

Environmental Product Declaration



In accordance with ISO 14025 for:

**FISH AND FISH PRODUCTS
(SALMONIDS)**

From:

AQUACHILE



Program:	The International EPD System www.environdec.com EPD International AB
Program operator:	Regional Hub EPD Latin America
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Valid until:	2026-09-02

AQUACHILE



EPD Programme Information

Program

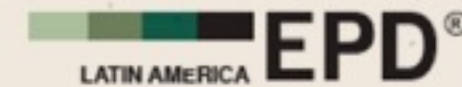
The International EPD System
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EPD registered through the fully aligned
regional program:
EPD América Latina
www.edp-americalatina.com

Program

EPD Latin America
www.epd-latinamerica.com



Chile:
Alonso de Ercilla 2996, Ñuñoa, Santiago Chile.

México: Av. Convento de Actopan 24 Int. 7ª, Colonia
Jardines Santa Mónica. Mexico

Product category rules (PCR). FISH AND FISH PRODUCTS, 2021:05.
UN CPC: 042, 2121, 2022.

PCR review was conducted by: Technical Committee of the International EPD System.
Review chair: Cristian Andler. (Mail: cristian@greenticket.cl)

Independent third-party verification of the declaration and data, according to ISO
14025:2006.

☐ EPD PROCESS CERTIFICATION ☒ EPD VERIFICATION

Third party Accredited Verifier: Claudia Peña, ADDERE Research and Technology

Procedure for follow-up of data during EPD validity involves third party verifier:

☒ YES. ☐ NO

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs
within the same product category but from different programs may not be comparable.

EPDs within the same product category but from different programs may not be
comparable

We are AquaChile

AquaChile is a Chilean salmon producer, who has been feeding millions of people around the world with rich and healthy protein from the Chilean Patagonia for more than 20 years. We produce high quality products using responsible production processes that are in harmony with the environment, we engage with neighboring communities and focus on innovation. Our company is characterized by its entrepreneurial spirit, simplicity and austerity as we always put soul and passion into our work.

We are a significant player in the global salmon industry, with productive sites in the south of Chile from the La Araucania to the Magallanes regions. We have commercial offices in USA, Switzerland, Russia, Germany, France, Shanghai and Tokyo.

Our integrated production model covers the entire salmon production cycle that spans genetics and freshwater production, farming sites, processing, salmon feed production, sales and marketing.

We are a healthy aquaculture production that feeds this and future generations, respecting and valuing the environment and our people in a sustainable way.

Company information

EPD Owner: AquaChile.

Address: Cardonal S/N, lote P.O BPX 30D

Puerto Montt, Chile

Web: www.aquachile.com

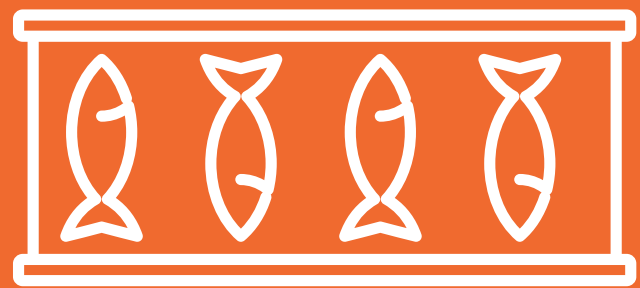
Contact Information: Carol Fernandois. (carol.fernandois@aquachile.com)

Business description: PRODUCTION OF HYDRO-BIOLOGICAL SPECIES (SALMONIDS)

Product-related or management system-related certifications: Global Gap, BAP (Best Aquaculture Practices), ASC (Aquaculture Stewardship Council), ISO 45001.

Production site :Our production sites are located in the south of Chile from the Araucania Region to the Magallanes Region.

Our Business



247.573

Tons
processed



US\$ 1,139,140

AquaChile
Sales



Sales in more than
50 countries
and **665** direct clients



6.225

Employees +3,600.
Indirect jobs



48,864

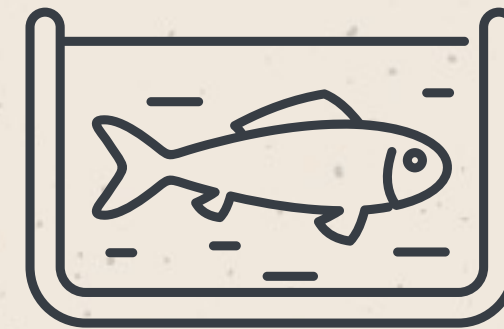
People benefited by
social programs

Introduction to the AquaChile production chain

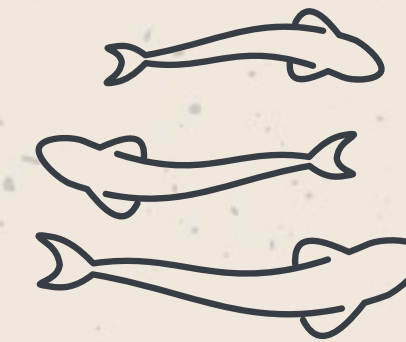
We are involved throughout the entire life cycle of our salmon and control each stage of the production process, including food processing and manufacturing, to ensure the efficiency and sustainability of our products.



Breeding &
Genetics



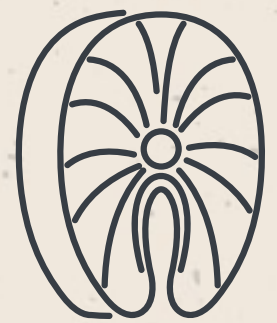
Fresh
Water



Sea
Water

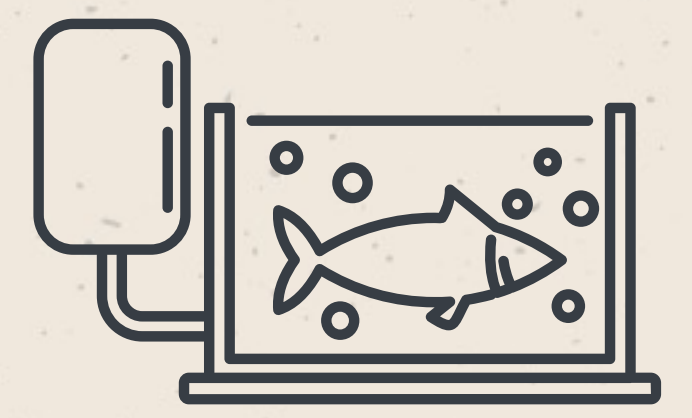


Processing



Sales

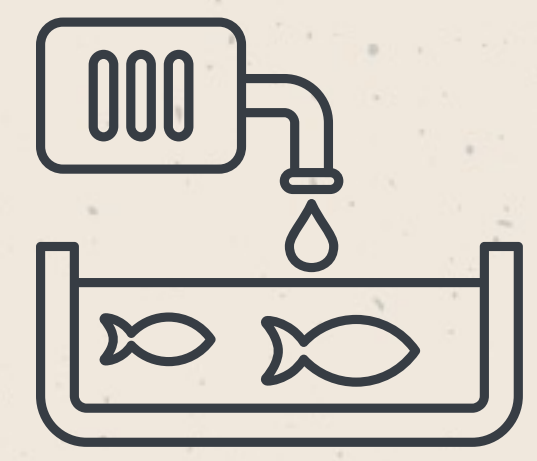
Our facilities



1

Feed Meal Plant

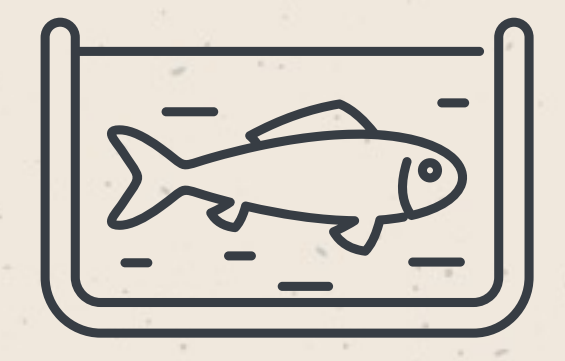
Our feed plant is located in the Los Lagos region.



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Fresh water facilities

Our fresh water facilities are located in the La Araucania, Los Lagos, Aysen and Magallanes regions.



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Sea-cage
Sea water facilities

Our marine production sites are located in the Los Lagos, Aysen and Magallanes regions.



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Process plants

Our Processing Plants are located in the Los Lagos and Magallanes regions.



AquaChile brands and products

Our products



ATLANTIC SALMON

This salmon is farmed in the cold waters of southern Chile. It is characterised by its versatility and its high protein and Omega-3 content.



COHO SALMON

This salmon is in high demand in Japan, where it has achieved great recognition. It is consumed in many ways, especially salty and cooked in what is called "kiriimi"

Our main products are prepared from the two species mentioned above and our main presentations are fresh chilled fish, frozen fillets and individual portions.

Our Brands



This is the global brand of AquaChile. It represents premium quality products that are healthy, nutritious and appreciated by our consumers around the world. AQUA is our salmon, which reaches tables in five continents.

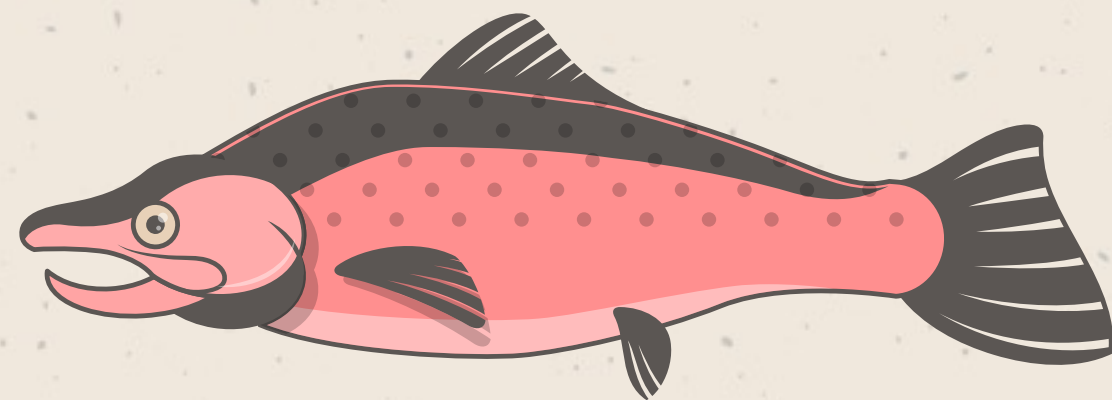


This is AquaChile's ultra premium brand and was launched a decade ago to meet the requirements of more sophisticated customers. Verlasso's main market is the United States, where it is sold in more than 100 cities, although exports recently began to Europe, Middle East and China



This brand provides practical and quality formats that integrate salmon into a rich and healthy diet.

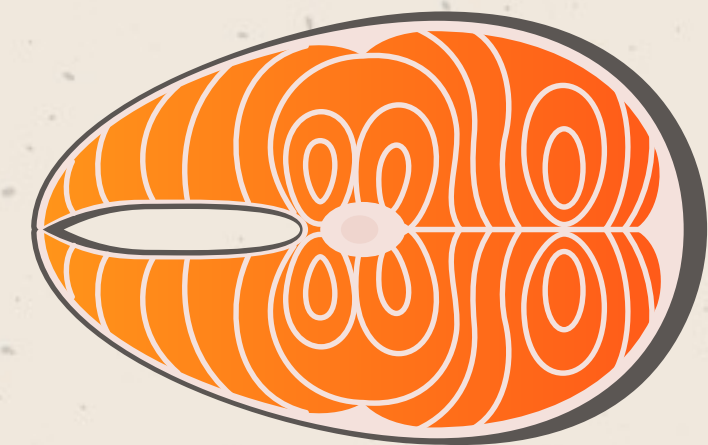
Our main products
and their
presentations
included on this
EPD are:



WHOLE FISH HEAD ON
Fresh chilled or frozen.



FROZEN FILLETS



INDIVIDUAL FROZEN PORTIONS

UN CPC product categories are used:

CPC 042 Whole fish, fresh or chilled for human consumption.

CPC 2121 Fish, frozen (excluding fish fillets and fish meat).

CPC 2122 Fish fillets and meat; fish livers and roes.

MEASURE WHAT MATTERS.

LCA information for Fish and Fish Products (Salmonids)*

*(Atlantic Salmon and Coho Salmon from Aquaculture)

Introduction

The objective of preparing, quantifying and evaluating AquaChile's environmental impacts is to identify the critical points in the environmental footprint across the entire lifecycle of Atlantic Salmon and Coho Salmon.

The environmental impacts were calculated taking into account the entire production chain from producing feed for fish, breeding and genetics, aquaculture practices, processing, transport to main markets and final consumption as specified on reference PCR 2021:05 FISH AND FISH PRODUCTS.

Geographical scope of the EPD.
Global.

Time coverage.
Data refers to 2019.

Declared unit

Atlantic salmon: 1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

Coho salmon: 1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

Methodology

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The results presented below were prepared according to ISO 14044 standards for a “cradle to grave” Life Cycle Assessment (LCA).

The iterative steps to conduct the Atlantic salmon LCA were the definition of objectives and scopes, an inventory of the system, the evaluation of direct and indirect impacts throughout the value chain, and interpretation of the results.

System boundaries.

The Environmental LCA includes the Impact Categories of the selected product, considering the acquisition of raw materials required for feed, the energy resources and primary inputs used during the fresh water and sea water phases, the processing plant, logistics between operations, packaging, refrigeration and distribution to consumer markets around the world.

The impact evaluation of the LCA was performed by a mass assignment equivalent to 1 Kg Atlantic Salmon and Coho Salmon independent of the product line being produced by the company in the processing plant such as fillets, whole fish and other co-products.

Database(s) and LCA software used: Umberto LCA+ 10.0.3.190, Ecoinvent, version 3.6.

Cut-Off Rules: Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts are included in the LCA.

Assumptions:

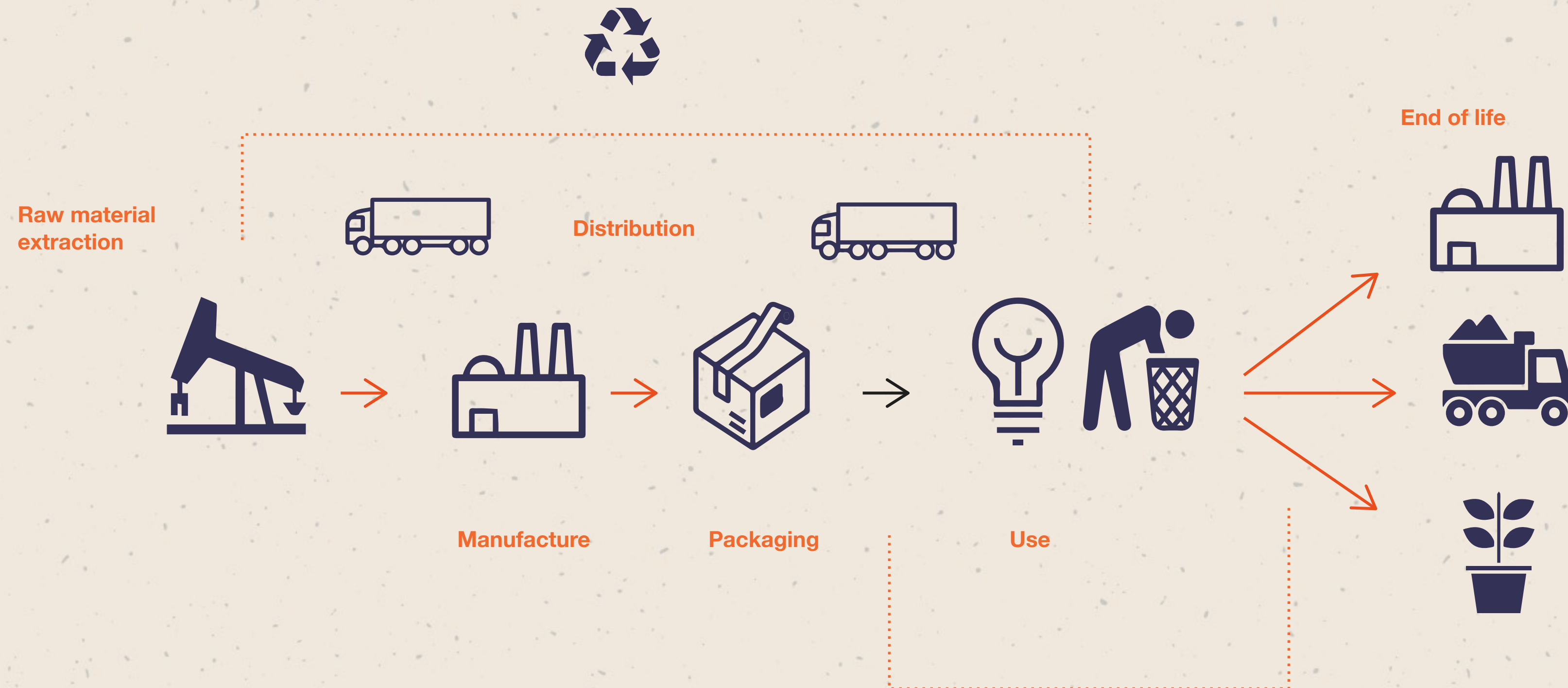
- 100% assignment to the product being assessed
- Fuel consumption per kilogram of salmon transported is assumed during transport between fresh water sites, feedlots and processing plants.
- The main markets are U.S.A, Russia, Asia and Brazil.
- Transport to the destination markets was calculated as the average distance the product was transported by various means of transport (airplane, ship, trucks).

Use stage:

- For cooking emissions, natural gas is used for all markets and a 10-minute cooking time.
- For raw salmon consumption, emissions include refrigerant leakage from refrigerating equipment. Due to the variability of markets, refrigerant gas R134A is assumed for all, as it is a commonly used commercial refrigerant in domestic refrigerators.
- All packaging goes to landfill with an average of 60 kilometers traveled.

Impact Evaluation Methodologies

The scope of this study is from the cradle to the grave, which takes into account extracting raw materials, transporting them to the plant, the salmon production process, packaging, transport, storing finished products and finally their use and disposal.



Allocation

"Allocation refers to the partitioning of the input or output flows of a process or product system between the product system under study and one or more product systems" [ISO 14044, definition 3.17]. This definition includes the separation of flows related to reuse and recycling, in particular open circuit recycling.

This study includes modeling for each stage of the life cycle, but 100% was assigned to the product being assessed. There are dead biomass outputs within the fresh water, sea water and production plant processes. These are usually used by animal feed producers, but in this case no economic remuneration is received. Therefore, all impacts were assigned to the product being assessed.

UPSTREAM

Extraction of raw materials.
Transportation of raw materials
Production of feed for salmon
Freshwater hatchery
Sea farming process (Growing out)
Harvest.

CORE

Production plant process
Transformation of salmonids into various presentations
(fresh and frozen whole salmon, frozen, fillets and portions)

DOWNSTREAM

Logistics and storage
Use
Waste and disposal

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Similarly to farming animals on land, aquaculture is farming fish in the ocean. Salmon is one of the most popular fish produced by aquaculture and is the common name for several species of the Salmonidae family, such as Atlantic salmon, Pacific salmon or Coho. Salmon is available from both wild and farmed sources, but the most widely available is farmed Atlantic salmon.

The salmon farming production cycle lasts about 2 to 3 years, depends on the species. The first year of production takes place in a controlled freshwater environment called a Hatchery. Then farmed salmon are transported to seawater cages for the growing out stage. Once the farmed salmon reach a harvestable size, they are transported to processing plants to be prepared for sale. Most farmed salmon is sold to consumers as salmon fillets, although whole fish are available.

The system limits determine the processes included within the assessment. Due to the breadth of the process, the stages to be considered in the study must be clearly defined.

The scope of this study is from the cradle to the grave, which includes extracting raw materials, transporting them to the feed production plant, the salmon production process, packaging, transport, storing the finished product and finally their use, although the use stage does not need to be included in the total emissions calculation, they are included in this study, and finally the disposal stage.

UPSTREAM

Extraction of raw materials.
Transportation of raw materials
Production of feed for salmon
Freshwater hatchery
Sea farming process (Growing out)
Harvest.

CORE

DOWNSTREAM

Raw Materials	Extraction, production	Includes emissions during the extraction of raw materials to produce feed, producing the chemicals consumed, transport in the commercial chain before the final purchase, and the raw materials to produce cages and aquaculture tanks.
Raw material transportation	Ground transportation	Includes emissions during terrestrial transport to transfer raw materials from their place of origin to the AquaChile feed production plant.
	Marine transport	Includes emissions during maritime transport to transfer of raw materials from their place of origin to sea water and fresh water fish farming sites.
Production	Fresh water	Includes emissions during the manufacture of fiberglass aquaculture tanks, together with the extraction and transportation of the natural gas required, and to generate electricity.
	Sea-cage Sea water	Includes emissions during logistics and the energy consumed in these processes.
	Transport	Includes emissions during general fish transportation, when it was not possible to separate out the transportation that applies to the fresh water, sea water and processing plant stages.

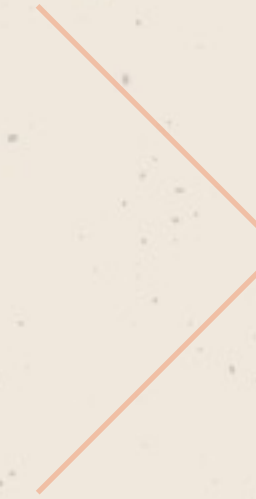
UPSTREAM



CORE

Production plant process

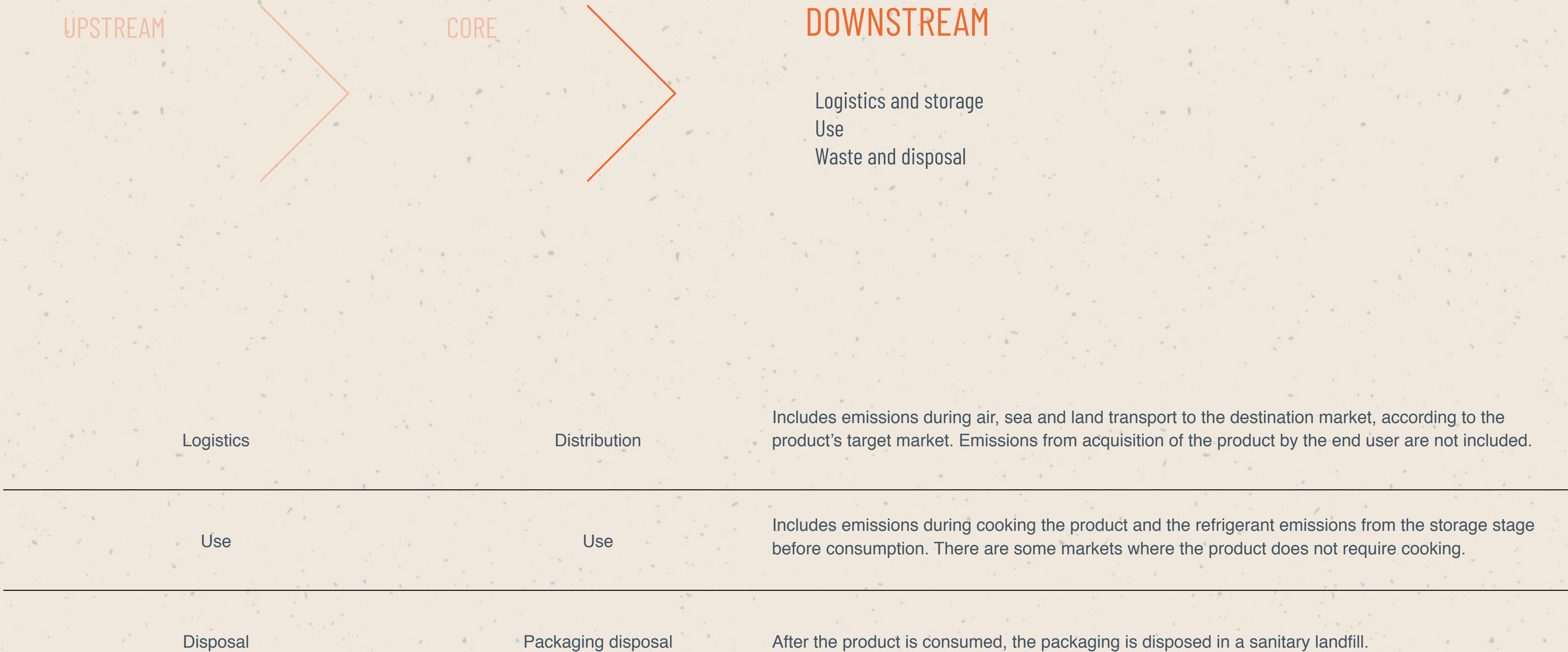
Transformation of salmonids into various presentations
(fresh and frozen whole salmon, frozen, fillets and portions)

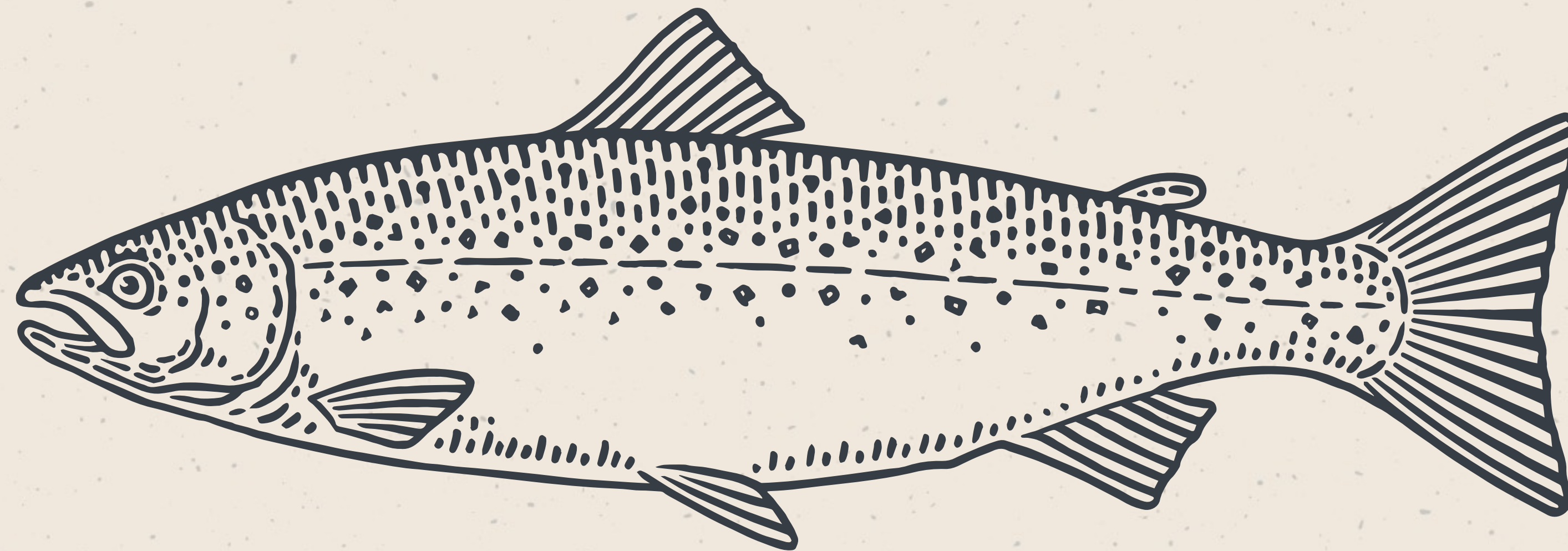


DOWNSTREAM

Process plants

Includes emissions during salmon processing and converting it into finished products, includes energy processes, emissions from refrigeration, water uses, chemical inputs, packaging, waste and other processes.





**Environmental
performance Atlantic
salmon** (*Salmo salar*)

1 kg of edible fish product plus packaging.

The environmental impacts of various EPDs can be compared only by taking into account all the technical information supporting the declared/functional unit definition as requested by the PCR.

Environmental performance
Potential environmental impact

1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

PARAMETER	PARAMETER	UNIT	UPSTREAM	CORE	DAWNSTREAM	TOTAL
Global Warming Potential	Fosil	kg CO ₂ eq.	2,057	0,838	1,675	4,570
	Biogenic	kg CO ₂ eq.	0,027	0	0,006	0,028
	Land use & land transformation	kg CO ₂ eq.	0,408	-0,006	0,001	0,400
	TOTAL	kg CO ₂ eq.	2,491	0,827	1,681	4,999
Acidification Potential AP	kg SO ₂ eq.	kg SO ₂ eq.	0,005	1,185	0,009	1,200
Eutrophication Potential EP	kg PO ₄ ³⁻ eq.	kg PO ₄ ³⁻ eq.	0,003	0,115	0,009	0,126
Formation of photochemical oxidants	kg NMVOC eq	kg NMVOC eq	0,008	0,005	0,452	0,465
Abiotic depletion potential – Elements	kg Sb eq.	kg Sb eq.	0	0,29	0,016	0,322
Abiotic depletion potential – Fossil fuels	MJ, net calorific value	MJ, net calorific value	34,779	10,979	23,38	69,139
Land use	m ² .a	m ² .a	3,603	2,048	0,329	5,980
Water consumption	m ³ eq.	m ³ eq.	0,095	0,0145	0,059	0,170
Water scarcity potential	m ³ eq.	m ³ eq.	2,608	0,266	0,131	3,006

Results by DU.

Use of resources

1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

PARAMETER		UNIT	UPSTREAM	CORE	DAWNSTREAM	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	10,50	9,25	2,21	21,99
	Used as raw materials	MJ, net calorific value	1,17	0,80	0,39	2,36
	TOTAL	MJ, net calorific value	11,67	10,06	2,61	24,35
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	41,4142	19,1732	620,6298	681,2173
	Used as raw materials	MJ, net calorific value	0,6364	0,2946	9,5375	10,4686
	TOTAL	MJ, net calorific value	42,0507	19,4678	630,1674	691,6860
Secondary material		Kg	0	0	0	0
Renewable secondary fuels		MJ, net calorific value	0	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0	0
Net use of fresh water		m³	2,6088	0,2662	0,1316	3,0066

Results by DU.

Waste production and output flows

1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	1,7,E-04	2,4,E-05	2,3,E-04	4,2,E-04
Non-hazardous waste disposed	kg	3,7,E-06	2,8,E-07	1,2,E-02	1,2,E-02
Radioactive waste disposed	kg	4,6,E-05	3,1,E-05	2,0,E-04	2,8,E-04

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	0	0	0	0
Material for recycling	kg	1,5,E-07	1,7,E-03	0,0,E+00	1,7,E-03
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0

Results by DU.



**Environmental
performance Pacific Coho
salmon** (*Oncorhynchus
kisutch*)

1 kg of edible fish product plus packaging.

The environmental impacts of various EPDs can be compared only by taking into account all the technical information supporting the declared/functional unit definition as requested by the PCR.

Environmental performance
Potential environmental impact

1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

PARAMETER	PARAMETER	UNIT	UPSTREAM	CORE	DAWNSTREAM	TOTAL	23
Global Warming Potential	Fosil	kg CO ₂ eq.	1,894	0,812	1,675	4,381	
	Biogenic	kg CO ₂ eq.	0,022	-0,005	0,006	0,024	
	Land use & land transformation	kg CO ₂ eq.	0,388	-0,007	0,002	0,381	
	TOTAL	kg CO ₂ eq.	2,305	0,801	1,681	4,790	
Acidification Potential AP	kg SO ₂ eq.	kg SO ₂ eq.	0,005	1,186	0,008	1,200	
Eutrophication Potential EP	kg PO ₄ ³⁻ eq.	kg PO ₄ ³⁻ eq.	0,003	0,115	0,009	0,126	
Formation of photochemical oxidants	kg NMVOC eq	kg NMVOC eq	0,007	0,0052	0,452	0,465	
Abiotic depletion potential – Elements	kg Sb eq.	kg Sb eq.	0,006	0,2999	0,016	0,322	
Abiotic depletion potential – Fossil fuels	MJ, net calorific value	MJ, net calorific value	31,526	9,2568	21,264	62,047	
Land use	m ² .a	m ² .a	3,598	2,0472	0,329	5,974	
Water consumption	m ³ eq.	m ³ eq.	0,094	0,0135	0,054	0,163	
Water scarcity potential	m ³ eq.	m ³ eq.	2,587	0,2553	0,121	2,964	

Results by DU.

Use of resources

1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

PARAMETER		UNIT	UPSTREAM	CORE	DAWNSTREAM	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	9,98	8,79	2,21	20,97
	Used as raw materials	MJ, net calorific value	1,11	0,76	0,39	2,26
	TOTAL	MJ, net calorific value	11,08	9,55	2,59	23,24
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	39,8962	18,1458	618,1585	676,2006
	Used as raw materials	MJ, net calorific value	0,1589	0,2869	9,0155	9,4614
	TOTAL	MJ, net calorific value	40,0552	18,4327	627,1741	685,6621
Secondary material		Kg	0	0	0	0
Renewable secondary fuels		MJ, net calorific value	0	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0	0
Net use of fresh water		m³	2,5872	0,2553	0,1215	2,964

Results by DU.

Waste production and output flows

1 kg of edible fish product, ready to be bought by customers in its appropriate packaging, or served at the store's fishery counter.

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	1,7E-04	2,3E-05	2,1E-04	4,0E-04
Non-hazardous waste disposed	kg	3,7E-06	2,8E-07	1,2E-02	1,2E-02
Radioactive waste disposed	kg	4,4E-05	3,1E-05	1,6E-04	2,3E-04

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	0	0	0	0
Material for recycling	kg	1,5E-07	1,7E-03	0,0E+00	1,7E-03
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0

Results by DU.

Land use competition

1 kg of Atlantic Salmon.

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Land use competition	m².a	1,459	0,223	1,606	3,284

1 kg of Pacific Salmon (Coho)

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Land use competition	m2.a	1,382	0,223	1,606	3,211

Results by DU.

Additional Information

Nature and the environment are not an inexhaustible source of resources, so it is necessary to protect them and use them rationally.

It is the role of sustainability to identify development that does not sacrifice the choices available to future generations.

At AquaChile we seek a balance between economic growth, caring for the environment and social welfare, while ensuring satisfactory quality of life, health and education.

Our environmental management involves production processes and water use, as this is our main resource, and the impact of our processes on the environment and climate change. Therefore, we have achieved certified compliance with the most demanding standards that apply to our business.



The Aquaculture Stewardship Council is an independent non-profit organisation and labelling organization that establishes protocol on farmed seafood while ensuring sustainable aquaculture. The ASC provides producers with a certification of environmental sustainability and social responsibility.



The most trusted certification for farm-raised seafood. BAP ensures aquaculture is done responsibly through its third-party certification program.

AquaChile is also a member of:



The Global Salmon Initiative (GSI) is a leadership initiative established by leading farmed salmon CEOs from around the world who share a vision of providing a healthy and sustainable source of protein to feed a growing population, while minimizing their environmental footprint, and continuing to improve their social and economic contribution.



RTRS' mission is to promote the growth on production, trade, and use of responsible soy through cooperation with actors in and relevant to the soy value chain from production to consumption in an open dialogue with stakeholders

including producers, suppliers, manufacturers, retailers, financial institutions, civil society organizations and other relevant actors.



Sustainable Fisheries Partnership (SFP) is dedicated to delivering healthy marine and aquatic ecosystems and a secure seafood supply through the creation of a responsible seafood economy.

References

- General Program Instructions (GPI) of the International EPD® System, version 3.01
- PCR 2021:05, version 1.0. Fish and Fish Products Valid until: 2025-06-23.
- ISO 14040: 2006 Environmental management - Life cycle assessment - Principles and Framework.
- ISO 14044: 2006 Environmental management - Life cycle assessment - Requirements and guidelines.
- ISO 14025: 2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

Contact information

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