THE SALMON FARMING INDUSTRY IN CHILE. EVOLUTION, CHALLENGES AND PERSPECTIVES.

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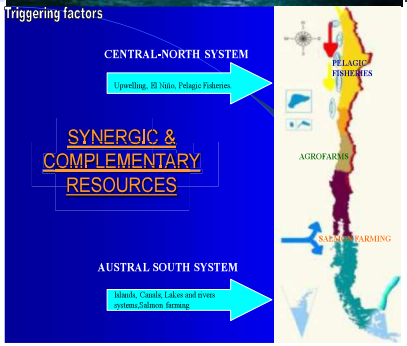
EVOLUTION MILESTONES OF HISTORY AND THE PRESENT OF INDUSTRY

A MACRO INNOVATION

Salmon industry was a large-scale innovation in Chile's south: it took advantage of market opportunities, exploited comparative advantages (environmental and human), and... added value to the southern regions and the country.

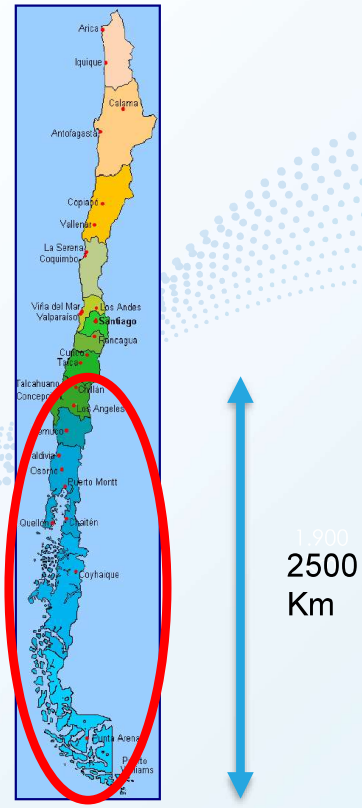
IN A FEW YEARS, CHILE BECAME A GLOBAL ACTOR



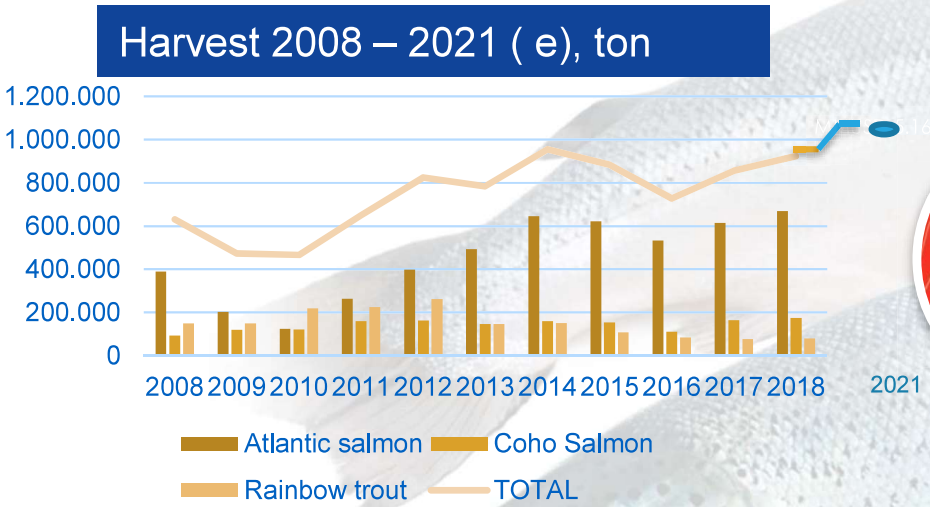
A great product with a great market.

It has a huge space to farm salmon advantageously.

In the same country, basic feed raw materials



SALMON IN FIGURES



U$MM 5,180 Export and app. 1 million ton Harvest 2021

2nd product exported after cooper

90% Of Chilean aquaculture

74% of the total export value in fisheries + aquaculture

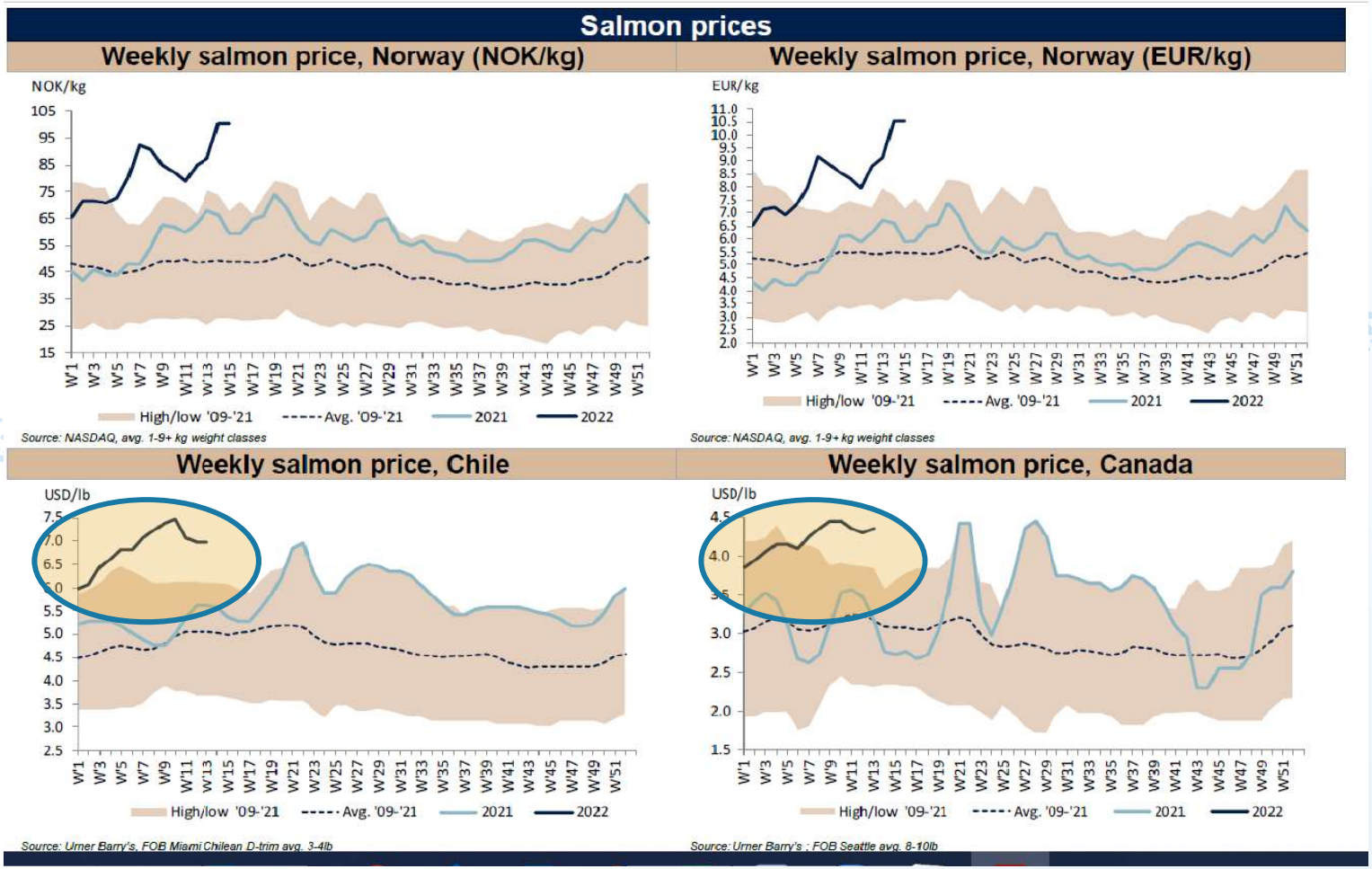
70,000 Direct and indirect jobs

110 foreign markets

4,000 supplier linked companies

2nd world producer of A. salmon and 1st in trout and coho salmon

JAN 2021-PRESENT PRICES



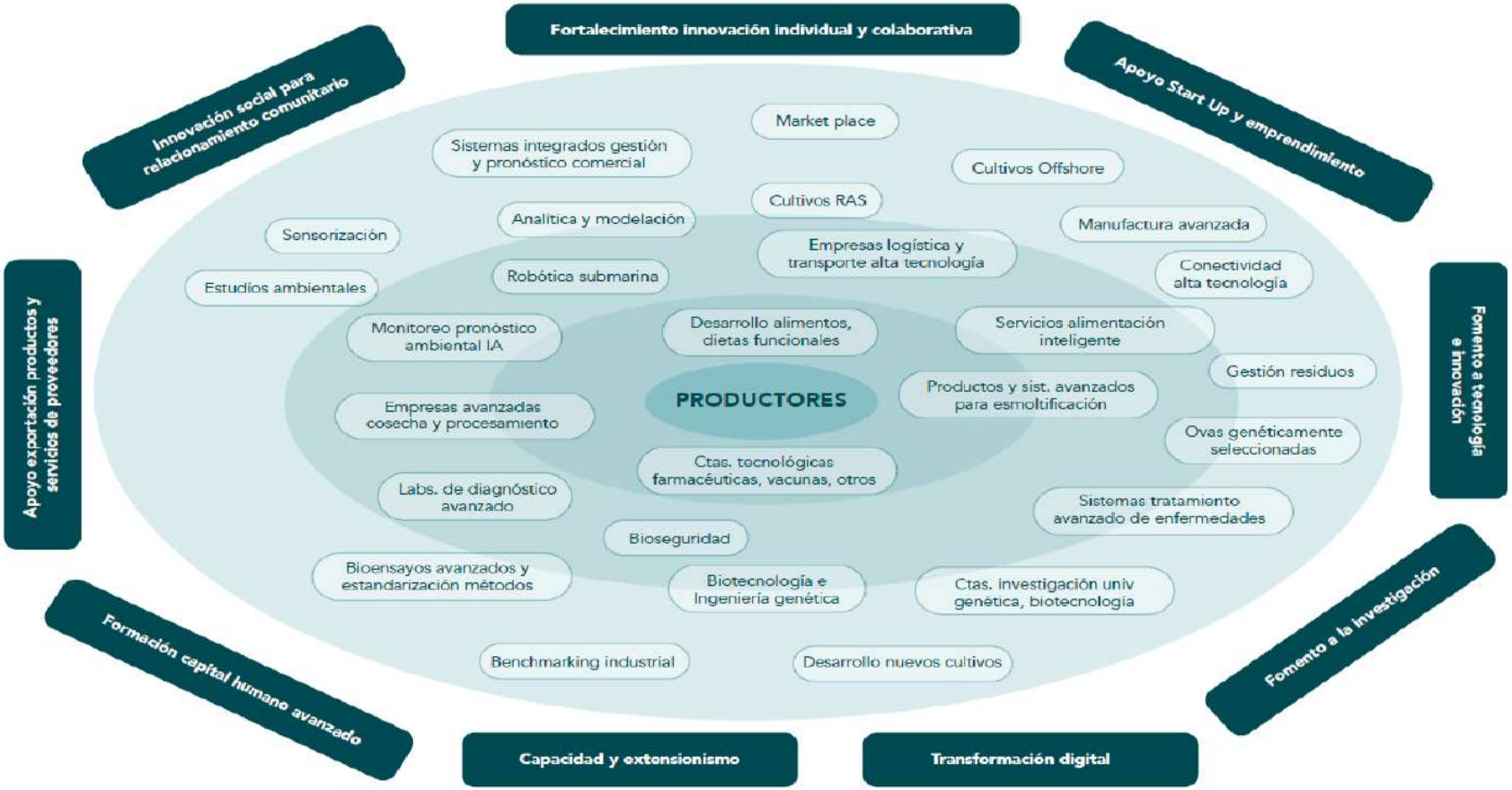
Source: NASDAQ

CHILE´S SALMON: GREAT RESULTS Q1 2022

Salmon is leading no copper exports of Chile, showing a great growth.

In Q1 Salmon reached US$ 1,686 with a growth of 26,1 %, representing 14% of total Chile´s no copper exports showing great prospects. Salmonexpert, 04.11.22

A SOFISTICATED ECOSYSTEM BECAME A REALITY IN ALL VALUE CHAIN



THE MOST IMPORTANT AQUACULTURE I+D+i ECOSYSTEM OF THE SH

The southern hemisphere's largest and most powerful R+D+i ecosystem, with products and services that can be used not only in the country, but also exported to the rest of the world with significant potential.

CHALLENGES AS A RESULT OF GLOBAL AND DOMESTIC TRENDS

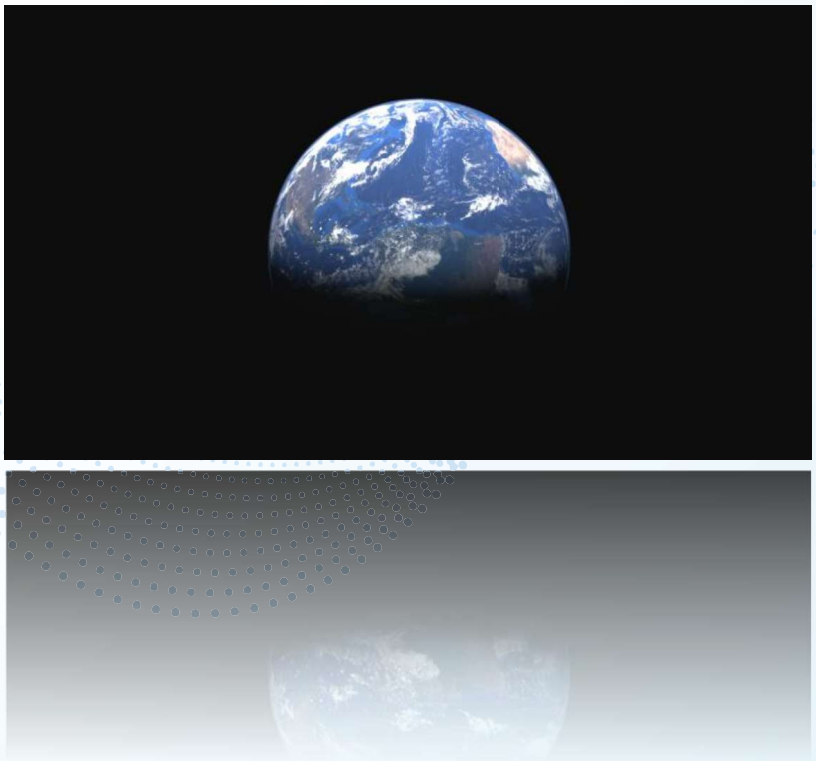
ADAPTATION TO GLOBAL TRENDS

CLIMATE CHANGE Carbon neutrality is the industry's goal for 2030. Green energy will be used to replace fossil fuels and a smaller water footprint will also be a reality.

SUSTAINABILITY Sustainable development Objectives: compliance through good practices and new technologies; gender equality, women's participation in all levels of companies and also improved community relations.

CIRCULAR ECONOMY. Valorization of organic residues. Reuse and recycling of inorganic residues. Reduction of fish meal and fish oil in fish feed. New ingredients development.

MARKET TREND. Fast adaptation to new customers' requirements. Demonstrate long-term viability in its processes and products.



ADAPTATION TO DOMESTIC TREND AND CHALLENGES

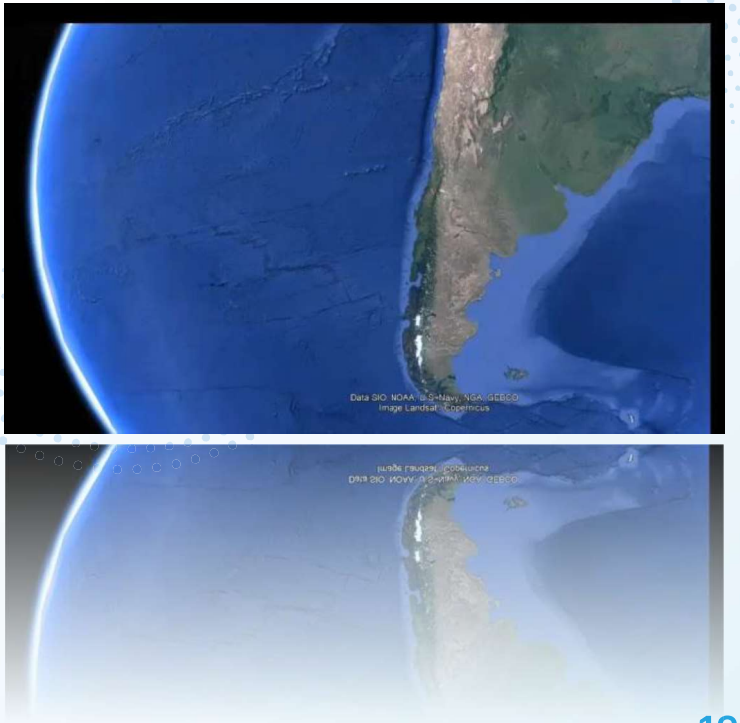
REGULATION. Comprehensive and specific institutionality as well as aquaculture regulations

TERRITORY Territorial certainty to operate. Conflict avoidance with indigenous peoples and national marine protected reserves

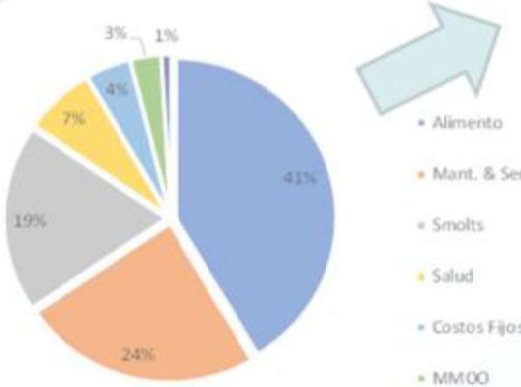
ENVIRONMENT. Reduction and/or mitigation of fish escapes. Marine bottom contamination. Reduction of pharmaceutics use.

COMMUNITY. Improved transparency through public information about operations, critical indicators, and events. New relations with the community; social and political acceptance and support.

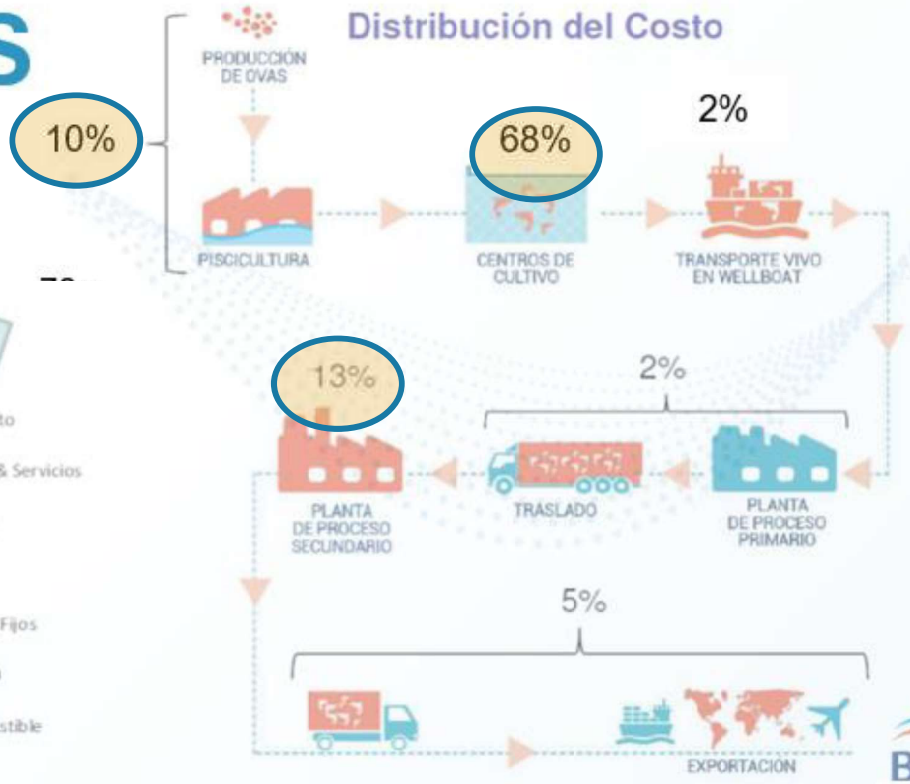
ADVANCED HUMAN CAPITAL AND R+D+I. Active interaction between the private, public, and academic sectors. Support for trust, participative governance, and innovation initiatives.



WHERE IS COMPETITIVENESS CENTERED?



- Alimento
- Mant. & Servicios
- Smolts
- Salud
- Costos Fijos
- MMOO
- Combustible



BLUMAR

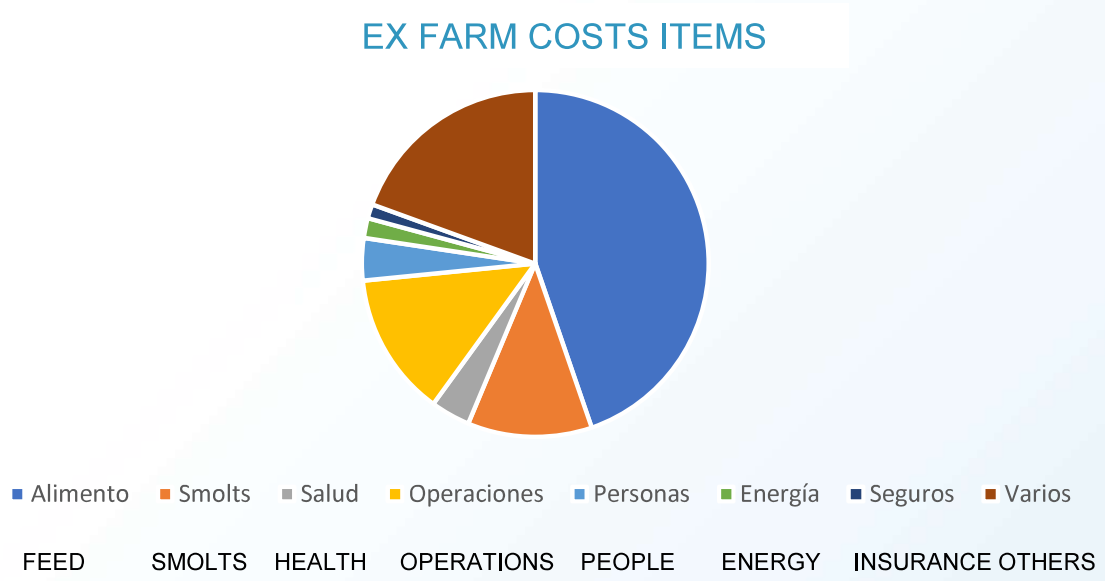
Pablo Albistur

PRODUCTION COST ITEMS

(excluding processing and commercialization, 2020)

Considering a cost of 3,8 USD/Kg or USD 3,800 millions (ex farm) industry

	US$/Kg
Feed	1,70
Smolts	0,44
Health	0,14
Operations	0,51
People	0,15
Energy	0,07
Insurance	0,05
Others	0,74
Total	3,80



Apart from processing and commercialization, it is clear that the primary costs are in feed, smolts, operations, and health.

Source: Alvaro Poblete

ALL VALUE CHAIN: GREAT NUMBERS

Production unit Kg WFE

	US$/kg WFE
Production cost	3,80
Harvest transport cost	0,40
Processing cost	0,80
Direct margin	1,00
Sale Price	6,00

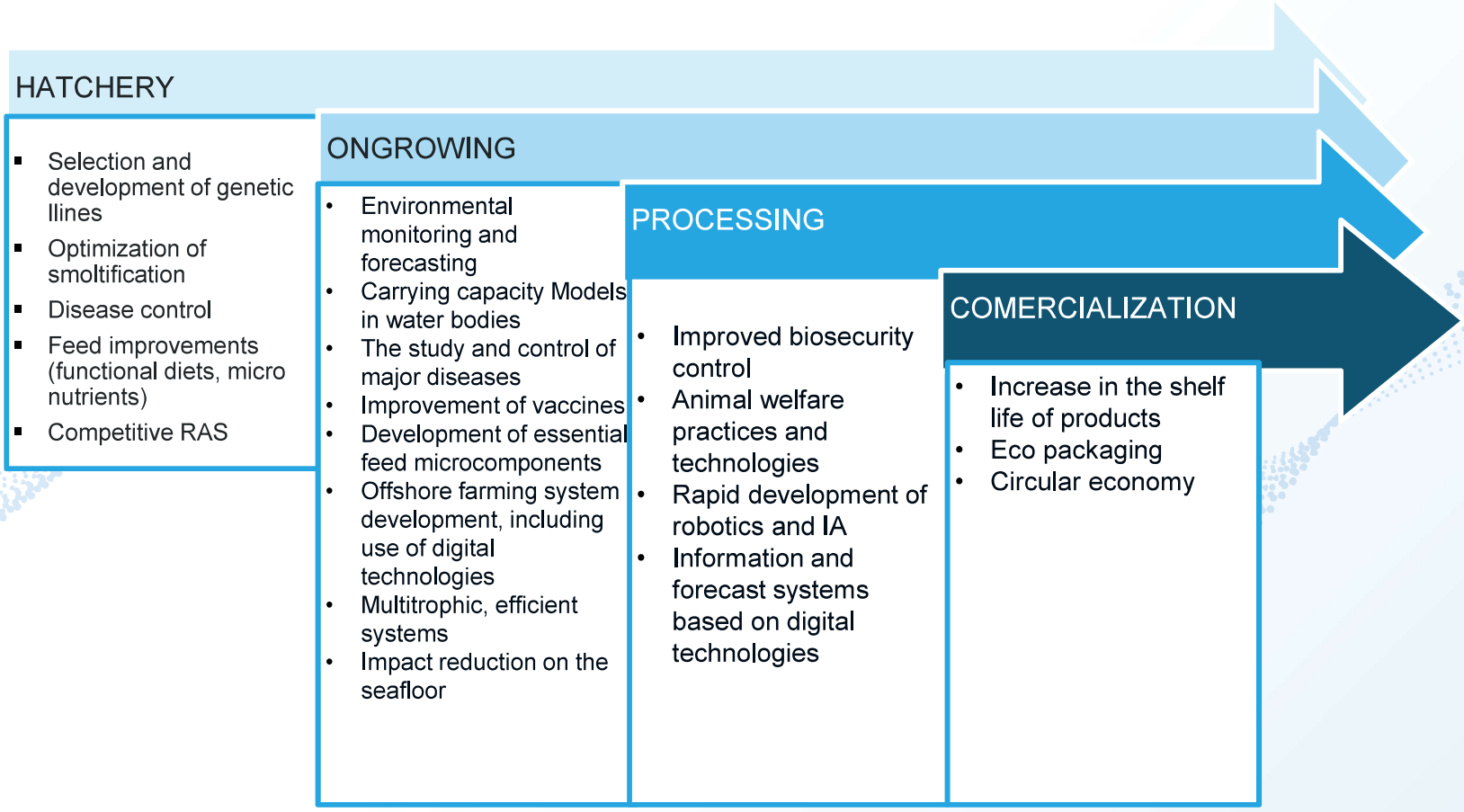
For 1.000.000 ton harvest

Million US$
3.800
400
800
1.000
6.000

Source: Alvaro Poblete

PERSPECTIVES SOLVING CHALLENGES AND TAKING ADVANTAGE OF OPPORTUNITIES

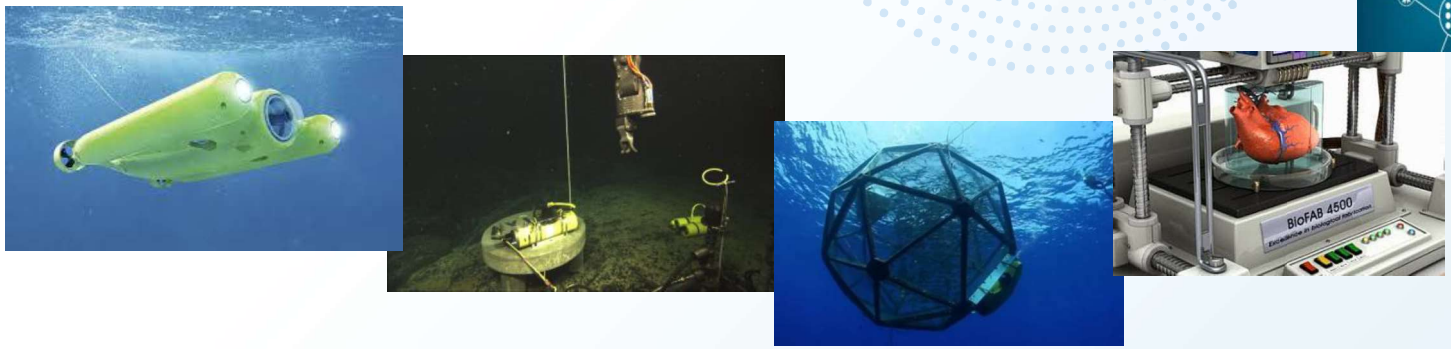
OPPORTUNITIES FACING THE FUTURE



- **Reduced carbon and water footprints, as well as increased use of green energy sources**
- **Environmental and health challenges present opportunities for early detection and improved management.**

OPPORTUNITY BASED ON DIGITAL TECHNOLOGIES

The acceleration of the introduction of bio-informatics and info technologies will continue to support a more active and competitive innovation all along the value chain. Gaps with developed countries in innovating in the industry will be dramatically reduced.



CONCLUSIONS

- **Chilean salmon farming has shown impressive growth**. In around 35 years, the country became the leader as a farmed trout producer and the second farmed salmon producer.
- **Regulations moved behind industry growth,** generating several gaps that did not help in preventing environmental/sanitary problems. In fact, in 2007, the ISA crisis had an enormous impact on the industry, with important social and economic consequences. This caused a major change in the industry's development model.
- **Rapid and profound changes in regulations**, biosecurity, disease monitoring and alert programs, vaccine development, last generation diagnostic labs, genetic labs, among others, have become a reality. Additionally, the industry has moved towards a spatial management approach, which is now in place.
- **The industry has grown as an industrial cluster,** allowing the development of the greatest innovation ecosystem in the SH, becoming an important element in facing future challenges.

- **Presently, the industry is committed to the national aquaculture adaptation plan to climate change,** establishing specific goals to reach carbon neutrality and green energy introduction as well as improving water recirculation systems and offshore farming operations. Additionally, the industry is pushing for a socially inclusive development understanding that is part and not a counterpart to the community. Still pending are improved transparency and public communication.
- **Principal challenges:** a comprehensive and stable legal framework, especially in relation to licenses in the maritime territory; reduction of environmental impacts, mostly associated with carrying capacity models' absence; innovation to solve health and environmental challenges, like infectious and parasitic diseases and harmful algae blooms; and long-term efforts in social and political terms. Digital technologies should continue to be crucial to accelerating solutions.
- **Short-term planning that is only focused on maximizing profit** while ignoring medium-long term impacts is counterproductive due to the need to move towards competitive sustainable activity as demanded by domestic and global trends, and industry is presently aware of that.

THANKS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