, which is organically produced in China. SalMar is engaged in dialogue with its feed suppliers with the aim of contributing to reduced deforestation risk in the Brazilian soy industry.

Marine ingredients in feed used by SalMar are either MSC certified or comply with the MarineTrust, or equivalent schemes. The efficiency in use of marine ingredients can be assessed through the Fish Forage Dependency Ratio (FFDR), which quantifies the dependency on wild fish stocks. SalMar's average ratios the last few years have been well below the criteria required for ASC certification, see Table 2.

	ASC criterion	2020	2019	2018	2017
Fishmeal	<1.2	0,49	0.41	0.51	0.59
Fish Oil	<2.52	1,68	2.24	1.66	1.60

Table 2: Fish Forage Dependency Ratios (kg wild fish per kg salmon produced)

The Norwegian feed suppliers have recently joined the initiative "Råvareløftet" which seeks to accelerate the development of new raw materials for fish feed to reduce its environmental footprint. SalMar has R&D licenses in operation where innovative feed ingredients are tested in collaboration with its feed suppliers.

Transport

The majority of SalMar's production volume in 2020 was transported to market by road (74%), followed by air (24%) and sea (2%). Around 90% of produce is exported, the majority to the EU , followed by Asia and North America. As part of the sustainability strategy, SalMar is working on several new transport projects involving combinations of sea, rail, and road transport. It became the first aquaculture company to trial transport to the European market by sea. It is also engaged in R&D projects on new freezing technology, which is key to serving the Asian and North American markets without airfreight. The company has a strategy to increase processing before shipment, which reduces the transport volume and hence emissions. It has set a target that the share of harvest volume sent to local value-added processing should exceed 42.5%. The current share is 42%, up from 38% in 2018. The average for Norwegian aquaculture is around 20%. The company estimates that transport emissions

[1] Prior to 2017: per ton live weight fish.

were reduced by 21% (46 000 tons CO2e) by local processing compared with delivering everything as whole fish. For some products, ice has been replaced by dry ice, further reducing transport volume and weight.

Electrification

SalMar is working on connecting more farms to the electricity grid, and electrification of vessels. 47% of active sites were supplied with electricity form the grid in 2020, up from 44% in 2019. In 2016, the company put the world's first fully electric aquaculture workboat into operation, and in 2020 it leased the world's first hybrid battery wellboat. In order for the company to reach its emission reduction targets for 2030, SalMar's ambition is to shift towards a fleet of 100% electric and hybrid vessels in the next decade.

Certifications

SalMar has a target that all its farms shall be certified by the Aquaculture Stewardship Council (ASC) or Debio.

The ASC is an independent organization with a mission to bring aquaculture one step closer to sustainability and social responsibility (see Strengths). At the end of 2020 SalMar had 33 ASC certified farms, corresponding to 48% of active sites, up from 28% in 2017. Of all salmon farms in Norway in 2019, 19% were ASC certified.[2]

SalMar is the world's largest producer of organically farmed salmon, as defined in accordance with EU directives and approved by Debio (see Strengths).

Survival rates

The post-smolt survival rate is both an indicator of fish welfare, and an important determinant of the feed efficiency and thus GHG footprint of the final product. SalMar has a target of at least 97% survival rate, and actual rates have been close to this figure, see Table 3, which is considerably better than its competitors in Norway. This has been achieved while phasing out antibiotics, reaching zero use in 2020. The company believes that optimal location is the key to fish welfare. This entails locating in relatively exposed waters, which give better biological conditions than more sheltered waters.

2020	2019	2018	2017
95.6%	95.3%	94.1%	93.8%

Table 3: 12-month rolling survival rate.

Escapes

SalMar has a goal of zero escaped fish. It is working on both improving routines and procedures as well as development of more secure equipment. In 2021, it will invest heavily in new nets to reduce escape risk, following two years of testing in collaboration with the net supplier. SalMar has also participated in the revision process for the technical standard for floating aquaculture installations, which aims to reduce escapes across the industry. Finally, SalMar is engaged in several partnerships to monitor and improve the situation for wild salmon, including a project to develop technology enabling tracing of escaped salmon.

	2020	2019	2018	2017
No. of incidents	11	6	7	7
No. of fish	9 135	5 907	15 903	1 951

Table 4: Escapes from SalMar's operations in Norway[3].

[2] https://www.barentswatch.no/en/havbruk/certifications

[3] Annual figures for Norway during the same period ranged between 17 000 (2017) and nearly 300 000 (2019). In the peak year (2006), nearly 1 million salmon escaped.

Sea lice

Production licenses in Norway stipulate a maximum number of mature female sea lice per fish. For most areas, the threshold is 0.5, while for certain licenses and in certain areas, it is 0.2. Table 5 shows the share of SalMar's reported observations that exceeded the threshold. The ASC has a lower limit of only 0.1. The average number of lice per fish across all operations was 0.17 in 2018, 0.15 in 2019, and 0.13 in 2020.

2020	2019	2018	2017	2016	2015
2.2%	3.3%	0.3%	2.2%	5.5%	6.5%

Table 5: Share of reported lice observations that exceeded government threshold.

The company's prioritized strategy for combating sea lice is through preventative measures, followed by non-medical treatment.

Seabed environment

According to regulations, sediment tests from the seabed must receive the score "very good" or "good" for new production cycles can start. SalMar's target is that all its operational sites achieve these scores. A strategy for achieving this is to relocate some farms to more suitable locations.

2020	2019	2018	2017
93%	97%	85%	82%

Table 6: Percentage of seabed inspections with satisfactory scores.

SalMar has eliminated the use of copper as anti-fouling for its net pens, as it is a toxin affecting the local marine environment.

Waste and wastewater

SalMar is working on several initiatives to reduce its volume of plastic waste, through both reuse and recycling. Most of the company's smolt production (accounting for 86% of biomass transferred to sea in 2020, up from 73% in 2018) use recirculating aquaculture systems with approximately 97% reuse of water, thus minimizing water use and wastewater. The remaining wastewater is treated before discharge, and the resultant sludges is utilized for soil improvement or biogas production. SalMar uses an innovative approach to processing, known as pre-rigor. This enables processing directly after harvest, which increases shelf-life, thus reducing food waste. All byproducts (off-cuts, offals, etc.) from the harvesting and processing of salmon are sent to Nutrimar who produce salmon oil and meal which are sold as ingredients for aquaculture and animal feed. The company has a focus on developing more environmentally friendly packaging materials and increasing the share of reusable boxes for transport.

Offshore fish farming

SalMar owns the world's first offshore fish farm, which is a full-scale pilot facility designed to test out both the biological as well as the technological aspects of offshore fish farming. It also has plans for constructing a farm for the open ocean, i.e., even further from shore. Moving offshore has potential to reduce environmental footprint, improve fish welfare, and reduce competition for space in the fjords.

Risk reporting and integration

SalMar has reported to the Climate Disclosure Project since 2018 and has received the score B each of the three years[4]. Its annual reports implement the format of the Global Reporting Initiative (GRI), with some reported deviations from its requirements (see Annual Report 2019).

[4] https://www.cdp.net/en/responses?utf8=%E2%9C%93&queries%5Bname%5D=SalMar

Climate risk analysis is an integrated part of the company's risk assessments, including resilience to the physical impacts from climate change. SalMar aims to implement the TCFD recommendations within the next few years.

SalMar has earlier this year secured a sustainability linked revolving credit facility. The interest paid is linked to the following KPIs: survival rate, eFCR, share of local processing, and GHG intensity (Scope 1 and 2).

The Collier FAIRR protein producer index 2019[5] ranks SalMar 7th in terms of risk and 9th in terms of risk + opportunity out of the 60 largest global meat, dairy and aquaculture producers, categorizing it as medium risk. In both cases, it is ranked lowest among the five Norwegian aquaculture companies included. Sustanalytics rates the company as high risk (33.1)[6]. This is the third highest risk score among Norway's six largest aquaculture companies, and on the 68th percentile among all companies assessed.

Use of proceeds

An amount equal to the net proceeds of the Green Bonds will finance or refinance, in whole or in part, investments undertaken by SalMar or its subsidiaries (excluding Icelandic Salmon and Vikenco). SalMar's associated company Scottish Sea Farm is not covered by the Green Bond Framework. Green Project categories defined in Table 7: Sustainable food production; Renewable energy; Clean transportation; Water and wastewater management; Waste management & circular economy adapted products, production technologies and processes. The company informs that the majority will be used for the first category. Investments qualify for refinancing with a maximum 5 years look-back period prior to the Green Bond issuance.

Green Bond net proceeds will not be allocated to operating expenditures. Investments related to fossil fuel machinery, equipment, or energy production are not eligible for Green Bond finance.

Selection

The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the governance process.

SalMar has established an internal Green Bond Committee (GBC), responsible for the process of selecting and evaluating Green Projects, consisting of members from Management, Sustainability, Operational/Technical, Quality and Finance functions. It will convene every six months or when otherwise considered necessary. Experts and representatives within SalMar will present a list of potential Green Projects to the GBC, who will decide by consensus whether the projects are in line with the Green Project Criteria (Table 7). Decisions will be documented and filed. If a Green Project is sold, or for other reasons loses its eligibility, funds will then follow the procedure defined in the Management of proceeds section below until reallocated to other eligible Green Projects.

Management of proceeds

CICERO Green finds the management of proceeds of SalMar to be in accordance with the Green Bond Principles.

A Green Portfolio to track the allocation of net proceeds from Green Bonds to Green Projects, ensuring that an amount equal to the Green Bond net proceeds support the financing of Green Projects or to repay Green Bonds. Proceeds will be allocated to a portfolio of disbursements. In the event of a temporary residual of unallocated

[5] Available from www.fairr.org.
[6] https://www.sustainalytics.com/esg-rating/SalMar-asa/1041817271/

proceeds, it will be placed in a cash account until allocated. The management of proceeds will be reviewed by an external auditor appointed by SalMar.

Reporting

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs. Procedures for reporting and disclosure of green finance investments are also vital to build confidence that green finance is contributing towards a sustainable and climate-friendly future, both among investors and in society.

SalMar will annually and until maturity of the Green Bonds issued, provide investors with a Green Bond Report, available on the company's website. Allocation reporting will include

i. A summary of Green Bond developments.
ii. The outstanding amount of Green Bonds issued.
iii. The balance of the Green Projects in the Green Portfolio, any temporary investments of unallocated proceeds and the available headroom in the balance of the Green Portfolio (if any).
iv. The distribution between new financing (projects completed or taken into use during or after the Green Bond reporting period) and refinancing (projects completed prior to the Green Bond reporting period)
v. The total aggregated proportion of Green Bond net proceeds used per Green Project Category

Impact reporting aims to disclose the environmental impact of the Green Projects. Impact reporting will, to some extent, be aggregated. SalMar takes the reservation that not all related data can be covered and that calculations therefore will be on a best effort basis. The impact assessment will, if applicable, be based on the Key Performance Indicators (KPIs) listed in SalMar's Green Bond Framework. The methodology for calculating these metrics will be disclosed. Most of the metrics are also reported in the company's sustainability report, which is reviewed and verified by a third party. The Green Bond Committee will oversee the reporting. The CFO/COO is responsible for managing and keeping track of the Green Portfolio.

3 Assessment of SalMar ASA's green bond framework and policies

The framework and procedures for SalMar's green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where SalMar should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in SalMar's green bond framework, we rate the framework **CICERO Medium Green.**

Eligible projects under the SalMar ASA's green bond framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed and that the selection process should be "well defined".

Category	Eligible project types	Green Shading and some concerns
Sustainable food production	**Sustainable coastal fish farms** Investments in fish farms certified, or in preparation to become certified, by the ASC or Debio salmon standards. **Sustainable offshore fish farms** Investments in offshore fish farms. **Local and sustainable processing** Investments in processing facilities that are certified, or in preparation to become certified, according to the Chain of Custody (CoC) standard for ASC products.[7] **Sustainable facilities for smolt production** Investments in RAS facilities for smolt production and closed net pens. **Environmental management and fish welfare**	**Medium Green** **Sustainable coastal fish farms** ✓ Fish escapes pose a serious threat to wild salmon stocks, as the farmed fish modify the gene pool and outcompete local species. ✓ The high concentration of salmon in farms allow sea lice to thrive, which also pose a threat to wild salmon stocks. ✓ Chemicals used for delousing may negatively affect wild species such as cod and shrimp, and thus coastal fisheries. ✓ The ASC has safeguards on these local environmental problems by setting stricter limits than national

[7] The CoC standard ensures that ASC certified seafood originates from a farm certified by the ASC.

- Investments related to the protection, restoration and enhancement of ecosystems and biodiversity, such as escape prevention.
- Investments related to improvements in fish welfare, including sea lice management.

Research and development (R&D)
R&D investments (capitalized R&D) aimed at improving the environmental performance of feed and feed ingredients, fish farms and processing.

regulation but has been criticized for tolerating 300 escaped fish per production cycle and for a lenient limit on hydrogen peroxide.

✓ Debio's organic label requires minimizing impacts on the local marine environment and wild salmon. Feed can only contain organic agricultural products or sustainable marine ingredients (see Strengths).

✓ The use of certifications schemes thus mitigates the environmental risks associated with aquaculture but do not provide certainty about outcomes.

Sustainable offshore fish farms

✓ Stronger currents and more stable temperatures provide more stable growth conditions, which may increase feed efficiency and fish welfare.

✓ Sea lice treatment can be avoided, greatly improving fish welfare.

✓ Stronger currents also provide increased dilution of waste and pollution.

✓ Increased distance to wild salmon in coastal areas may reduce the negative consequences of sea lice and escapes.

✓ Moving aquaculture offshore would reduce the potential for conflict with coastal fisheries.

✓ SalMar reports good results so far in terms of fish welfare, survival, sea lice levels, and product quality.

✓ Offshore technology could unlock new areas globally for salmon farming, enabling production closer to markets that are currently served by airfreight.

✓ However, increased distance to shore makes electrification more difficult. SalMar's offshore fish farm (Ocean Farm 1) currently runs on diesel generators, but the company is

looking into hybrid and other alternatives for future units. Investments directly related to diesel generators are excluded from this framework.

- ✓ Escape incidents have occurred in relation to offloading, but SalMar are making modifications to mitigate this before the next production cycle.

Sustainable facilities for smolt production

- ✓ RAS are land-based facilities that reuse approximately 97% of water, thus minimizing water use and wastewater.
- ✓ Closed net-pens are closed tanks placed in the sea where the water is filtrated and pumped in from below. SalMar will use this unit to produce larger smolt, transferring normal smolt into the unit and producing it up to around 800g before transferring the smolt to open net-pens.
- ✓ Energy use of closed net-pens is reduced compared with land-based RAS, while interaction with the marine environment is reduced compared with open net-pens.

Local and sustainable processing

- ✓ Investments relating to Chain of Custody (CoC) standard can be considered supplementary to those relating to ASC certification.
- ✓ Increased local processing will reduce transport volumes. The company have estimated significant GHG savings from this (see Section 2).

Environmental management and fish welfare

- ✓ Escape prevention and sea lice management are the most important

		measures to protect wild salmon stocks. ✓ Improved fish welfare will also contribute to lowering the carbon footprint of the final product, through increased feed efficiency.
Renewable energy	**Electrification and renewable energy** • Investments in the electrification of fish farming sites by connecting them to onshore power. • Investments in the installation of renewable energy technology and battery packs to power fish farms.	**Dark Green** ✓ The aquaculture industry is still partly dependent on fossil fuels. Investments to electrify installations, in renewable energy production, and in energy efficiency are important steps in the direction of making it more climate friendly. ✓ Renewable energy includes solar, wind, and wave power, the company informs.
Clean transportation	**Low carbon vessels** Acquisition of fully electric or hybrid aquaculture vessels, or investments in the upgrading of vessels with battery packs. **Low carbon infrastructure** Investments in infrastructure supporting low carbon transportation, such as electric charging points.	**Medium Green** ✓ Electrification of vessels is an important measure to reduce Scope 1 GHG emissions in aquaculture. ✓ Fully electric vessels are considered Dark Green, while hybrid vessels are considered an energy efficiency improvement of fossil technology, thus Light to Medium Green depending on the level of improvement. ✓ The company informs us that they are currently evaluating the improvement achieved by the world's first hybrid wellboat.
Water and wastewater management	**Wastewater treatment** Investments in measures that improve wastewater treatment, leading to reduced volumes of wastewater or improved water quality. Measures may include technical solutions leading to more concentrated wastewater to facilitate its disposal or upcycling for other productive purposes, such as fuel for biogas and soil fertilizer. **Water-use efficiency**	**Medium Green** **Wastewater treatment** ✓ Discharge of effluents and wastewater to the marine environments can cause toxic algae blooms and negative effects on the local ecosystem. Investments under this category can contribute to reducing such problems. ✓ Using sludge for biogas is a renewable form of energy production and is considered Dark Green.

	Investments related to improving freshwater use efficiency through technological improvements at the hatcheries, harvesting and processing plants (minimum 30% efficiency improvement), including for example plants implementing RAS technology.	✓ Using sludge for fertilizer would improve the ecosystem where it is applied, and avoids emissions associated with nitrogen fertilizer. **Water-use efficiency** ✓ These measures are important for limiting both freshwater use and wastewater discharge. RAS technology reduce water use drastically compared to traditional flow-through systems and is now standard for new installations in the industry. Recirculating rates vary somewhat between different RAS systems.
Waste management and circular economy adapted products, production technologies and processes °C °C	**Waste management** Investments in measures contributing to an efficient management of waste. These measures will aim to: • Improving the sorting of materials at our sites. • Reducing biological and plastic waste. • Increase the reuse of packaging and used fish farming equipment. **Circular economy adapted products, production technologies and processes.** Investments in the development of resource-efficient products and solutions, such as new net and packaging designs with a significantly higher rate of recycled plastic or significantly higher rate of material with a lower carbon impact compared to conventional alternatives.	**Medium to Dark Green** ✓ Projects under this category are expected to contribute to increased resource efficiency and reduction in waste to landfill or incineration. ✓ A circular economy is an integral part of a low-carbon future. Projects under this category are steps in that direction.

Table 7. Eligible project categories

Background

Aquaculture is a booming industry and has surpassed fisheries as the main provider of seafood globally[8]. The industry sits within a complex map of regulatory contexts and voluntary certification schemes.

The carbon footprint of farmed salmon is around 80% lower than that of beef, slightly lower than that of pork, but higher than that of chicken, according to recent studies[9]. A SINTEF report from 2020 found it to have larger footprint than all other Norwegian seafood products assessed[10]. The footprint (at slaughter) is made up almost

[8] Source : https://www.consultancy.uk/news/13156/aquaculture-booms-amid-fears-of-overfishing
[9] E.g., http://www.fao.org/3/ca7130en/ca7130en.pdf and Winther, U., Hognes, E.S., Jafarzadeh, S. & Ziegler, F. (2020). Greenhouse gas emissions of Norwegian seafood production in 2017. SINTEF Ocean AS. For the comparison with other foods, emissions relating to land-use were excluded.
[10] Source: Ibid

entirely by the feed production[11]. Except for airfreighted salmon (where feed is of lower relative importance), feed represents between 75-83% of total GHG emissions of salmon delivered to the wholesaler. Land-use change accounts for 28% of emissions at slaughter, and the vast majority is due to soy from Brazil, as its cultivation is linked to deforestation. Soy protein concentrate (SPC) make up 10-26% of the feed produced in Norway, and most of it is imported from Brazil but certified according to ProTerra, which ensures that it is not grown on land converted from native vegetation after 2008. This scheme has relatively strict criteria, but some weaknesses on transparency[12]. It requires physical segregation of certified and non-certified soy, unlike some other forms of certification. A problem with all certification schemes is that major soy producers currently only certify a small share of their production, while the rest may contribute to deforestation. Demand for soy from Brazil, even if certified, risks displacing non-certified production to new agricultural areas. Certification is therefore not seen as a complete safeguard against deforestation risk. The Brazilian SPC producers recently responded to pressure from the Norwegian aquaculture industry by committing to not purchasing soy grown on land in the Brazilian Serrado deforested after August 2020 or on land in the Amazon deforested after 2006. A system for monitoring, reporting, and verification has been agreed in cooperation with ProTerra and WWF Brazil. SPC is a specialized product for the aquaculture industry. Now that SPC producers are taking the lead in becoming deforestation-free, it means that the deforestation risk is lower in the aquaculture industry than in other animal protein industries that have Brazilian soy in their supply chains, as none of the major soy traders have made similar commitments.[13] However, among these major soy traders is the parent company of SalMar's main feed supplier, Cargill Inc, who has been accused of large-scale deforestation[14] (see Pitfalls).

Demand for marine ingredients in salmon feed puts pressure on wild fish stocks. Their use has been reduced over the last decade, as they have been replaced by vegetable ingredients, particularly soy. SalMar's procurement policy aims to ensure that marine ingredients originate from sustainable fisheries.

It is important to note that the two most important drivers of GHG emissions associated with salmon farming - feed procurement and transport to market - will not be financed under SalMar's Green Bond Framework, as it excludes operating expenditures. To the contrary, the framework includes investments aimed at these drivers, including investments related to R&D aimed at improving the environmental performance of feed, and investments into local processing.

Aquaculture also causes a range of local environmental problems:

- Fish escapes pose a serious threat to wild salmon stocks, as the farmed fish modify the gene pool and outcompete local species.
- The high concentration of salmon in farms allows sea lice to thrive, which also pose a threat to wild salmon stocks.
- Chemicals used for delousing may negatively affect wild species such as cod and shrimp, and thus coastal fisheries.
- Effluents and waste negatively affect life on the seabed around fish farms and may contribute to toxic algae blooms.
- Medicines may negatively affect shrimp and other crustaceans.

The SINTEF report highlights that increasing problems with disease and sea lice have increased the carbon footprint of farmed salmon, through reduced feed efficiency and increased use of service vessels for treatment.

[11] Source: Regnskogsfondet og Framtiden i Våre Hender 2017. Fra brasiliansk jord til norske middagsbord. En rapport om soya i norsk laksefôr

[12] Regnskogsfondet & Framtiden i Våre Hender (2017). Fra brasiliansk jord til norske middagsbord. En rapport om soya i norsk laksefôr.

[13] https://www.reuters.com/article/us-brazil-environment-soy-idUSKBN28P2I3

[14] http://www.mightyearth.org/wp-content/uploads/Mighty-Earth-Report-Cargill-The-Worst-Company-in-the-World-July-2019.pdf

Governance Assessment

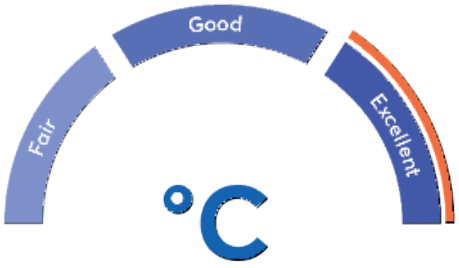
Four aspects are studied when assessing the SalMar's governance procedures: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

SalMar has put forward goals for GHG emissions reductions, covering the full value chain (Scope 1, 2 and 3), which will be submitted to the Science Based Targets Initiative. Reporting follows the GRI format, and the company has received a B rating from the CDP the last three years. From 2020, reporting includes Scope 3 emissions, which account for the vast majority of total emissions. TCFD recommendations will be implemented over the next few years, the company plans. The company has set ambitious targets for all the relevant marine environmental impacts, and reports results that generally compare favorably with those of the rest of the industry. Sustainability concerns appear to be integrated into the core business strategy. The company actively addresses supply chain emissions, most importantly in the form of feed and transport to market. It engages in dialogue with feed suppliers to address the deforestation risk associated with soy cultivation in Brazil.

While emissions intensity has decreased slightly the last few years, absolute emissions have not. Thus, additional efforts are needed over the coming decade to achieve the company's target. As Scope 3 reporting only started from 2020, progress cannot be judged yet.

SalMar aims to have all sites certified by either the ASC or Debio by 2025, ensuring adherence to stringent environmental standards. The company is currently the world's largest producer of organic salmon.

SalMar has established a Green Bond Committee that will select and evaluate green projects. Decisions are by consensus, and the Sustainability division is represented. Only investments are eligible, not operating expenditures. The company has committed to reporting on a range of indicators of impact from the green projects,



The overall assessment of SalMar's governance structure and processes gives it a rating of Excellent.

Strengths

The framework includes two technological development projects that have the potential to mitigate the some of the environmental impacts of traditional salmon aquaculture. The first is offshore salmon aquaculture, where SalMar is a leading innovator. The second are closed net-pens, which are closed systems placed in the sea. While the company plans to use these for a limited stage of fish growth, the technology can in principle be used for producing fish up to harvest weight. Potential environmental benefits of the two technologies are listed in Table 7.

A substantial share of Green Bond proceeds will finance fish farms certified, or in preparation to become certified, by the Aquaculture Stewardship Council (ASC). The ASC is regarded as the strictest voluntary certification

scheme on environmental criteria (excluding feed).[15] Its standards are stricter than Norwegian regulation, which is already stricter than other national regulations.[16] Environmental indicators include:

- Sea lice levels
- Escapes
- Virus related mortality
- Predator interactions
- Medicinal treatments
- Sustainable feed ingredients
- Detailed sediment testing

Debio's organic label[17] requires minimizing impacts on the local marine environment and wild salmon. Feed ingredients must come from organic agriculture, off-cuts from sustainably managed fisheries, or fish that is not suitable for human consumption. The share of marine ingredients is higher than in standard feed, and the share of soy lower.

Weakness

SalMar transports around one quarter of its produce to market by airfreight. Airfreight over long distances can more than double the product's footprint (Winter et al 2020) and there has been a large increase in airfreight of Norwegian salmon in recent years, particularly to the USA and Asia. The report recommends partially or fully shift supply chains away from airfreight.

Pitfalls

Deforestation in Brazil has constituted a major part of the lifecycle GHG emissions of farmed salmon. The projects eligible under this framework do not represent a direct deforestation risk. Firstly, because feed procurement itself is not financed under the framework. Secondly, the deforestation risk in the physical supply chain for salmon aquaculture has been reduced as the suppliers of soy to this industry have pledged to become deforestation free (see Background). However, investors may want to note that one of SalMar's feed suppliers, Cargill Aqua Nutrition, is owned by the US company Cargill Inc. While Cargill Aqua Nutrition sources its soy from the suppliers that have committed to become deforestation-free, Cargill Inc. has not made the same commitment. To the contrary, it has been accused of massive deforestation, among other things, and been named "the worst company in the world" by the environmental NGO Mighty Earth[18]. SalMar engages in dialogue with its feed suppliers with the aim of contributing to reduced deforestation risk in the Brazilian soy industry.

As with all technological innovations, there is uncertainty whether the potential benefits of offshore and closed net-pen aquaculture will be realized, and whether costs will be conducive to widespread employment. In particular offshore fish farms have high construction costs. There have been escape incidents relating to offloading of fish at SalMar's pilot offshore unit, but the company are taking measures to mitigate this risk. Lessons learned will be used in future projects and the aim is for offshore farms to be more secure than coastal farms.

[15] https://www.bestfishes.org.uk/buying-salmon/ The comparison does not include Debio, but the Organic Soil Association is assessed to have the strictest criteria on feed.
[16] Vormedal, I. and Gulbrandsen, L. (2018). Business interests in salmon aquaculture certification: Competition or collective action? Regulation & Governance.
[17] debio.no/akvakultur
[18] http://www.mightyearth.org/wp-content/uploads/Mighty-Earth-Report-Cargill-The-Worst-Company-in-the-World-July-2019.pdf

Appendix 1:
Referenced Documents List

Document Number	Document Name	Description
1	SalMar ASA Green Bond Framework	
2	SalMar ASA Annual Report 2019	
3	Draft Sustainability Report 2020	Draft report in Norwegian received 17.03.21. Not yet published or externally verified.

Appendix 2:
About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).