

Chile – is it a lasting comeback or will they struggle again?

Fish Pool Christmas Seminar, 22 Nov 2017
Dag Sletmo, DNB Ocean Industries - Seafood
dag.sletmo@dnb.no, tel: (+47) 95286134

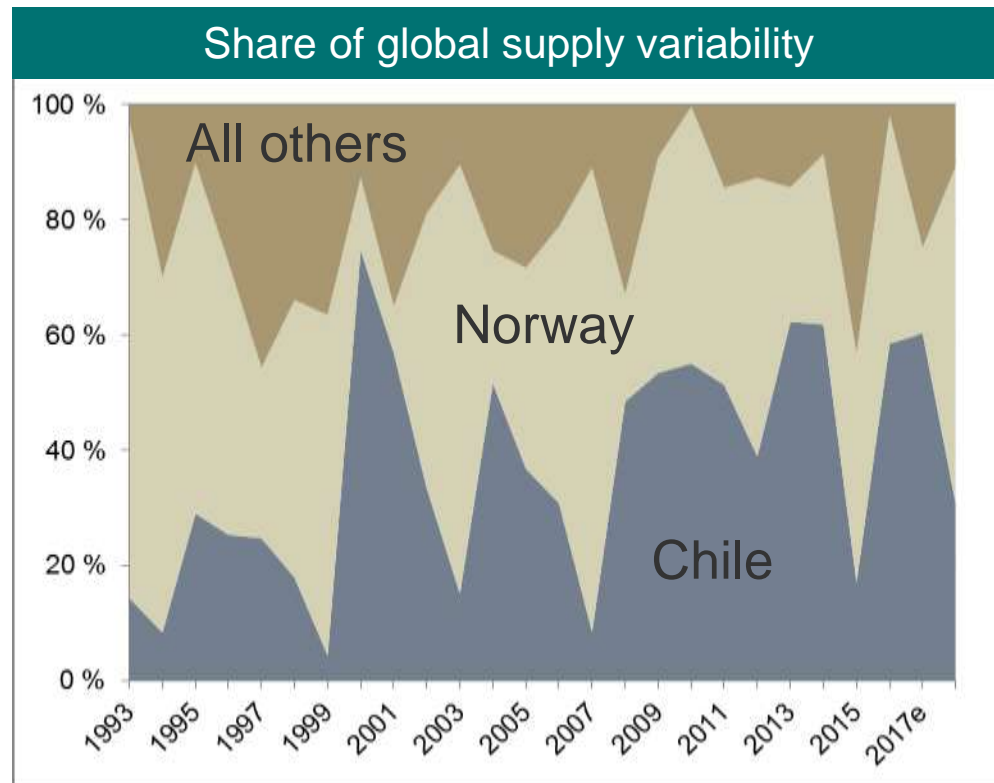
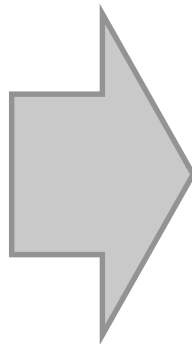


Why is Chile relevant from a Norwegian perspective?

Chile explains half of the price variability

Chile last 10 years:

- **21%** of global production
- **53%** of global supply variability



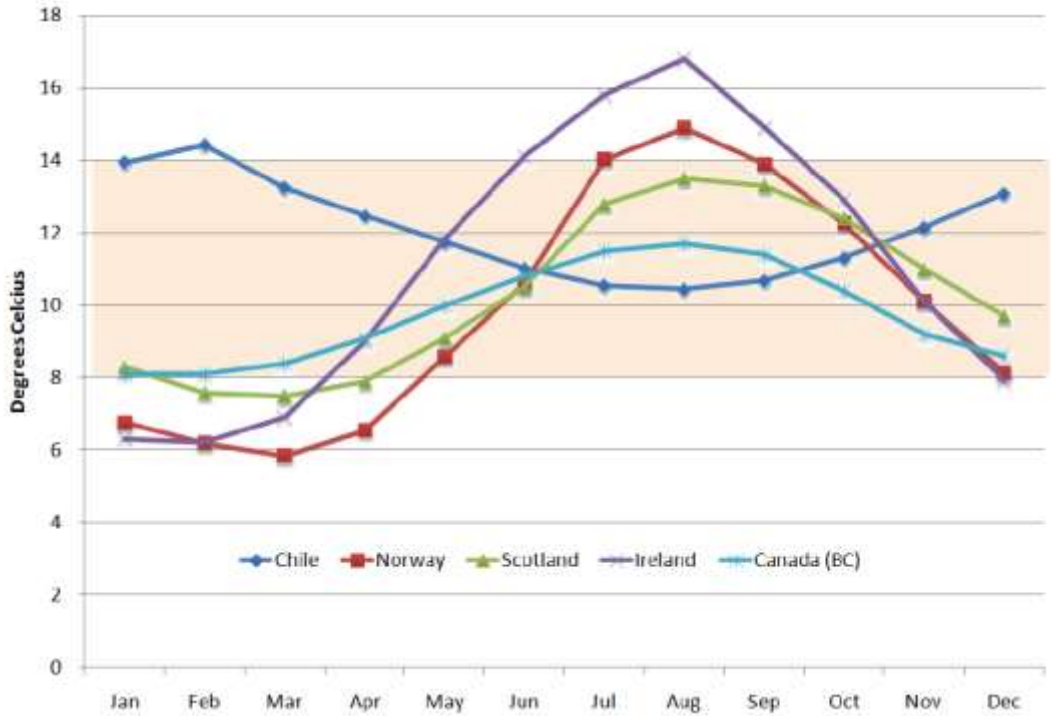
Agenda:

- **The historic problems**
- The consequence of the problems
- The current status

Chile is super from a natural point of view

So why the problems?

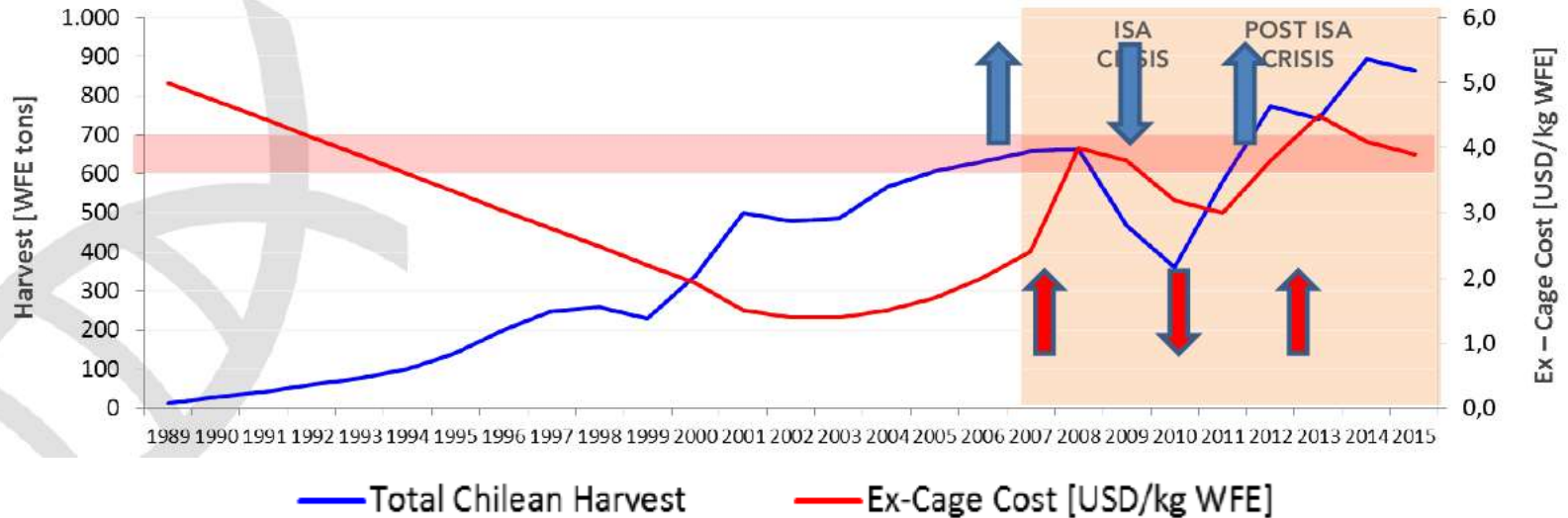
Sea temperatures



Things were good until 2007..

Development of Chile's salmon farming industry

Two decades of healthy growth.....BUT

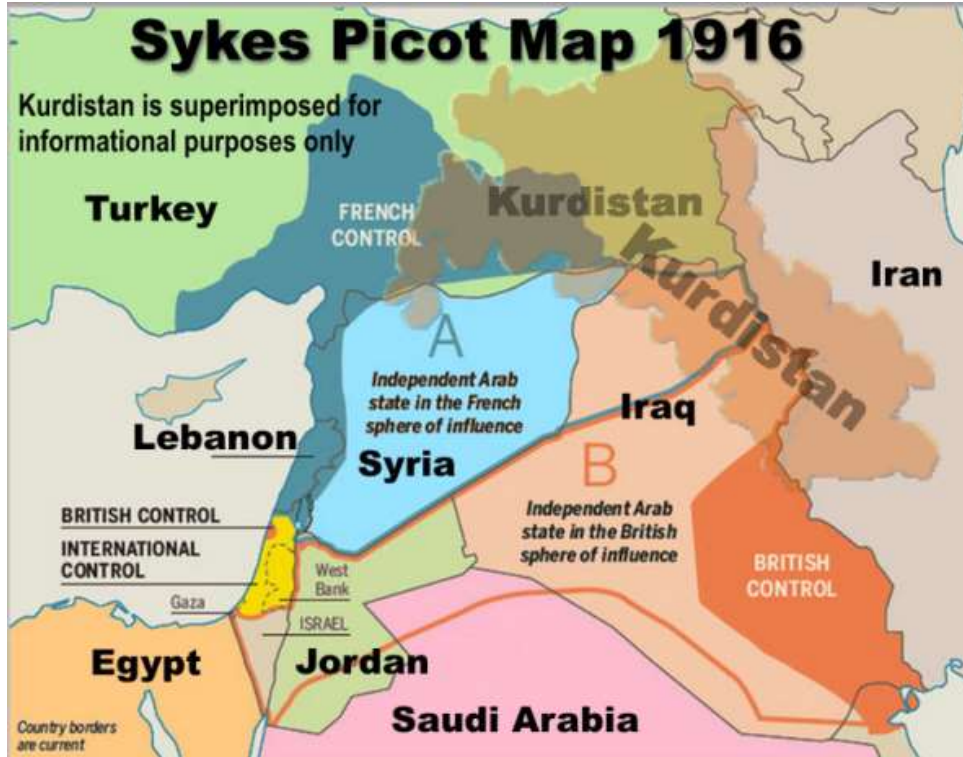


The original problems

- «Desk top» placement of original licenses
- High density
- Weak sanitary regulations
- Weak cooperation & common infrastructure

Many issues solved after ISA crisis. But not all..

A license = a site

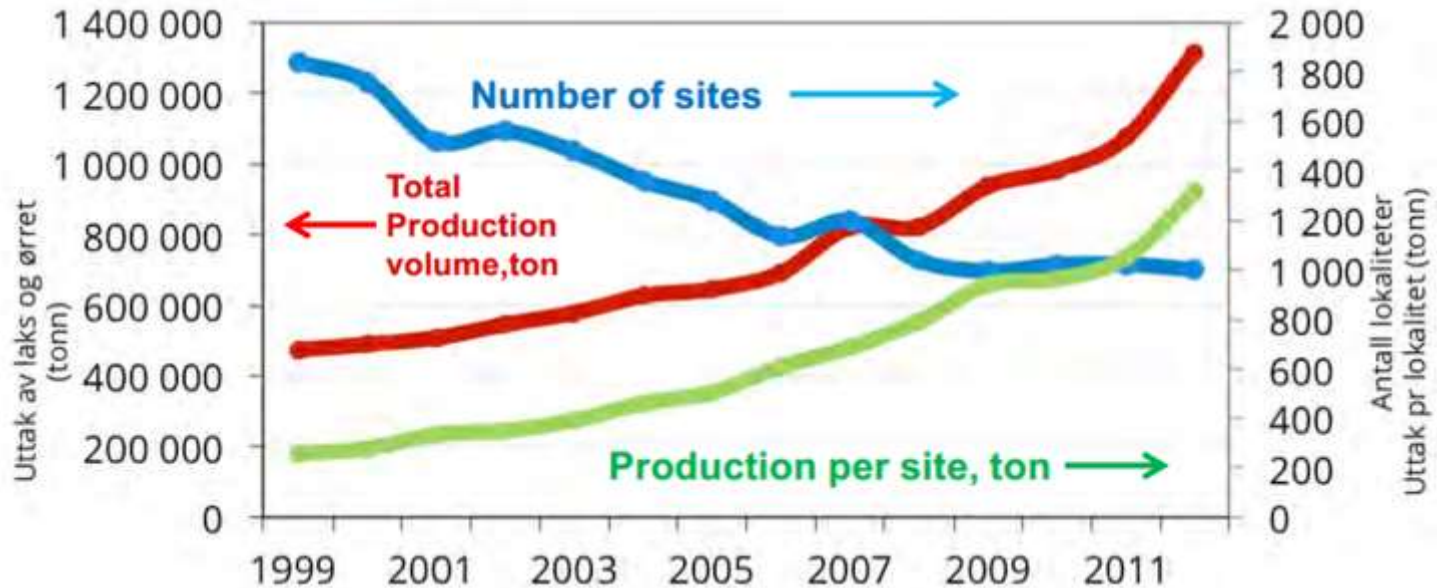


DNB Seafood

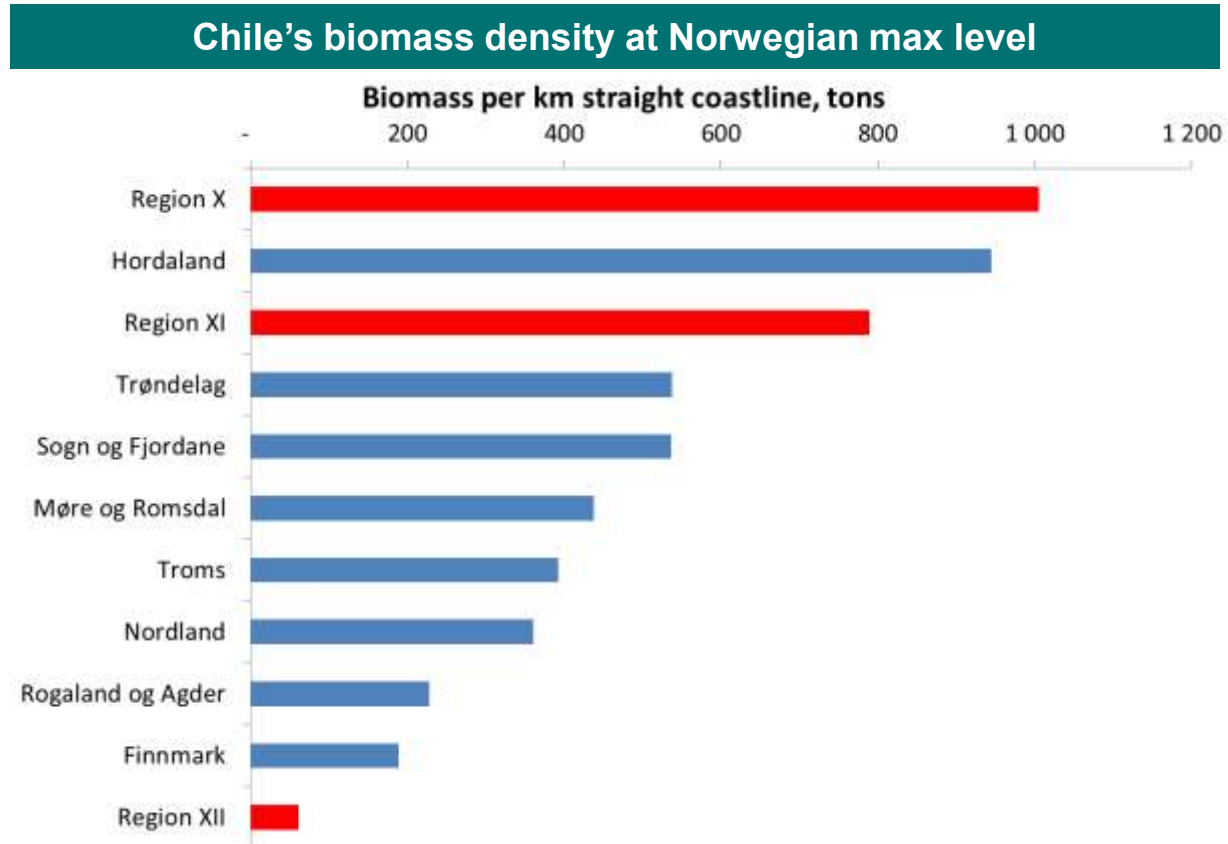
Major site optimization in Norway

But not in Chile; when license = site restructuring difficult

Strong decline in # of Norwegian sites even as volumes exploded



High biomass density

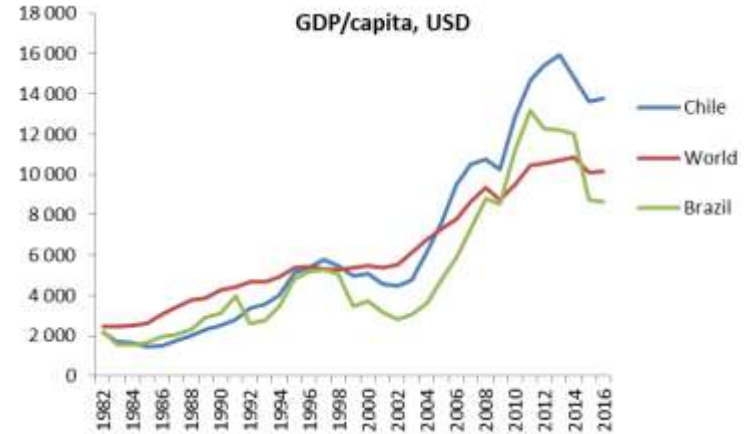


Liberalistic economic policy has served Chile well

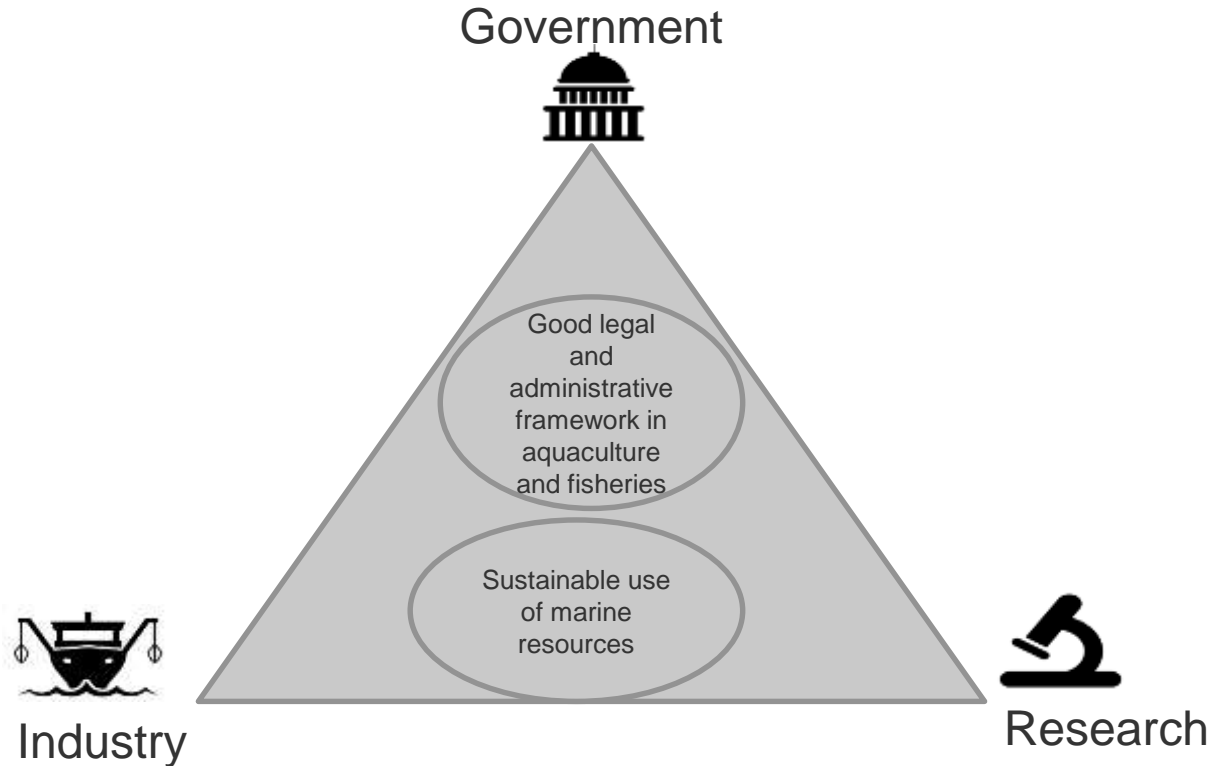
But biologic industries are different!



Chile an economic success story



Cooperation is key for salmon farming success



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Consequences – boom & bust!

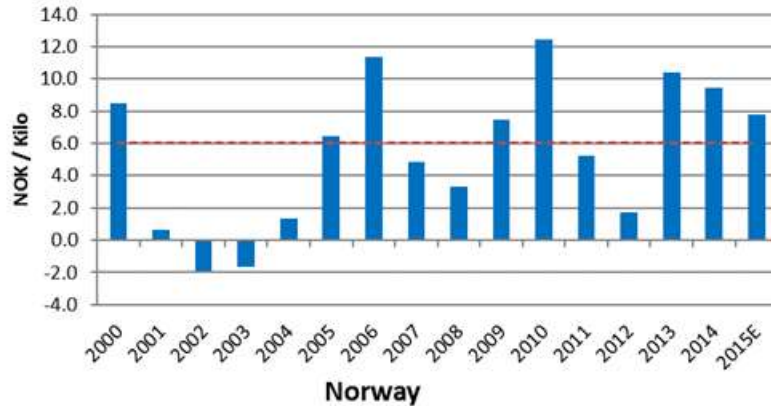
Boom & bust

- Prices (like Norway earlier..)
- Biology (unlike Norway)
 - Volume collapse
 - Cost increase

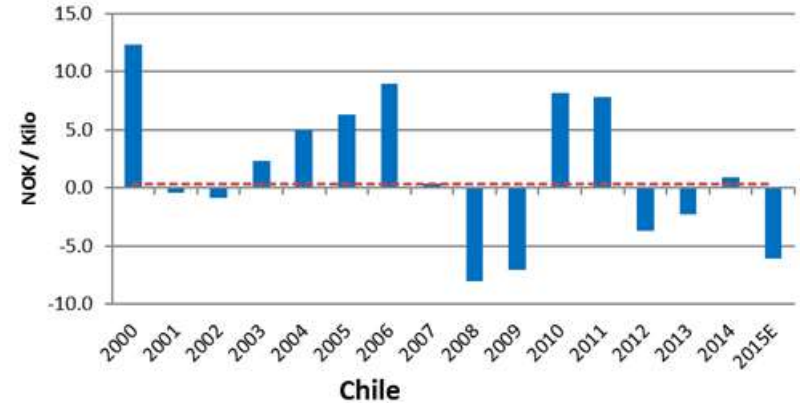


Chile more lower and more volatile margins

Norway - earnings before tax (NOK/kg)



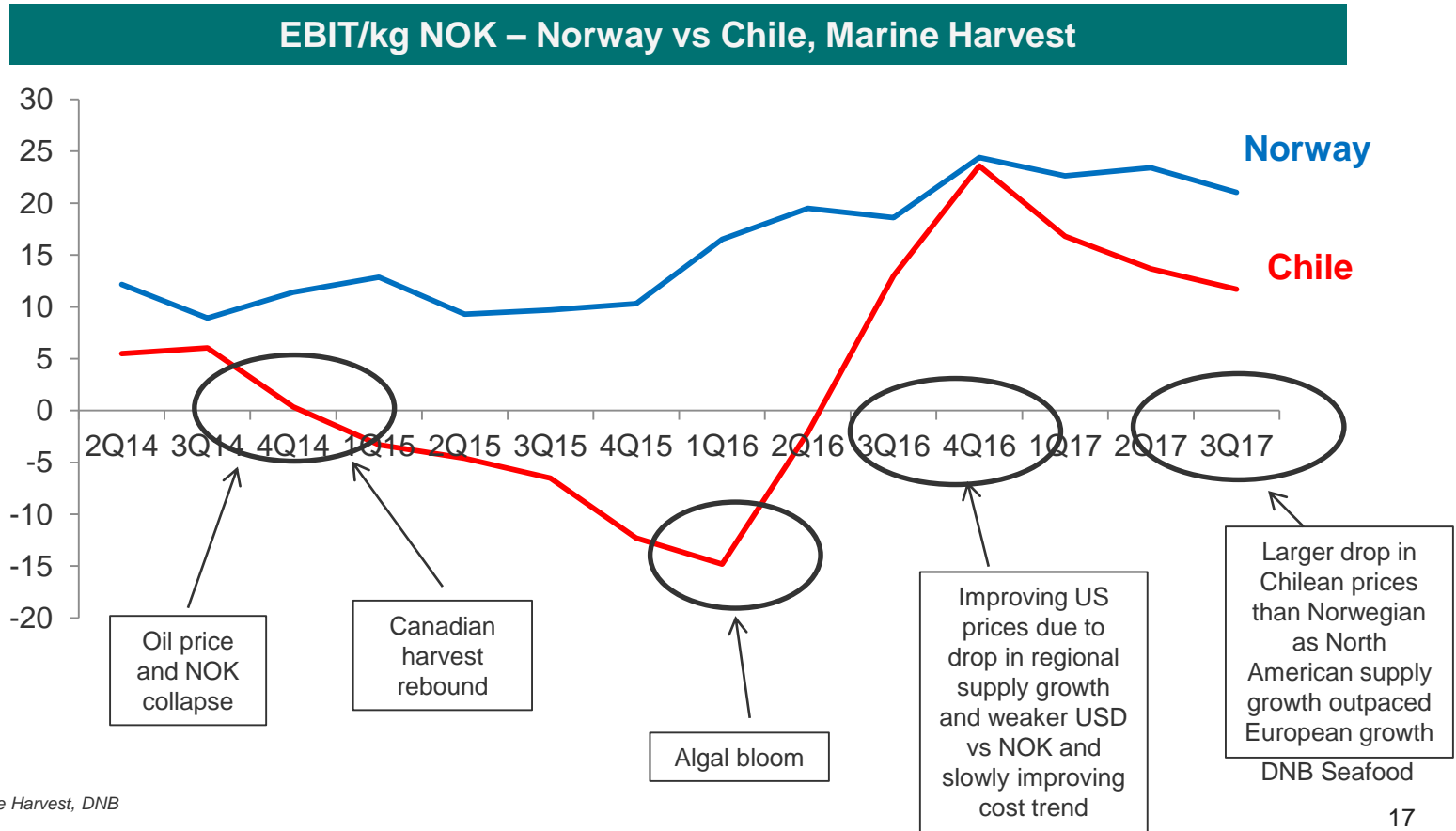
Chile - earnings before tax (NOK/kg)



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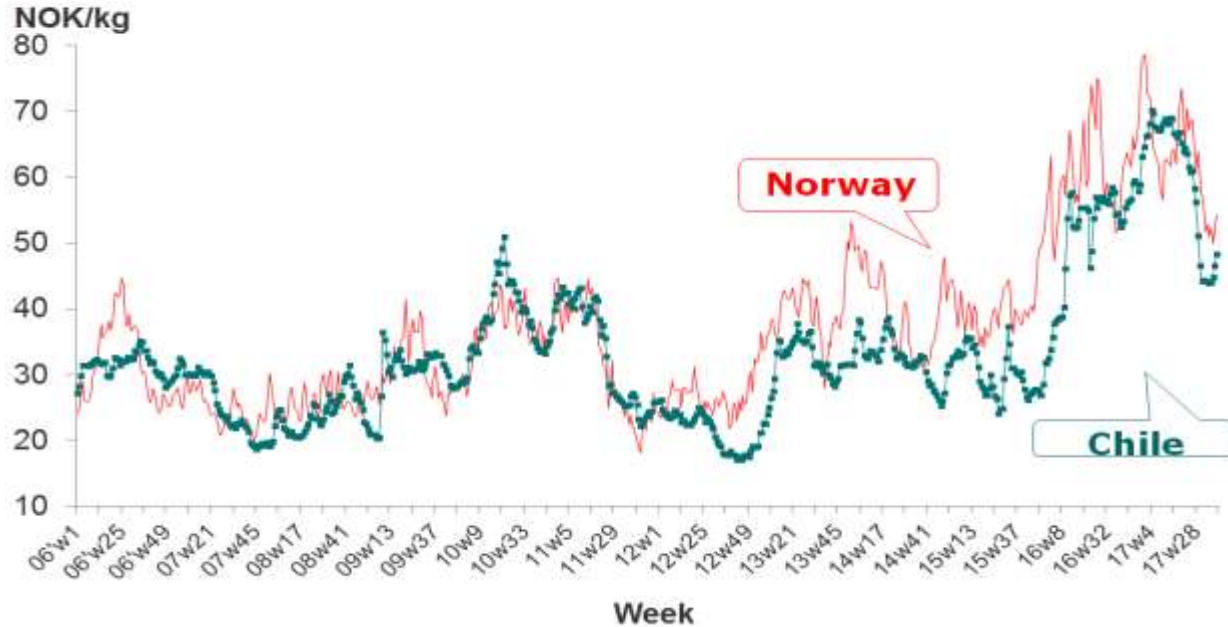
The Chilean pain is over



Norwegian and Chilean farm gate prices strongly linked..

Chilean and Norwegian prices move in tandem

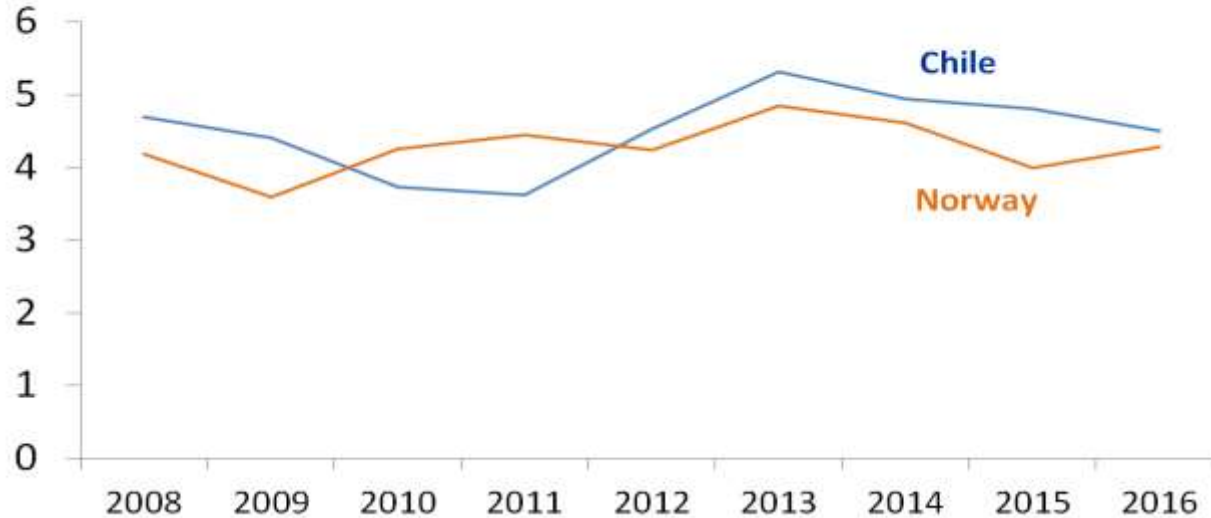
Chilean vs Norwegian prices in NOK/kg



Chile regaining cost leadership in 2017?

Average production cost Chile vs Norway

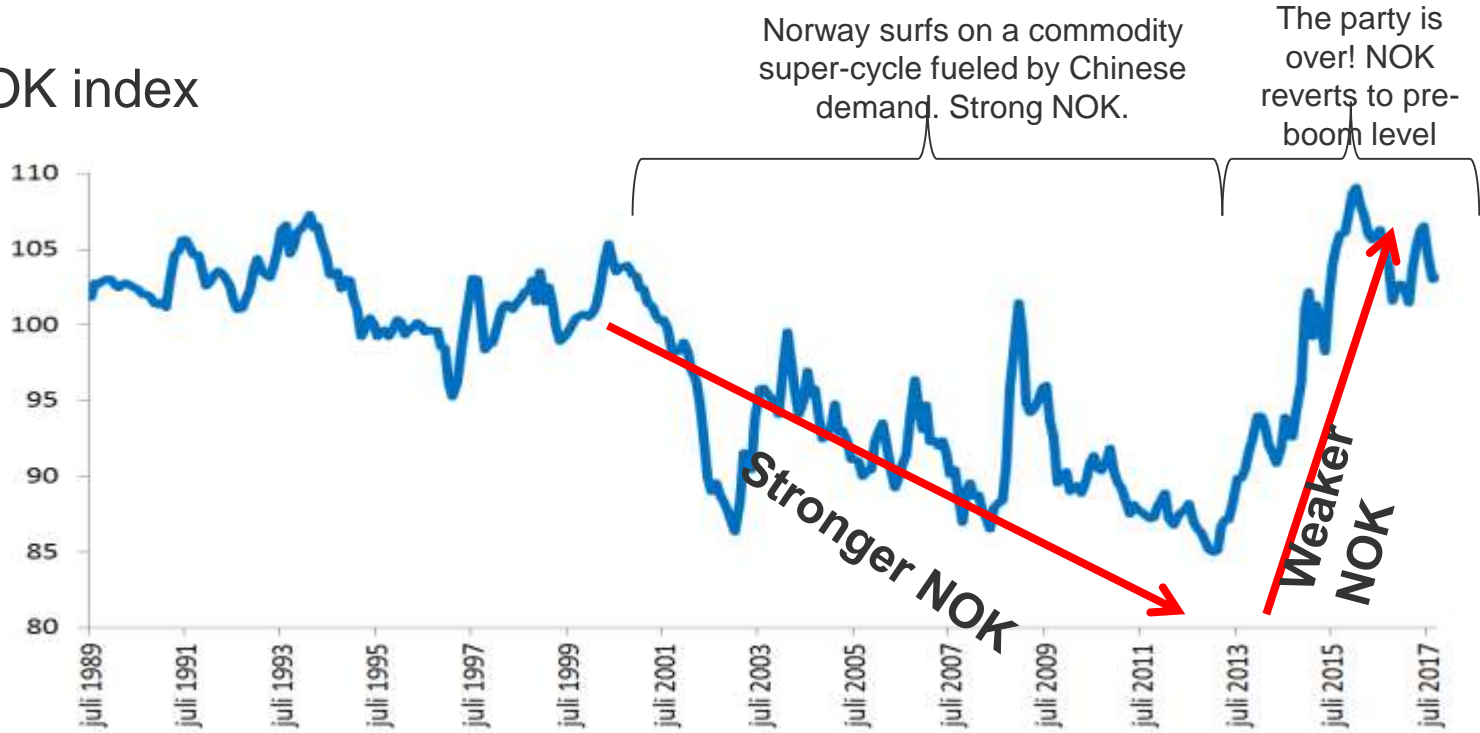
Average production cost for salmon (HOG FOB plant in USD/kg)



Source: company reports, Fiskeridirektoratet, DNB Santiago

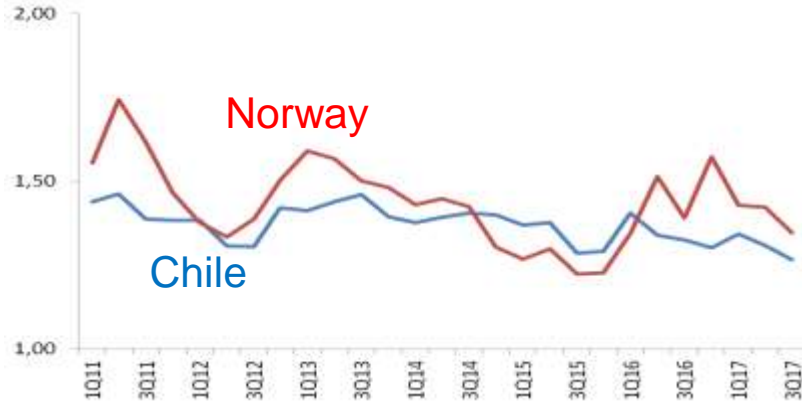
NOK – the party is over, back to normal!

NOK index

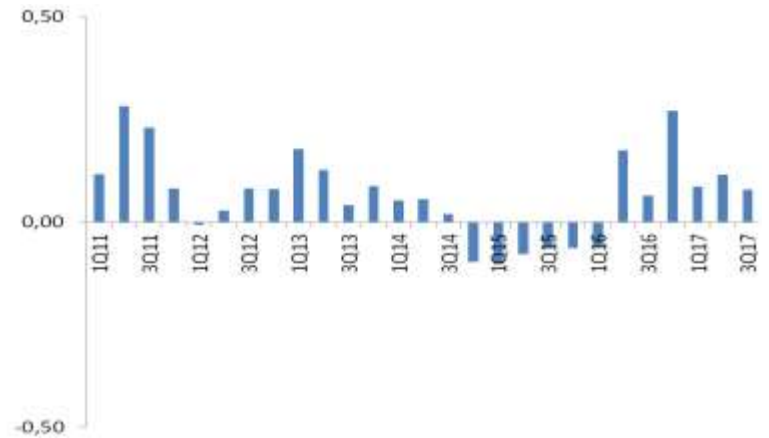


FX impacts relative feed prices

Feed prices in USD/kg



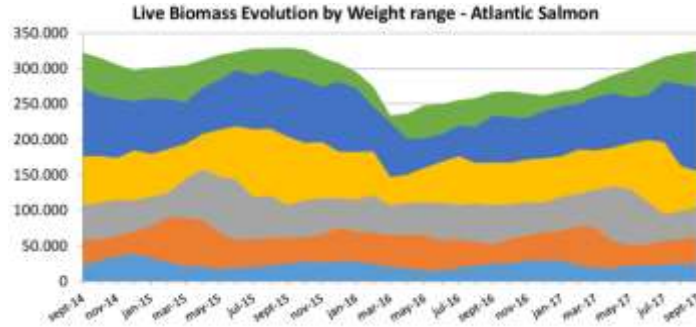
Feed price in Norway less price in Chile, USD/kg



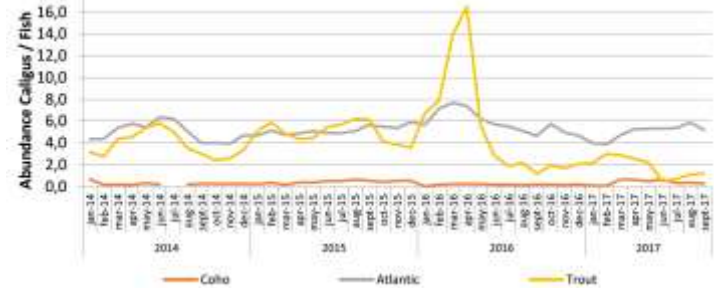
- It takes time for changes in USD-NOK to feed into the Norwegian feed price due to long supply chains, FIFO accounting and FX hedging. (Regional development in raw materials is also a factor)

Okay biology..

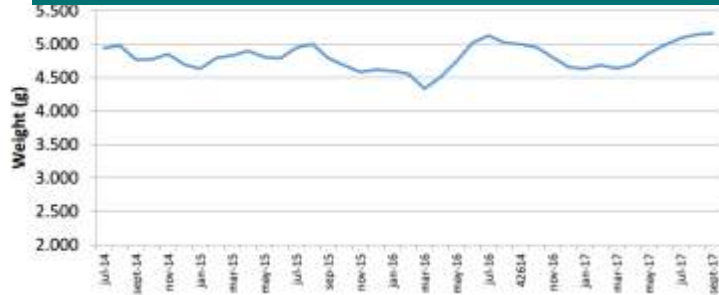
Biomass Atlantics, tons



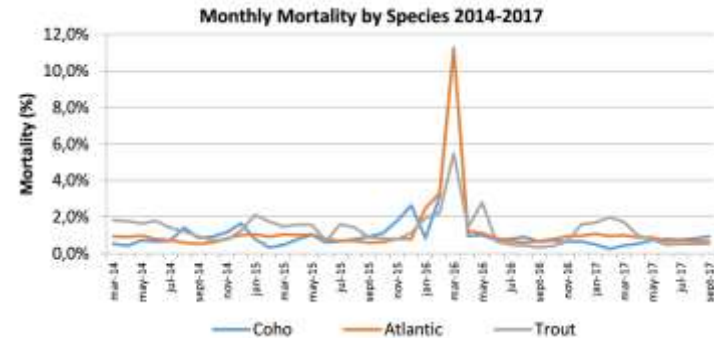
Sea lice (caligus)



Average harvest weights, Atlantics



Monthly mortality

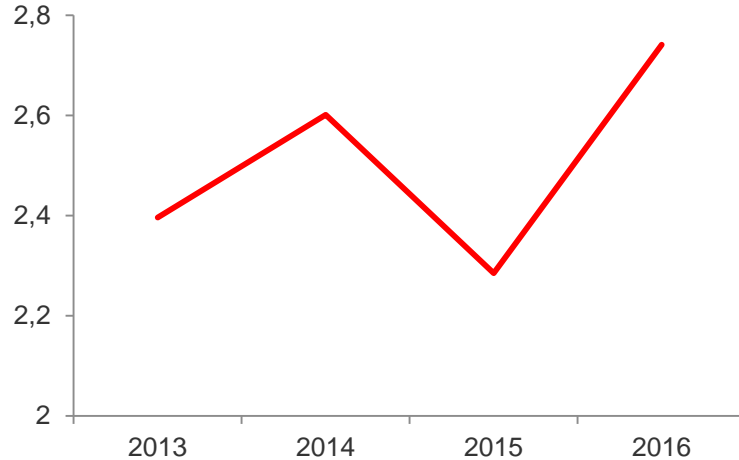


...but antibiotics is still an issue

Although indications of use continuing to trend down

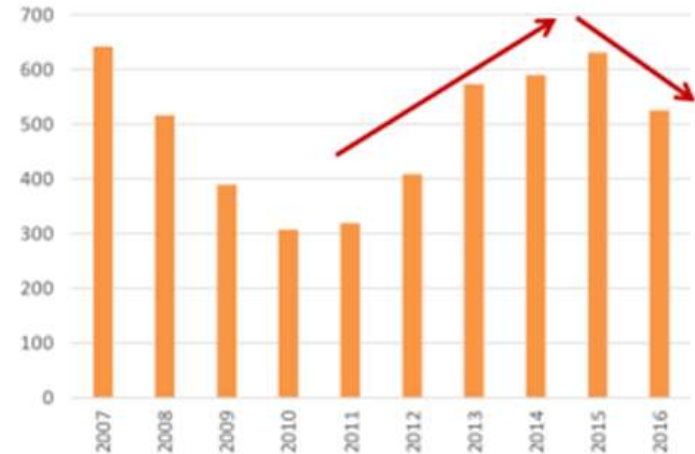
Antibiotics treatments

treatments over production cycle, average GSI Chile members



Antibiotics volume

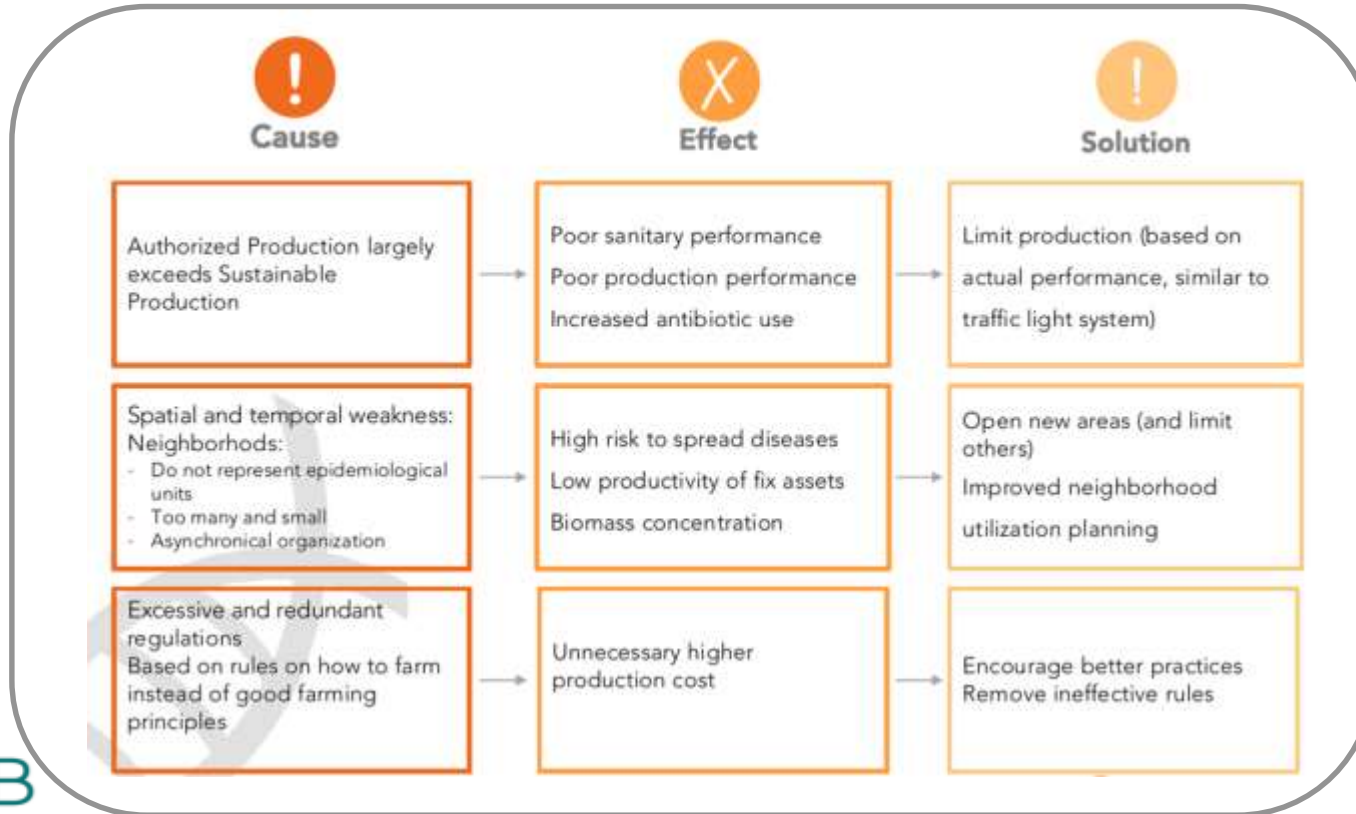
Antibiotic consumption (g/ton)



Lessons learned!

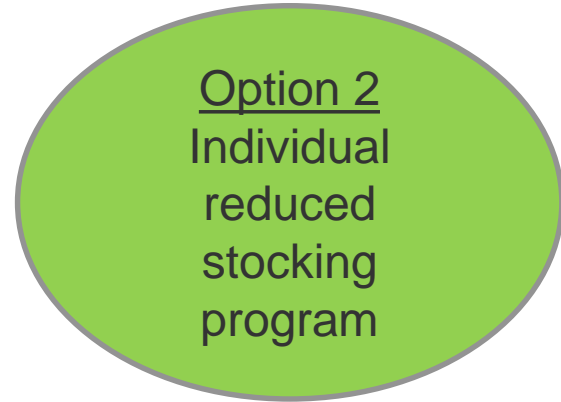
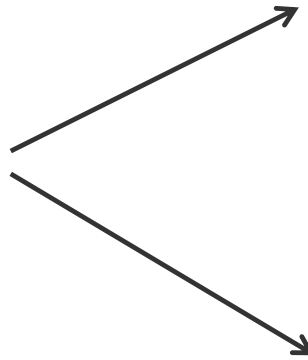
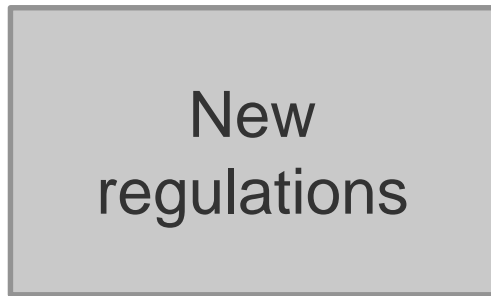


Patrick Dempster,
AquaGen Chile



New regulations largely cap capacity

But devilishly complicated



Summary

- Industry and authorities have reached new understanding
- New regulations limit growth potential
- Cost and sanitary conditions improving gradually
- Site structure should be reassessed, but that will take a long time
- Still need for ability to react **faster** in response to biological problems (regulations, treatments etc)