Policy on freshwater use and wastewater discharge

Freshwater is considered a renewable resource, however in some regions of the world the use of freshwater may exceed the ability of natural processes to replace it. When this combination occurs, situations of water scarcity can occur which can impact negatively society and business.

Freshwater is important for Mowi as it is used:

- directly in the initial stages of farming to produce smolts prior to sea transfer. Mowi continues to invest where possible to improve water use efficiency through technological solutions (such as Recirculating Aquaculture Systems – RAS) at our freshwater farming sites. For more information see our Green Bond Impact report where green projects related to our freshwater facilities are described both in terms of investment (CAPEX) and impact (Green Bond impact report 2020 (azureedge.net)
- directly at our processing plants to keep high hygienic standards and
- indirectly from the use of agricultural feed raw materials. Mowi uses certification schemes (e.g Proterra), where available, to ensure agricultural raw materials are sourced from areas where water management is considered. In addition, Mowi engages directly with key vegetable feed raw material suppliers to encourage work on regenerative agriculture.

Mowi's freshwater withdrawal and consumption

The majority of freshwater withdrawal in our business is used to produce the initial life stages of Atlantic salmon. This freshwater withdrawal is returned to its source in almost its entirely (in flow-through systems) or reused (in our Recirculating Aquaculture Systems), which therefore reduces our water consumption significantly (see Table 1). As Mowi is a fully vertically integrated animal protein producer, our smolt freshwater production in done in-house. Such production is done in countries and areas with no water scarcity/no water stress areas.

We use the World Resource Institute water risk map to run a risk-assessment and help us identify if any of freshwater farming sites, feed plants and processing plants are located in areas of medium or high risk. All our farming regions are located in a low risk rating both from a water stress and water depletion perspectives (Aquaduct Water Risk Atlas 2021. Retrieved from: www.wri.org/aqueduct).

Regarding our downstream operation, three of our processing plants (one plant in France, one plant in China and one plant in Vietnam, see Table 2) are located in countries/areas of medium or high risk and therefore our conservation efforts are directed there.

Mowi's freshwater governance

Freshwater use and efficiency is governed through our sustainability strategy, Leading the Blue Revolution Plan (Mowi-Sustainability-Strategy_May_2022_k2.pdf (azureedge.net). The strategy implementation across our business units is driven by Mowi's Global Sustainability Networks which are run by the Chief Sustainability Officer (CSO) who is member of the Group Management Team and reports directly to the CEO. A Strategic Sustainability Network is also in place as part of our governance groups to support strategic discussions on freshwater related risks and opportunities for the Group. The management team and the strategic networks have an oversight of the reported quarterly and annual freshwater use and ongoing initiatives to improve efficiency.

Mowi's freshwater use is audited by a third-party and reported according the GRI 303-3.

Regarding capex expenditure on water use efficiency projects please see our green bond report 2021 (Green Bond impact report 2020 (azureedge.net)). During 2021 Mowi's Green Register of eligible green projects continued to grow, with three new projects added. All three projects relate to freshwater facilities completed in 2021 and which feature recirculating aquaculture systems (RAS) that drastically reduce dependency on external freshwater resources. Furthermore this technology also enables more of the production cycle to take place in a controlled environment on land, resulting in larger smolt being released into the sea, thereby shortening the salmon's time in sea and reducing biological risk and environmental footprint. Allocated proceeds account for 121 million m^3 per year of freshwater savings compared with equivalent-sized flow-through facilities and 36 MEUR of allocated proceeds.

Mowi's target on freshwater use

Mowi aims for a continuous improvement on water use efficiency in all our business areas. Our time-bound targets are set towards our business units which are located at water-stressed areas. None of our farming or feed business units are located in water-stressed areas and therefore our target is applicable to our Sales and Marketing business area only which covers our secondary processing plants. We have three processing facilities that operate in areas with medium-high water scarcity at risk: Mowi Vietnam, Mowi Shanghai and Mowi France (Boulogne).

Mowi aims to achieve, by 2025, a reduction of 10% on the intensity of water withdrawal at our processing plants located in medium-high water scarcity risk, using 2018 as a reference year. This target has been set in 2021. Our targets are directed to water withdrawal as water consumption is negligible.

Mowi focus on increasing freshwater use efficiency at all processing plants without compromising the need of using water to maintain the high hygienic standards at the plants.

Responsible freshwater management in our feed supply chain

Mowi's work towards a responsible freshwater use also extends to our vegetable raw material suppliers. Using the World Resource Institute water risk map all vegetable raw material suppliers located in areas of overall medium and high water risk are identified. Mowi discloses the type and percentage of inclusion of all feed raw materials in the Integrated Annual Report (Planet section). From these 11.5% of volume purchased originates from countries classified as high or extremely high stressed-water areas (overall water risk from the Aquaduct mapping).

Mowi is investing in sustainable feed production. 100% of Mowi's soy sourcing is from either Proterra, Europe Soya or Organic certified sources. These standards include good agricultural practices including nutrient and water management. Water management requirements include conservation of natural water resources and best practices for water management. In addition, soil and crop management requirements, including the use of cover crops, management of vegetation, management of crop succession and rotation, are core to the Proterra standard (for more information see The ProTerra Network | ProTerra Foundation). Mowi is therefore investing in sustainable feed production by paying extra for Proterra certified soy which supports farmers adhering to best agricultural practices.

Our suppliers of vegetable feed raw materials are asked to complete Mowi's water risk assessment to clarify their full risk profile and understand their actions to minimize risks linked with water use, such as water infrastructures, sustainable water withdrawal, protection from pollution, conserving buffer zones and proper irrigation. In this way we make clear that suppliers are expected to use water responsibly. We also ask these suppliers to have a water use reduction target (this is done through our supplier relationship management platform). If vegetable feed raw materials are rated in the medium or high risk under Mowi's water risk assessment we initiate an engagement program with those specific suppliers.

Mowi has also established a partnership, Aquaculture Dialogue on Sustainable Soy Sourcing from Brazil, to advance sustainable sourcing of soy using the Proterra standard (which includes water management requirements).

Wastewater discharge

Mowi follows wastewater discharge limits (discharge volume and quality) per national regulations. All our processing plants discharging wastewater to freshwater do it through third-party wastewater treatment plants where regulatory limits are set on water quality parameters (this are set by national environmental governmental agencies).

In 2021, all wastewater from our processing plants was discharged to third parties (1 822 477 m3; therefore zero m^3 discharged to freshwater environments). Our freshwater production units, used to produce smolt, discharged 80 123 569 m^3 back to freshwater environment.

In 2021, none of our processing plants incurred on penalties related with wastewater discharge (either volume or quality). When limits on discharge volume and/or quality are above regulatory limits we take action[1] to normalize metrics as soon as possible. We also run a risk-assessment using the Aquaduct physical risks quality measures and three of our processing plants (located in the Faroes, Vietnam and China) were classified at a high risk.

Our target on wastewater discharge to freshwater is to comply 100% with the volume and quality regulatory limits. When considering wastewater discharge directly to freshwater environments (i.e. surface wastewater discharge), we follow as a minimum the world bank wastewater limits for COD, BOD, TN and TP, where the limit is applicable to the specific geography.

Mowi's actions towards the implementation of this policy:

1. Prioritize technology (such as RAS) in our smolt and post-smolt production to reduce the dependency of freshwater at the initial stages of salmon farming
2. Work towards an improved efficiency of freshwater use at our processing sites by:
    - developing water efficiency plans at our processing plants.
    - stimulating innovative solutions to reduce water withdrawal or reuse
    - sharing solutions and efficiency improvement plans amongst business units
    - reporting data on freshwater use as requested in the sustainability reporting
3. Ensure that Mowi's operations do not compromise the right of local communities to access water
4. Treat wastewater effectively following as a minimum national regulations
5. Raise awareness on effective water stewardship by supporting our employees to
6. understand this policy
7. Engage with vegetable feed raw material supplier to understand their water risk profile and actions to reduce risk
8. Work in partnerships to optimize freshwater use efficiency. Over the last years, Mowi has been a member of ContrAqua, a centre for research-based innovation (SFI) doing research on closed-containment aquaculture systems. The main goal is to develop technological and biological innovations that will make closed systems a reliable and economically viable technology. For more info see About - CtrlAqua.

Table 1

Table 1. Water withdrawal, consumption and percentage of freshwater use from water-stressed areas for Mowi Group and its three business areas: Farming, Feed and Sales & Marketing. For sake of clarify, Farming has been split into our freshwater production and primary processing plants. Our Sales & Marketing business areas (S&M) include our secondary processing plants.

2021 data	Mowi Group	Mowi Farming (Freshwater production)	Mowi Farming (primary processing plants)	Mowi Feed	Mowi S&M (secondary processing plants)
Freshwater withdrawal (x1000 m3) • Total • By Source: • *Surface water* • *Third party water* • *Ground water*	Total-387 106 Surface – 339 500 Third Party – 26 480 Ground water – 21 126	Total-383 445 Surface – 339 420 Third Party – 23 759 Ground water – 20 267	Total- ~~2 462~~ 1 760 Surface – 4 Third Party – 1 658 Ground water – ~~839~~ 98	Total- 344 Surface – 76 Third Party – 269 Ground water – 0	Total- ~~853~~ 1555 Surface – 0 Third Party – ~~833~~760 Ground water – ~~20~~795
Freshwater consumption (x1000 m3)*	Total- 493 Surface – 182 Third Party – 255 Ground water – 56	Total-211 Surface – 155 Third Party –4 Ground water – 52	Total- 94 Surface – 3 Third Party – 87 Ground water – 4	Total- 185 Surface - 23 Third Party – 162 Ground water – 0	Total- 2 Surface – 0 Third Party – 2 Ground water – 0
% water withdrawal from water-stressed areas (from scarcity perspective)	0.08%	0%	0%	0%	0.08%
Key water-saving initiatives and saved freshwater use (m3)	62 580 m3 of saved freshwater at our processing plants	• Expansion of freshwater production using Recirculation aquaculture Systems	• increase proportion of sea water for washing (instead of all freshwater). • installation of a system for collecting rainwater.	• Maximize reuse of water by slurry to conditioner • Maximize reuse of cooling water from extruder •Maximise reuse of operating	• installation of cooling loops on packaging machines • installation of new nozzles on production equipment. - installation of time-scheduled

			Water is treated and used for cleaning and cooling	water from vacuum pumps •Install heat pumps to replace cooling towers •Reduce draining from cooling towers	closing of water flow at equipment, reduced water leakages • optimization of cleaning strategies • upgrade of hand washing stations • reuse of water from hand washing for flushing toilets. • installation of optical sensors connected to valves.

In 2021, absolute water withdrawal for Mowi Group was similar to 2020 (0.22% higher in 21 vs 20). Freshwater withdrawal intensity in 2021 was 0.70 m3/kg fish produced (equal to 2020) while freshwater consumption intensity is significantly lower at 0,0009 m3/kg fish produced.

*Freshwater consumption is calculated as freshwater withdrawal minus freshwater discharge (GRI, Water and Effluents). In our Recirculating Aquaculture System we have assumed 1% of water consumption linked with make-up water used to compensate for evaporation. At our processing plants, consumption is linked with ice production. Our targets are therefore directed to water withdrawal as consumption is already negligible.

Table 2. Water withdrawal at processing plants located in water-stressed areas

Locations in water-stressed areas	Water withdrawal (m^3 and m^3/tonne)	
	2018 (ref year)	2021
Secondary processing plant Boulogne	86 121 m3 - 3.6 m3/tonne	118 899 m3 - 3.6 m3/tonne
Secondary processing plant Vietnam	283 145 m3 – 65.6 m3/tonne	190 479 m3 – 52.1 m3/tonne
Secondary processing plant China	3 468 m3 – 48.8 m3/tonne	4 623 m3 - 30.5 m3/tonne

Footnote

(1) One processing plant (Rosyth) went above regulatory limits on volume discharge. Rosyth is working with their local water supply to apply for an increase in wastewater volume discharge limit. Our processing plants in Japan were above the regulatory quality discharge limits on BOD (Biological Oxygen Demand) and TSS (Total Suspended Solids) while our processing plant in Vietnam was above COD (Chemical Oxygen Demand) and TN (Total Nitrogen) limits. As a result, Mowi initiated the construction of its own wastewater treatment plan to treat the discharge water before it is discharge to the local industrial park. One of our plants in Belgium (Bruges) was above regulatory quality limits in suspended solids. This issue will be mitigated by the installation of a fat separator before the wastewater is discharge to a municipal treatment facility later in 2022. Our plant in Spain (Zaragoza) was above the regulatory quality limits on BOD and COD. Mowi is working with other industrial stakeholders and the local regulator to build a water treatment facility specifically for the industrial zone where they are located rather than having discharge directed into the municipal water treatment system. One of our plant in France (Boulogne) was above the regulatory quality limit on BOD. Mowi is currently working with its water filtration supplier to develop an upgrade to the system that will mitigate this issue for the future.