



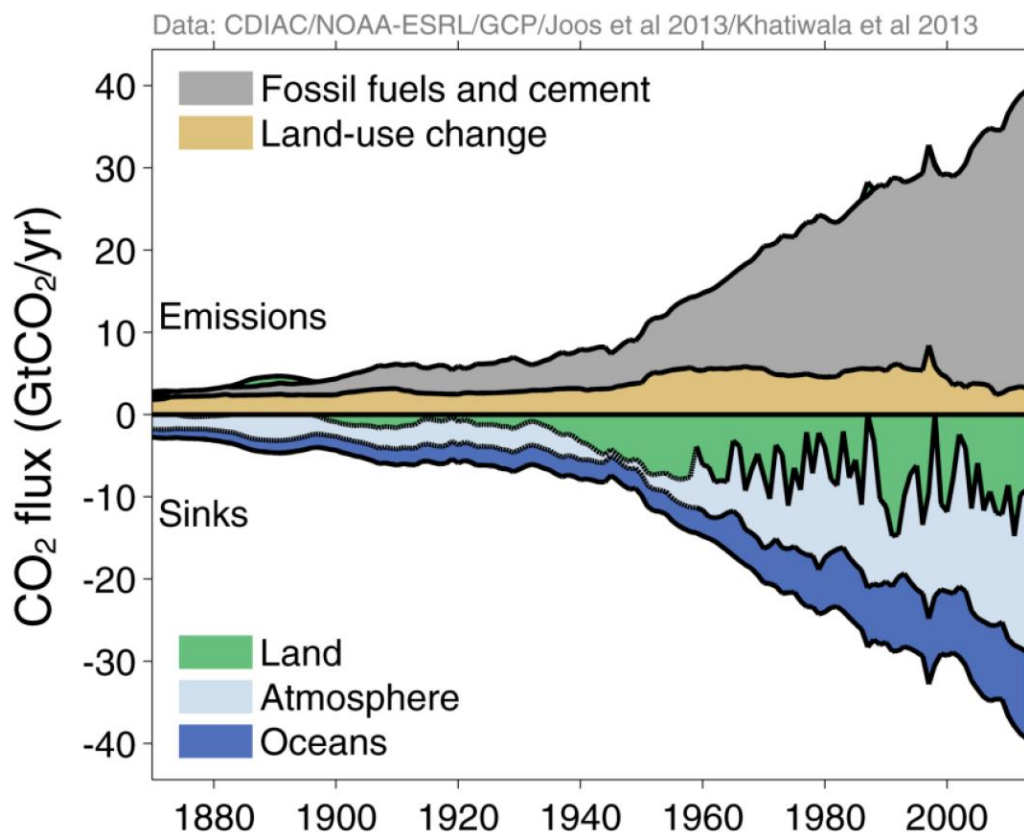
Challenges of aquaculture production in a climate crisis era?



RICARDO BOSSHARD
Director - WWF Chile
COP25, diciembre 2019

Global Carbon Budget

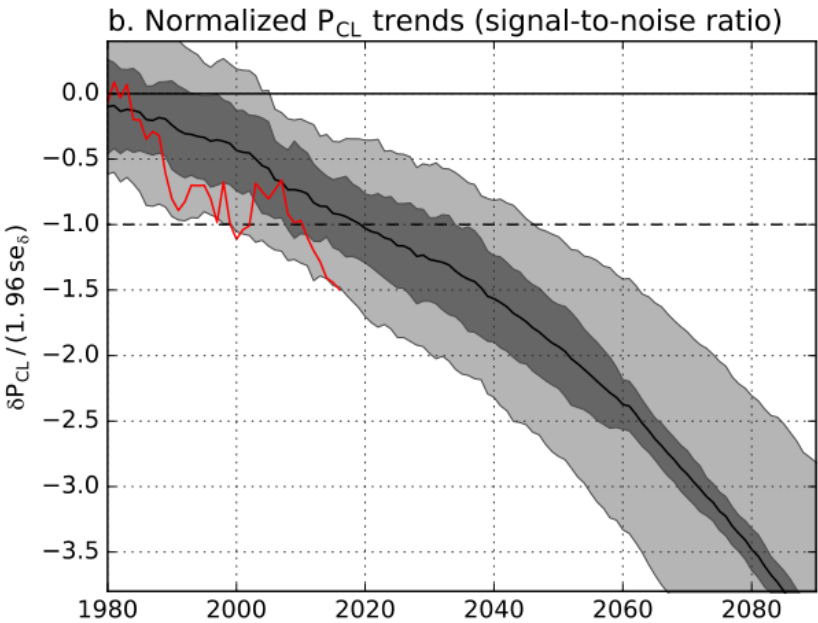
Emissions are partitioned between the atmosphere, land, and ocean



Source: [CDIAC](#); [NOAA-ESRL](#); [Houghton et al 2012](#); [Giglio et al 2013](#); [Joos et al 2013](#); [Khatiwala et al 2013](#); [Le Quéré et al 2014](#); [Global Carbon Budget 2014](#)

Source: Global Carbon Budget

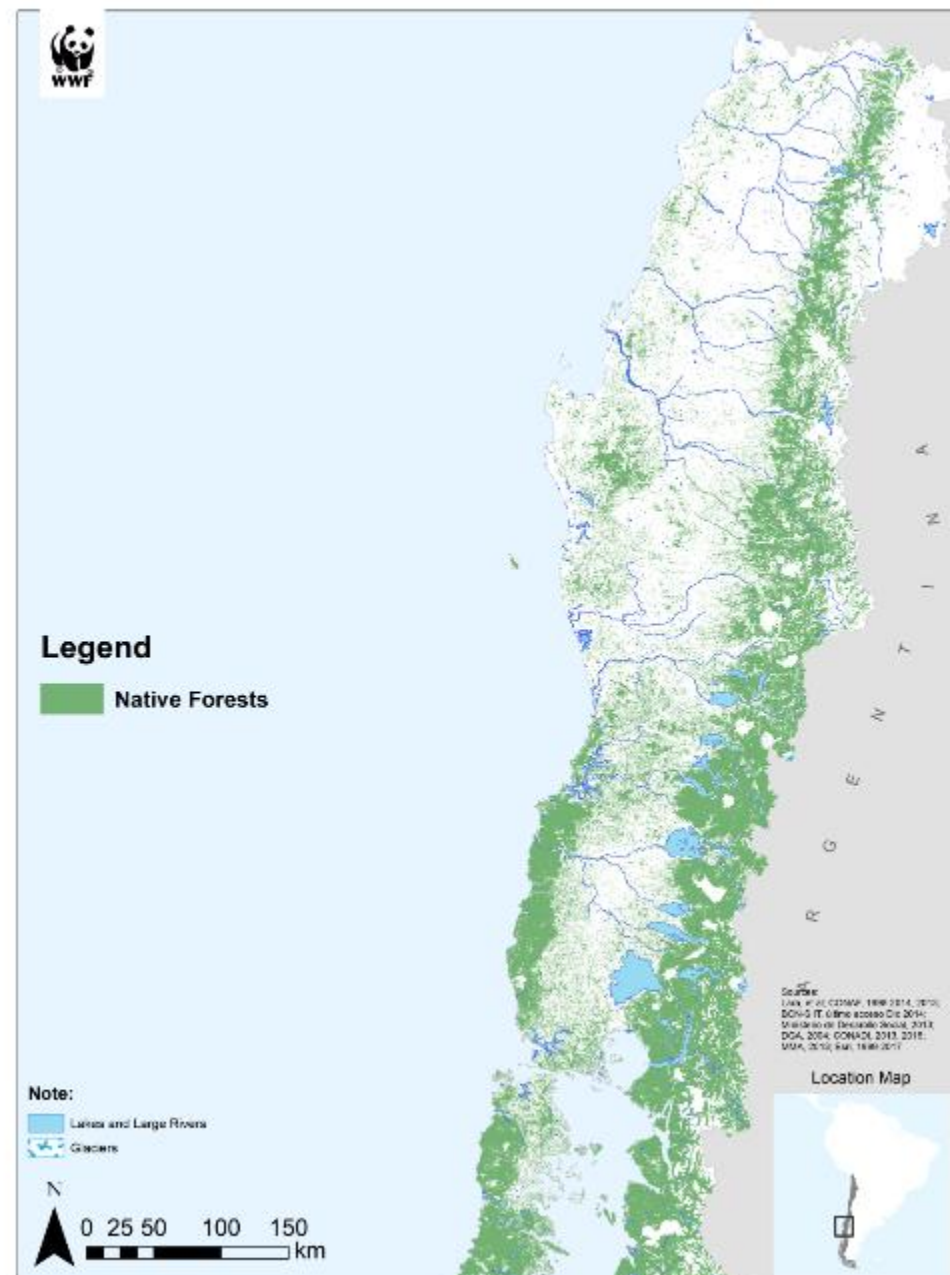
Cambio climático en Chile



Boisier et al. (2018)

En la década reciente, la señal de cambio en el régimen de precipitación del centro-sur de Chile emergió por sobre su (alta) variabilidad natural

Nature in Crisis



Social Crisis



THE NEW DEAL FOR NATURE AND PEOPLE

STOP AND REVERSE THE DOWNWARDS DECLINE OF BIODIVERSITY TO PROTECT AND RESTORE NATURE BY 2030, FOR THE BENEFIT OF PEOPLE AND THE PLANET, IN SUPPORT OF THE SUSTAINABLE DEVELOPMENT GOALS.

THE PROBLEMS

MASSIVE
DESTRUCTION OF
NATURAL SPACES



MASS LOSS
OF SPECIES AND
DIVERSITY OF LIFE



UNSUSTAINABLE
PRODUCTION
AND CONSUMPTION
OF NATURE'S RESOURCES



THE TARGETS

ZERO
LOSS
OF NATURAL
HABITATS



ZERO
HUMAN-
INDUCED
EXTINCTION



HALVE
FOOTPRINT OF
PRODUCTION
AND
CONSUMPTION



THE SOLUTIONS

- PROTECT 30%
- SUSTAINABLY MANAGE AT LEAST 20%
- RECOGNIZE RIGHTS TO INDIGENOUS PEOPLES' LANDS



- STOP UNSUSTAINABLE WILDLIFE EXPLOITATION AND TRADE
- ENABLE VIABLE POPULATIONS



- TRANSITION TO SUSTAINABLE PRACTICES: INFRASTRUCTURE, AGRICULTURE, FISHING, EXTRACTIVES

THE BENEFITS



WATER FOR
9 BILLION



FOOD FOR
9 BILLION



DIVERSITY
OF LIFE



STABLE
CLIMATE



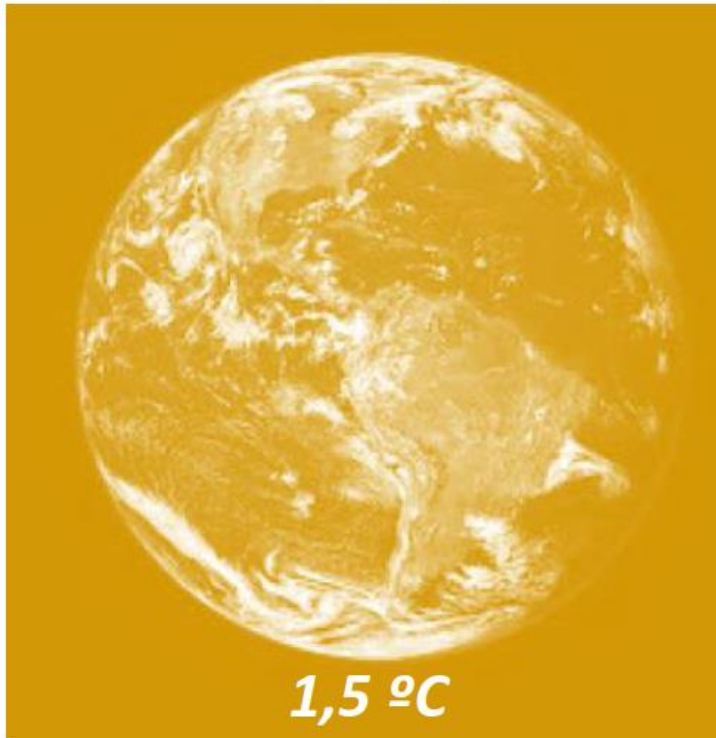
GOOD QUALITY
OF LIFE



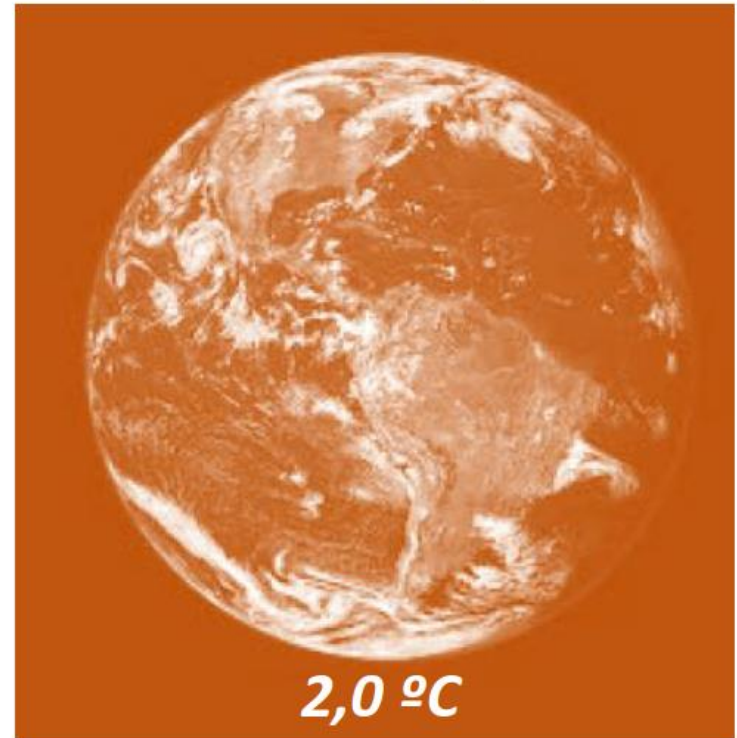
Carbon Budget to reach limit temperature

Mundo
Chile

420 GtCO₂
1,27 GtCO₂

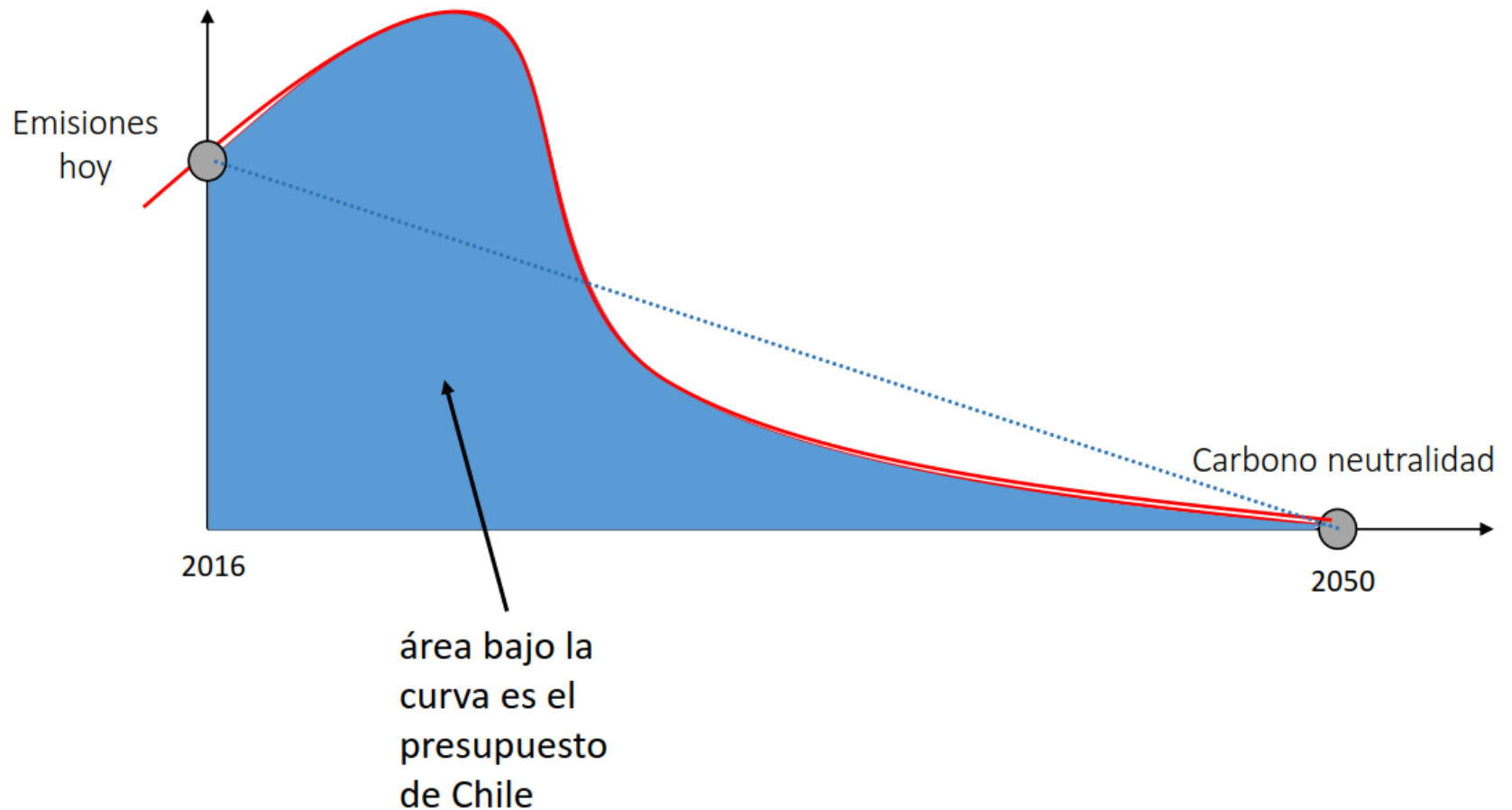


1170 GtCO₂
3 GtCO₂



Source: CR2 presentation for the COP Presidential Advisory group

CO2 Neutral - A journey to come



Source: CR2 presentation for the COP Presidential Advisory group



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Smolt production moves out of lakes



**Salmonicultura en los Lagos
del Sur de Chile - Ecorregión Valdiviana**
Historia, tendencias e impactos medioambientales

Salmon Farming in the Lakes
of Southern Chile - Valdivian Ecoregion
History, tendencies and environmental impacts

Jorge León-Muñoz^{1,2}, David Tecklin¹, Aldo Fariás¹, Susan Díaz¹



Patrocinado por / Support by:
Sociedad Chilena de Limnología / Chilean Society of Limnology

¹WWF Chile - ²Núcleo Científico Milenio Forecos, Universidad Austral de Chile

Important step towards
reducing impacts in Chile's
freshwater systems

Chile's largest salmon farmer ends lake hatchery operations

News by Owen Evans - 5 June 2019

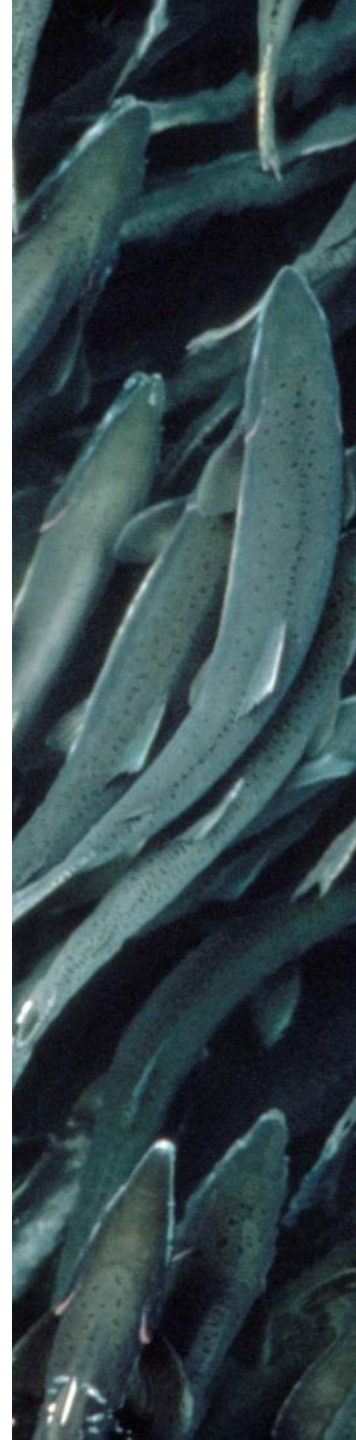
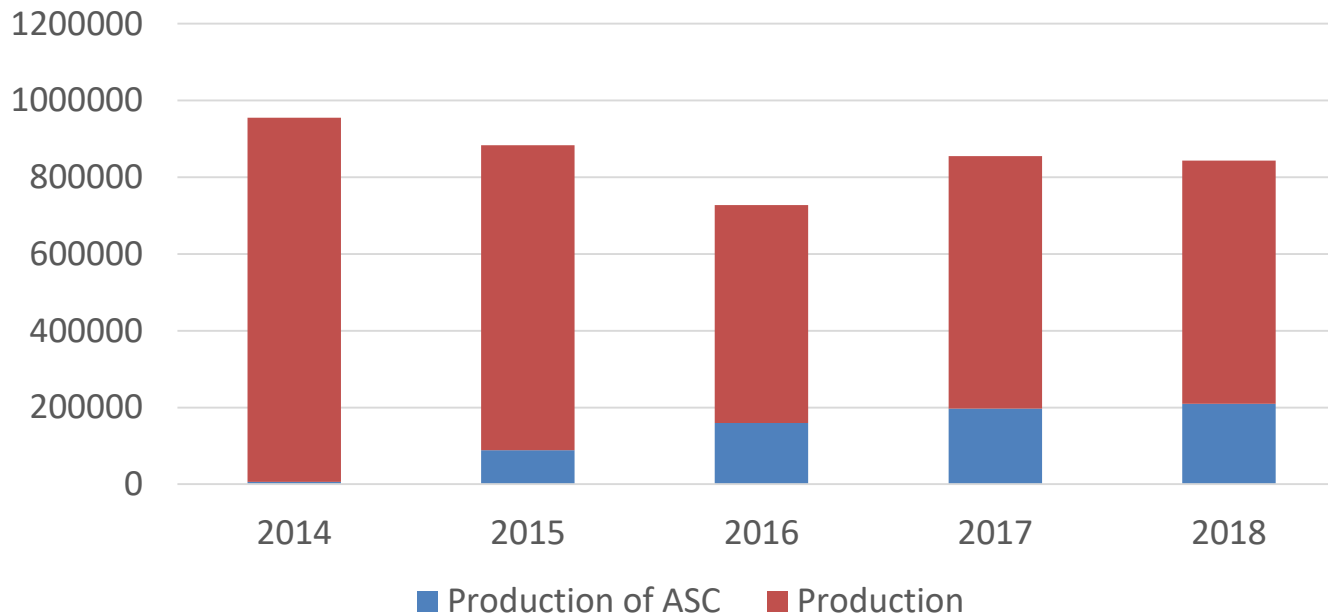
AquaChile first to halt smolt production at lake sites. Others follow suit.

The world's second-largest salmon farmer AquaChile has announced that it will no longer produce smolt in lakes. It closed all its 12 lake operations in the third week of May, reports [La Tercera](#).

Shift in production practices through the uptake of ASC certification.

Over 25% of certified salmon in 2018.

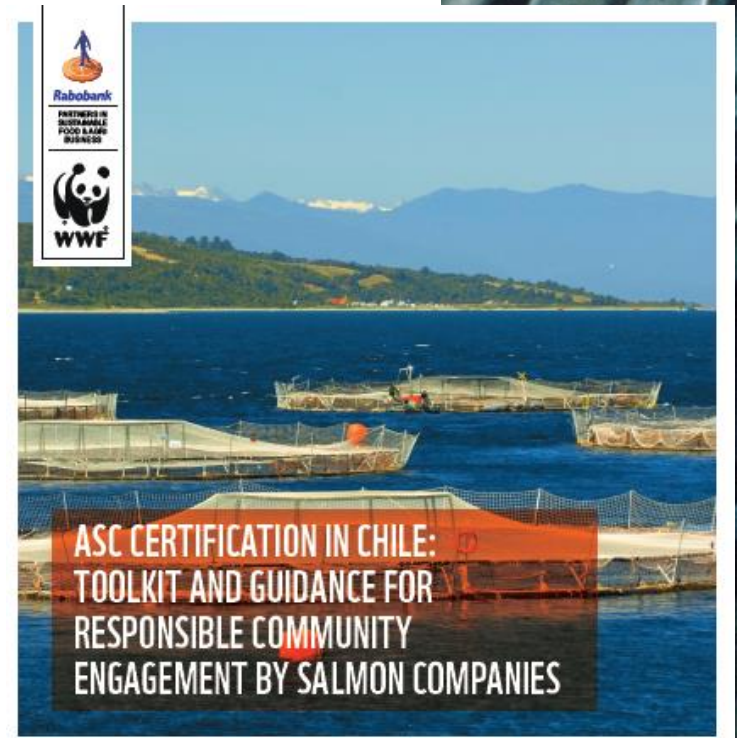
ASC vs total salmon production in Chile



Focus for the Future:

2. To tackle concerns regarding social issues:

Focus on the development of a toolkit aimed for communities, to educate and empower them to improve their relationship with companies.



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Focus for the Future:

3. Promoting an Ecosystem Approach to Aquaculture: revising the criteria for site selection, implementing new zoning methodology.

4. Public policy: proposal to change regulatory framework based on environmental and social issues of today and for the future.



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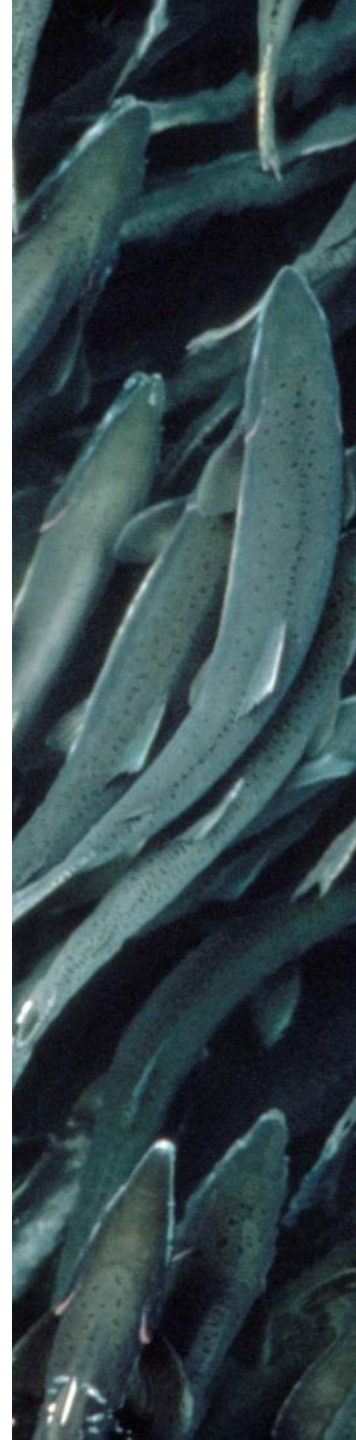
Focus for the Future:

5. Sustainable procurement of raw materials for Feed.

6. As part of our Climate Change strategy work on mitigation of CO2 emissions



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Recommendations

1. Social crisis:
The industry needs the social licence to operate based on dialogue and concrete and transformational change towards sustainability and social equity.



Recommendations

2. Biodiversity loss:
urgent, concrete and
measurable changes need
to be implemented by the
industry to ensure the
operations are under the
ecological carrying capacity
and adapt to climate
change.



Recommendations

3. Climate Change:
Operations adapt to
climate change and
contribute to the
emissions reduction
targets and 1,5 goal.

Thank you



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