



**SalmonChile
INTESAL**

**Management and
Reduction of Coastal Solid
Waste in Salmon
Aquaculture**

SalmonChile - INTESAL

May 2018

Contents



- 1. Industry Overview**
- 2. National Laws and Regulations (Environmental & Waste)**
- 3. Industry Actions for Management and Reduction of Solid Waste**

Our Organization



About us

**Research & Development Branch of the Salmon Industry
Association (SalmonChile)**

Members

50 companies

15 salmon farmers: ~85% the production

35 Suppliers: feeds producers, labs, logistic, etc.

Salmon Research Institute



Intesal - Our Mission

To articulate and generate state-of-the-art scientific and technological knowledge that contributes to the development of a sustainable salmon farming industry in Chile.

www.intesal.cl

Study Areas



Environment

Analysis

**Fish Health &
Food Safety**

**Management
R & D & i**



Products and Services



SalmonChile
Asociación de la Industria del Salmón de Chile A.G.

Google™ Búsqueda personalizada

Buscar

Home > Salmonicultura > Informe Sustentabilidad



Informe de Sustentabilidad Industria del Salmón 2015

Como sociedad vivimos una época desafiante, en la que las fronteras son cada vez más difusas y los viejos paradigmas están siendo superados por nuevos ideales. Una época en la que los avances de la tecnología han multiplicado el número y la velocidad de los contactos entre las personas, y donde el acceso a la información y la demanda por transparencia son bienes cada vez más valorados. Y nuevos tiempos, requieren nuevas respuestas.

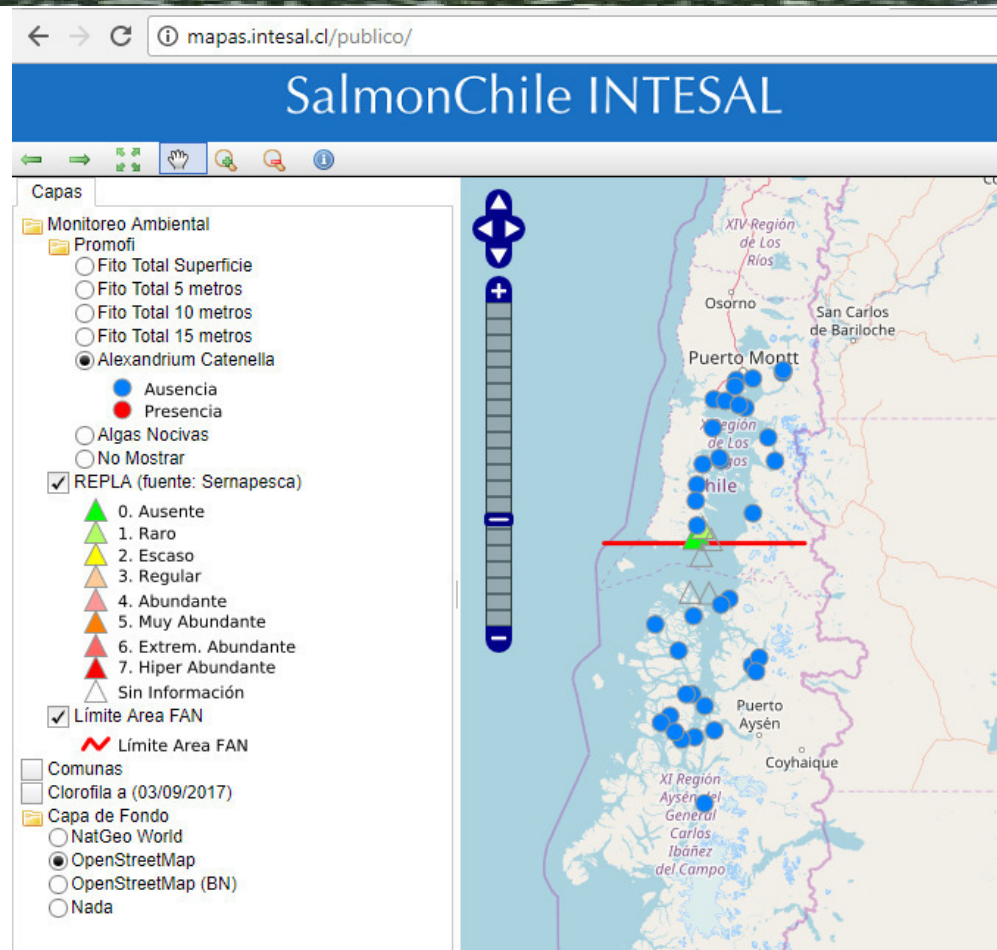
Esa es la mirada con que SalmonChile está trabajando para ajustarse y adaptarse a las nuevas expectativas y a los cambios que exige la sociedad hoy.

Sabemos que la salmonicultura y otras industrias que utilizan recursos naturales deben dar un giro y construir con sus públicos objetivos sus estándares de operación como señal de transparencia.

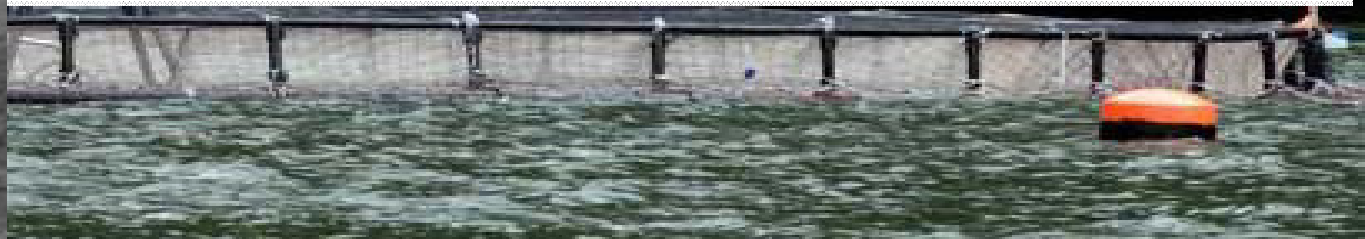


<http://www.salmonchile.cl/es/sustentabilidad.php>

Maps



<http://mapas.intesal.cl/publico/>



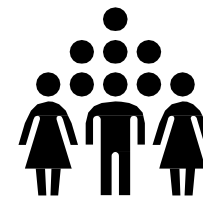
Socio-economical growth for Southern Chile

Socio-economic

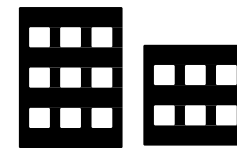


Salmon industry is (2016):

Third economic activity in
the country and the first in
southern of Chile



+ 61.000
Employees

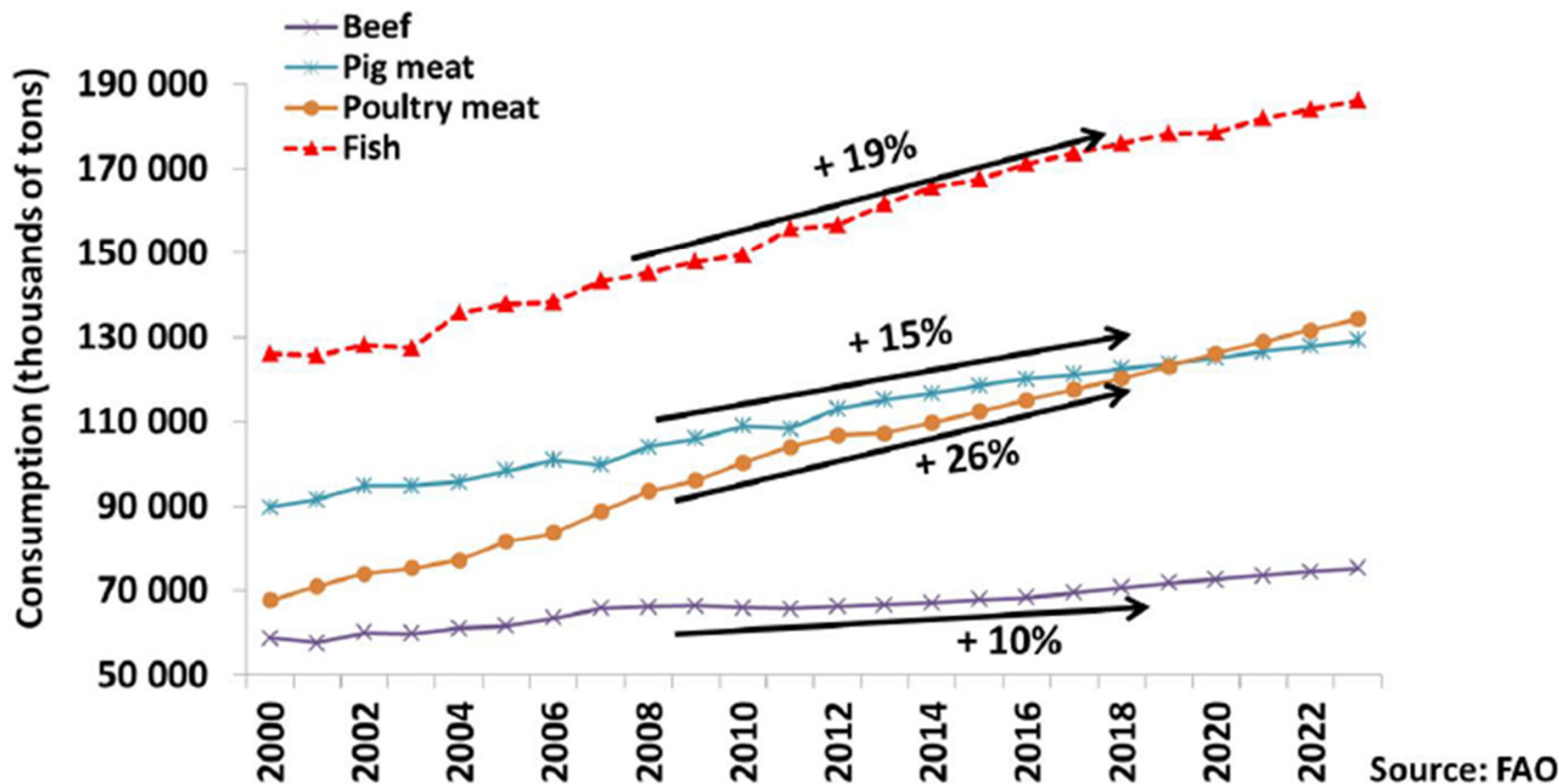


+ 4.000
small-medium
sized
companies

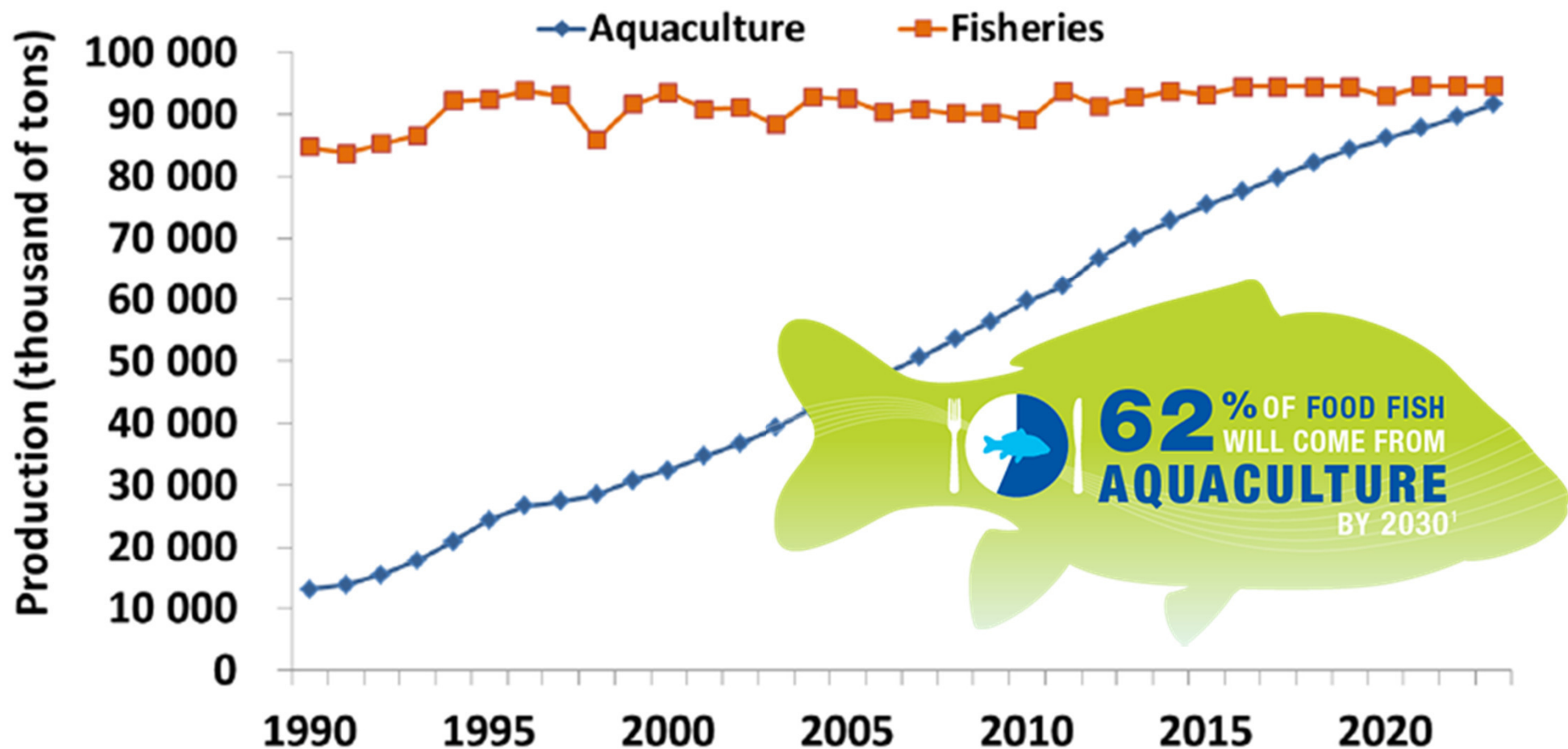


SalmonChile
INTESAL

World's leading meat protein



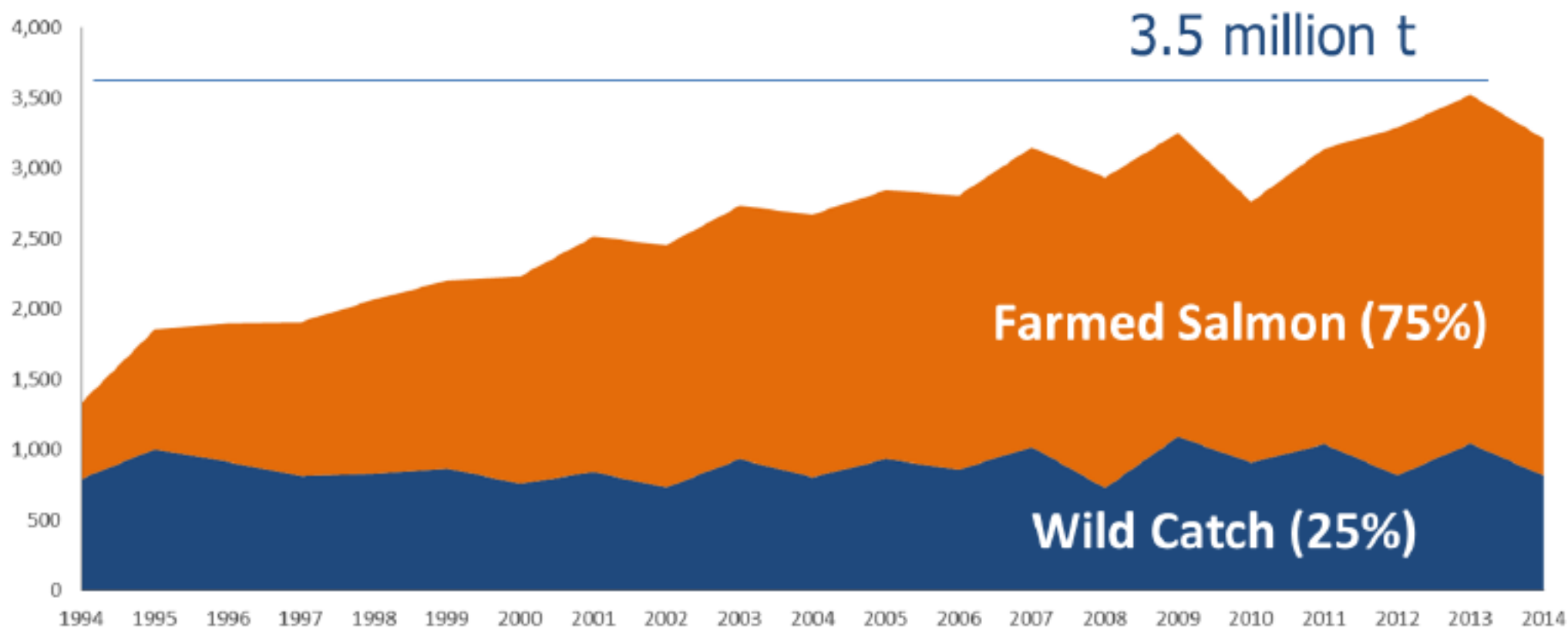
Aquaculture Expectations



Source: FAO

<https://www.aquaculturealliance.org>

Farmed vs wild

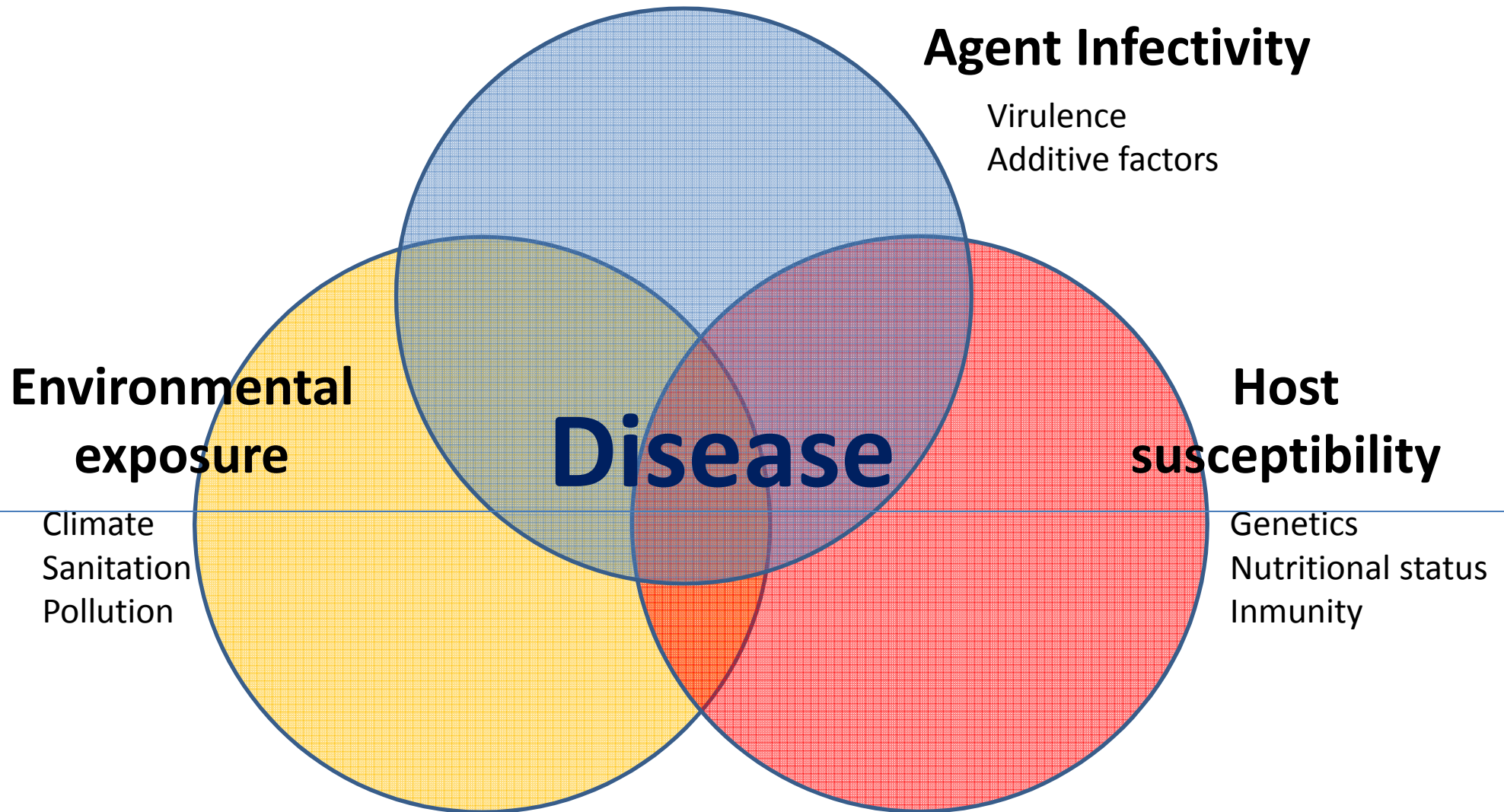


Source: Kontali / Multiexport Foods



Our Challenges?

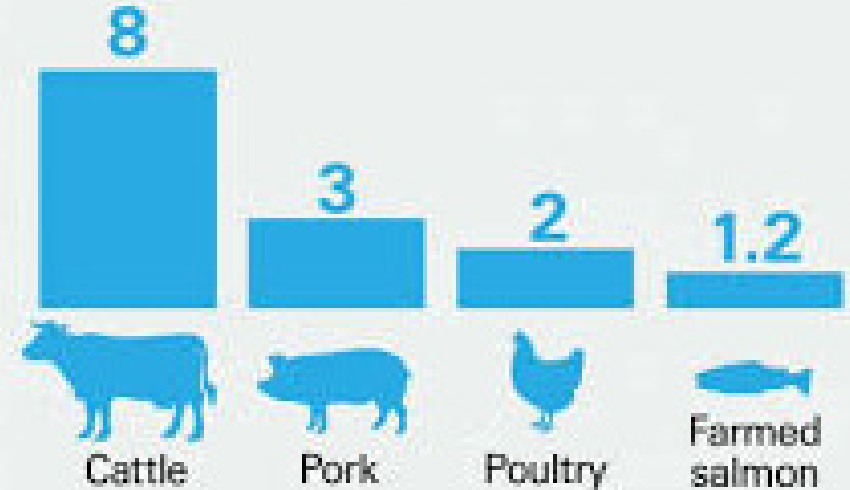
Epidemiologic triad



Socio-economic

- A 100g portion of farmed salmon contains:
- 20.4g protein
 - 15g fat
 - 2.69g saturated fatty acids
 - 1.83g Omega 3
 - 183 calories

FEED CONVERSION RATIO OF SELECTED MEAT AND FISH WORLDWIDE





Chilean environmental and waste disposal regulations for the salmon industry ?

Regulations



Solid waste

- DS 320 :Environmental Regulation for Aquaculture (Ministry of Economy)
- DS 594: Health & Environmental Working Conditions (Ministry of Health)
- Law 20.920: Recycling Law

Liquid waste

- 1ª & 2ª Quality Standards
- Environmental Emission Standards (Ministry of Environment)
- DS 1-92: Regulation for Control of Water Pollutants (Ministry of Defense)

Dangerous substances

- DS 148 Harzadous Waste Regulation (Ministry of Health)

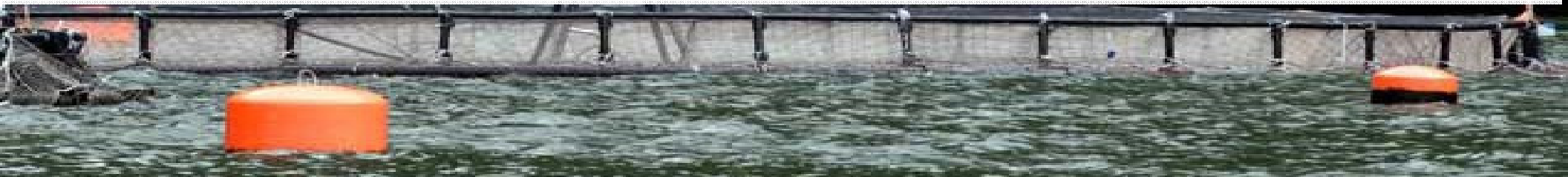
Actions



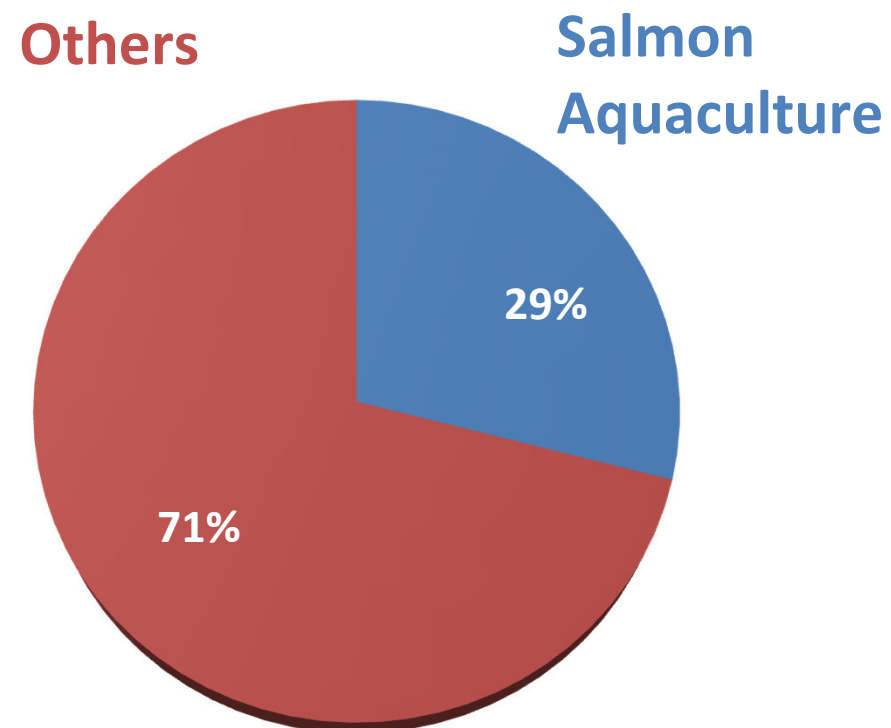
1. Beach Cleaning Actions

2. New technologies for management and disposal waste

Small Actions (2002 - 2007)



- 69 actions
- 10 tons of waste
- 2,126 participants



Collaborative

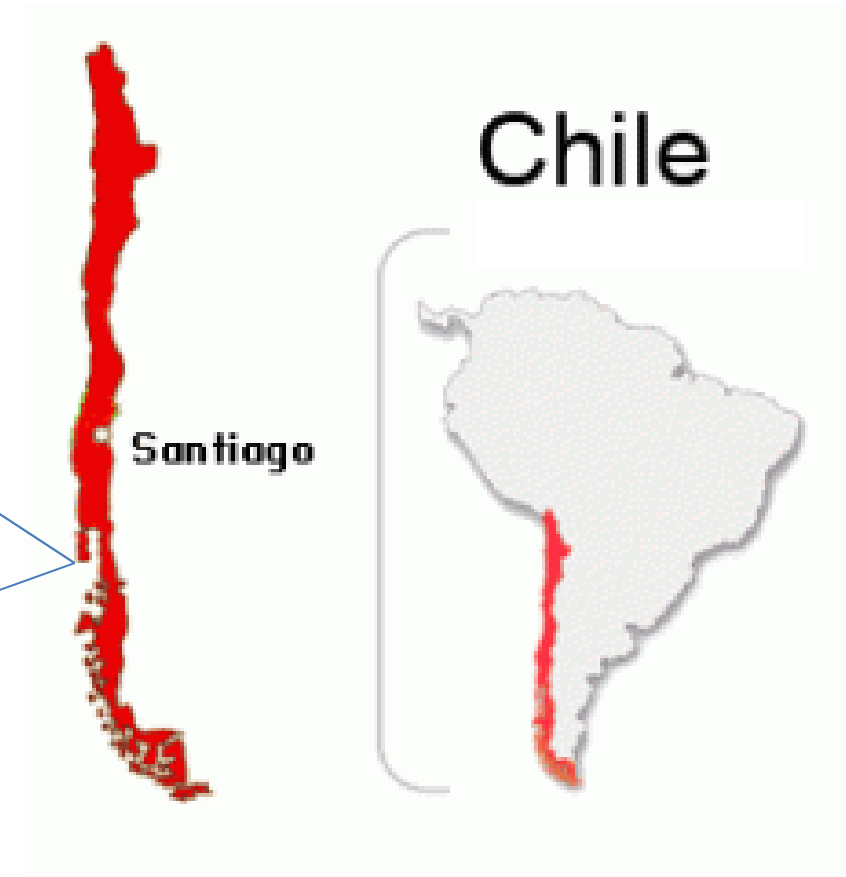
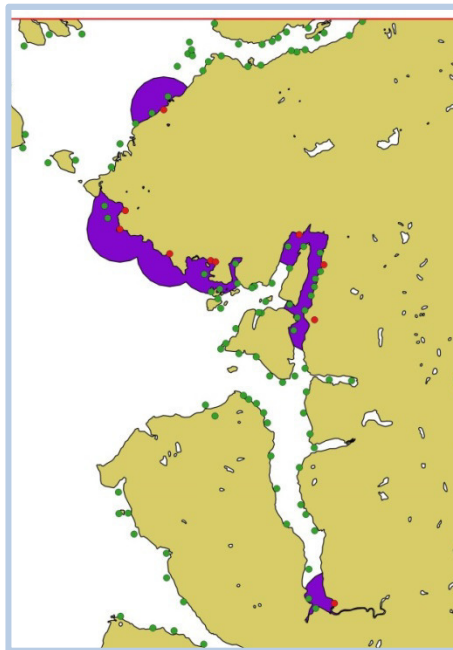


Rutinary program for the whole industry

Large Actions (2015 - 2018)



Hualaihue Commune



Hualaihue Case



Diagnostic

Stakeholder
meeting

Training and
Cleaning



Hualaihue case



SalmonChile
INTESAL
INTESAL



Hualaihue case



[Beach_Cleaning.mov](#)

Web and Big Data Tools



RESIDUOS

Ingreso detalle

Todos los campos son requeridos

Fecha Guía Despacho : martes, 01 de agosto de 2017

Origen : Experimental

N° Guía Despacho : 2564

Residuo :

Cantidad :

Disposición (tipo) :

Disposición (detalle) :

Ingresar Detalle

Borrar Reporte

Finalizar Reporte

Residuo	Cantidad	UM	Disposición
BOLSA ALIMENTO MEDICADO	2,0	KILOS	RECICLAJE

Solid Plastics



Solid plastics represent 12 % of items (weight[t])

ITEMS
Medicinal Bags
Chem-Pharm Container
Intermediate Bulk Container
Ammonia Container
Maxi Bag Non Medicines
Nylon plastics
Plastic pipeline
Styrofoam
Boats
Buoy/Floats

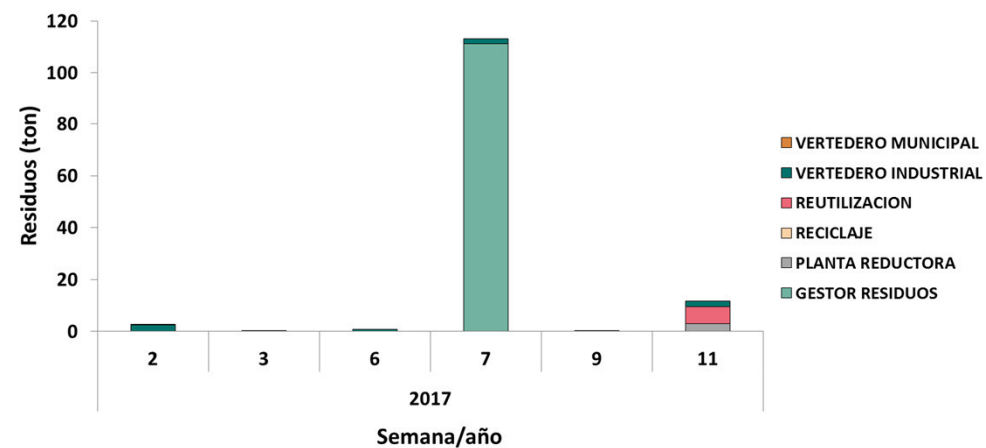
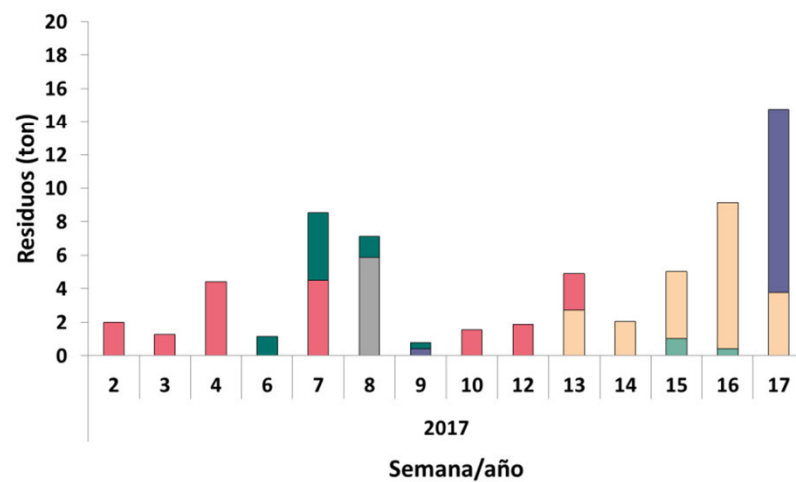
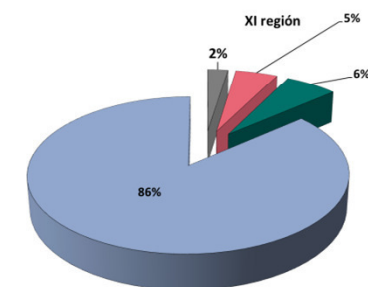
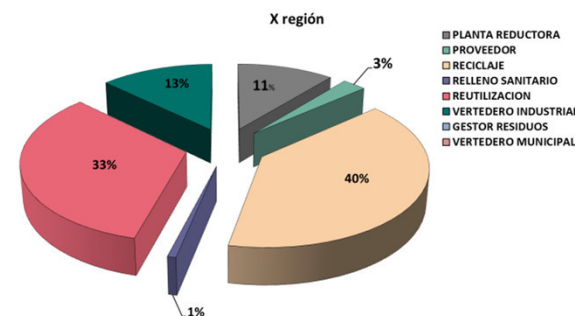
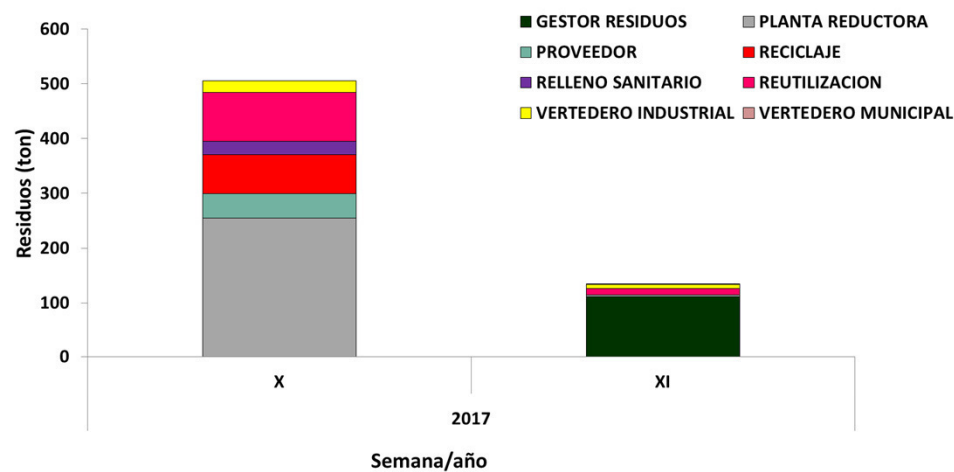
Solid Plastics



January 2017 - April 2018
5 producers
46 farms

Farms at sea	Weight (t)	Weight(%)	Disposal
Non-Dangerous	266.0	98%	Recycle-Reuse/Landfill
Dangerous	4.4	2%	Dangerous Waste disposal Sites

Reports



Future Work



- 1. Build Indicators: waste(t)/salmon(t)**
- 2. Trends production and evaluation current management**
- 3. Design future intervention strategies**



SalmonChile
INTESAL

**Thank you for
invite us!**

