

A photograph of several large, jagged icebergs floating in the ocean under a dark, overcast sky. The icebergs are white and blue, with some showing vertical ridges and textures. The water is dark blue.

Salmon farming: Food production's ugly duckling?

25 November 2016

Fish farming - An industry with an image problem



My interest in the industry comes from a very different angle

Poverty and starvation are HUGE problems

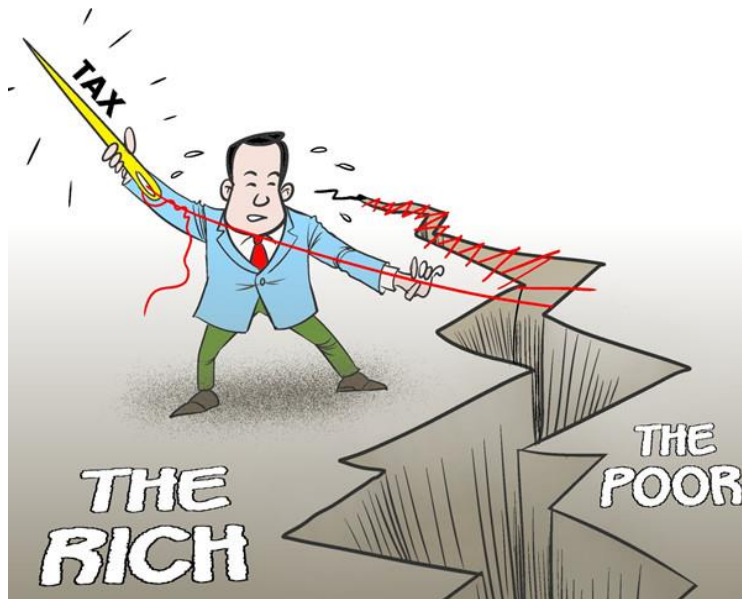
“About 21,000 people die every day of hunger or hunger-related causes, according to the United Nations. This is one person every four seconds, as you can see on this display. Sadly, it is children who die most often.” (www.poverty.com)



How do tackle this terrible problem?

Redistribution of wealth

Produce more food

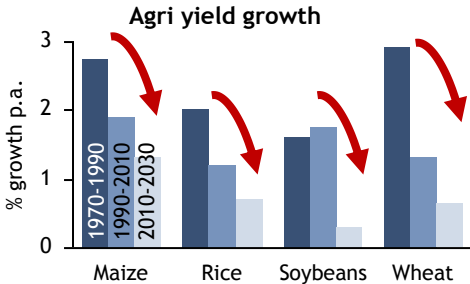
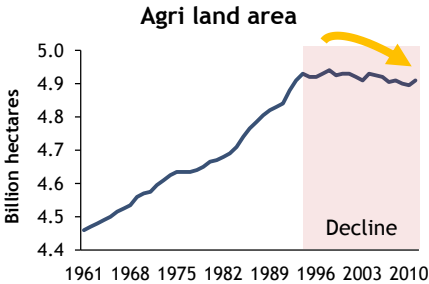


From what source can we grow food production?

Land

94%

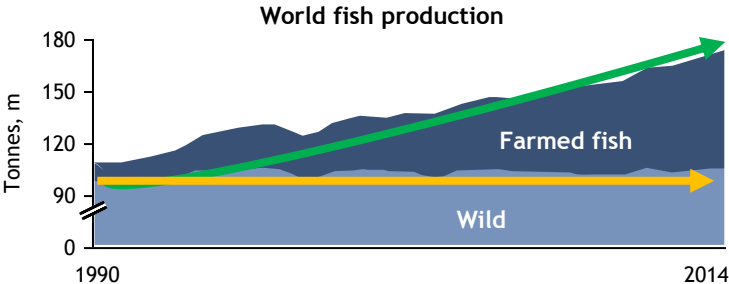
Share of world protein production



Sea

6%

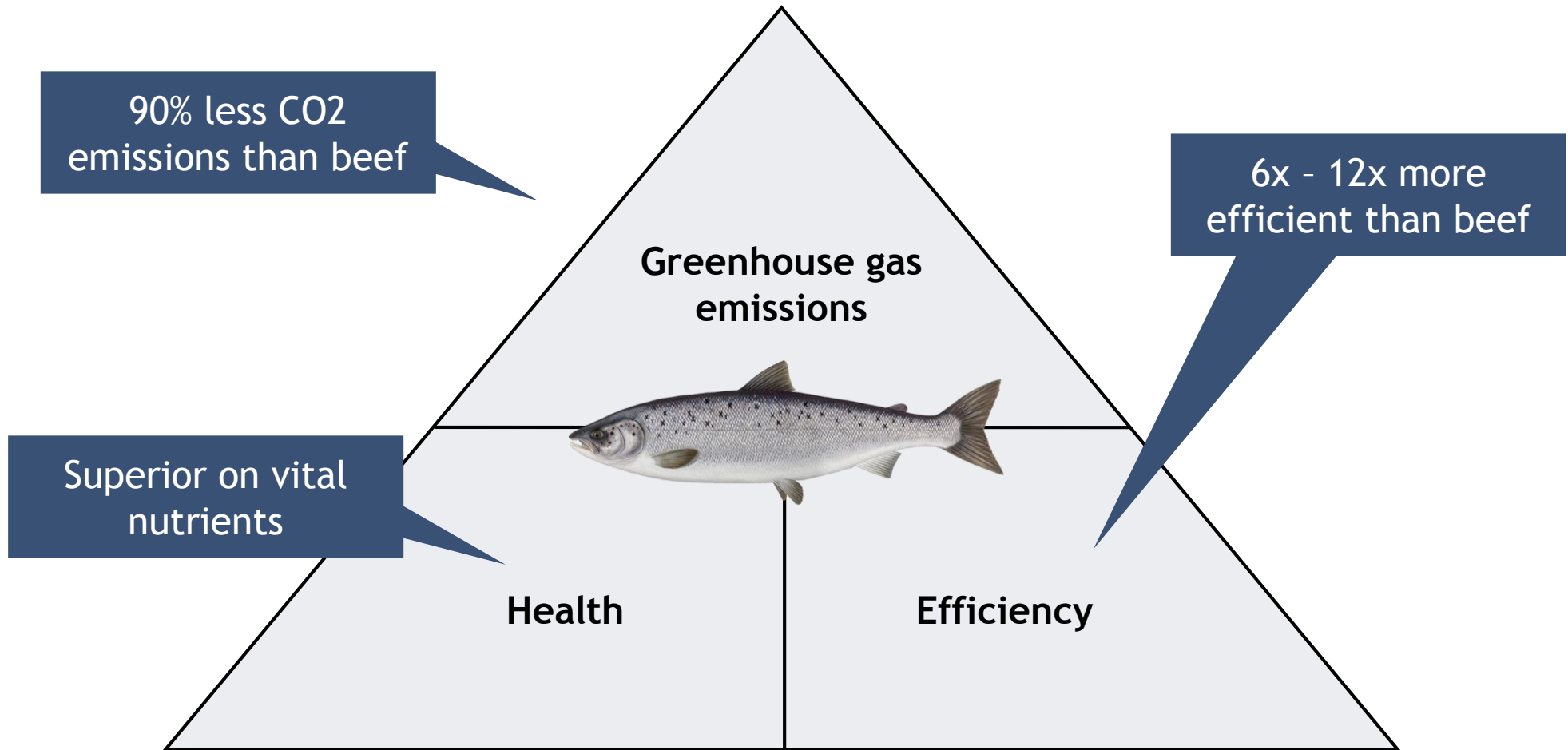
Share of world protein production



Farmed fish significantly outpacing land based food production and capture of wild fish

Source: The Breakthrough Institute, FAO, IFPRI Impact Model, The Economist

How does fish farming stack up on key food production parameters: Efficiency, healthy and greenhouse gas emissions?



Source: Marine Harvest Salmon Industry Handbook, Laksefakta / Norges Sjømatråd

Progress is needed



“I do not ask you to change direction, but I ask you to accelerate progress. We need to work together if we are to overcome world hunger”

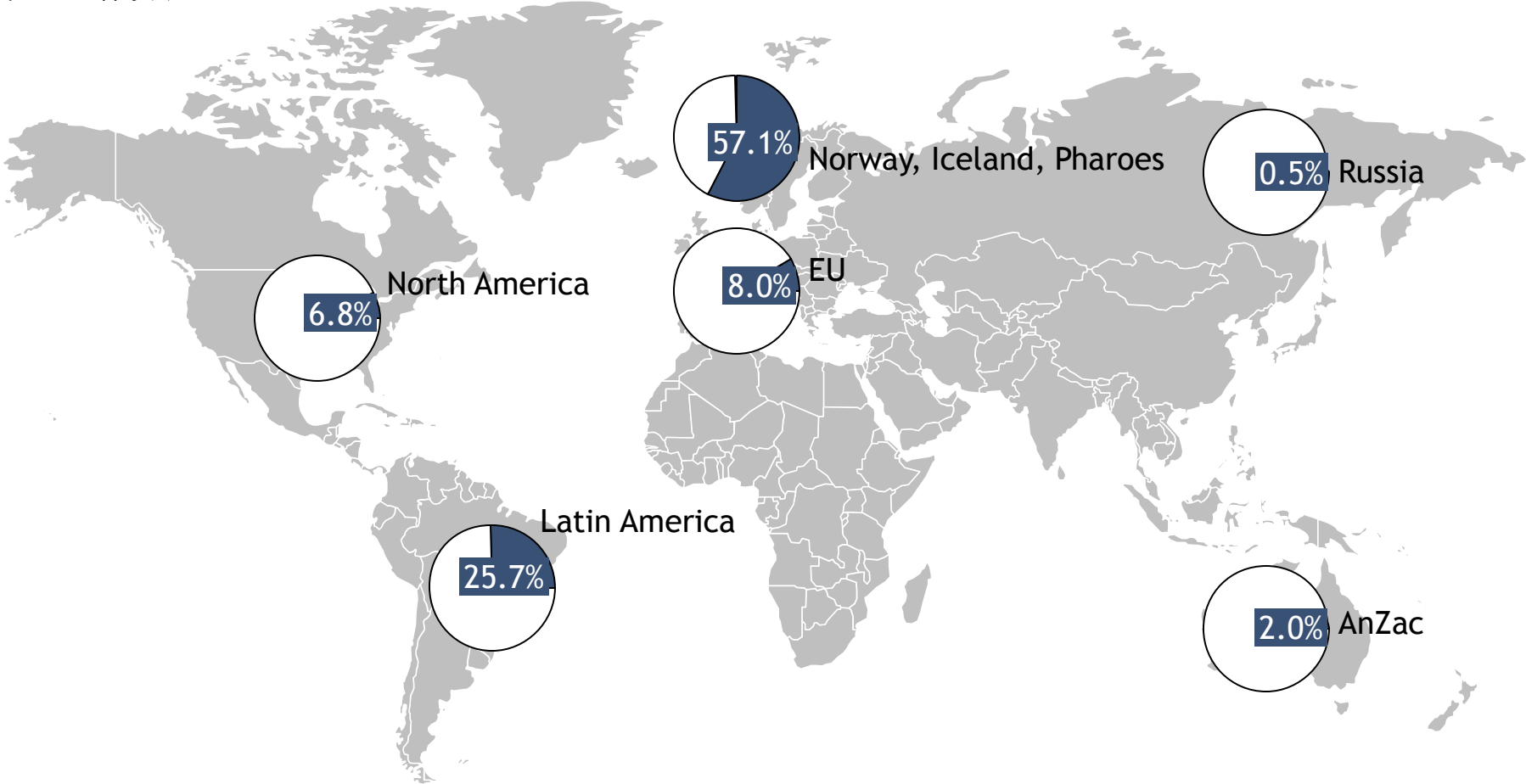
*Kofi Annan
AquaVision 2012*

“Saving the world is one thing, making money another”

Examining salmon farming market economics

Very difficult to see which areas can provide future supply growth

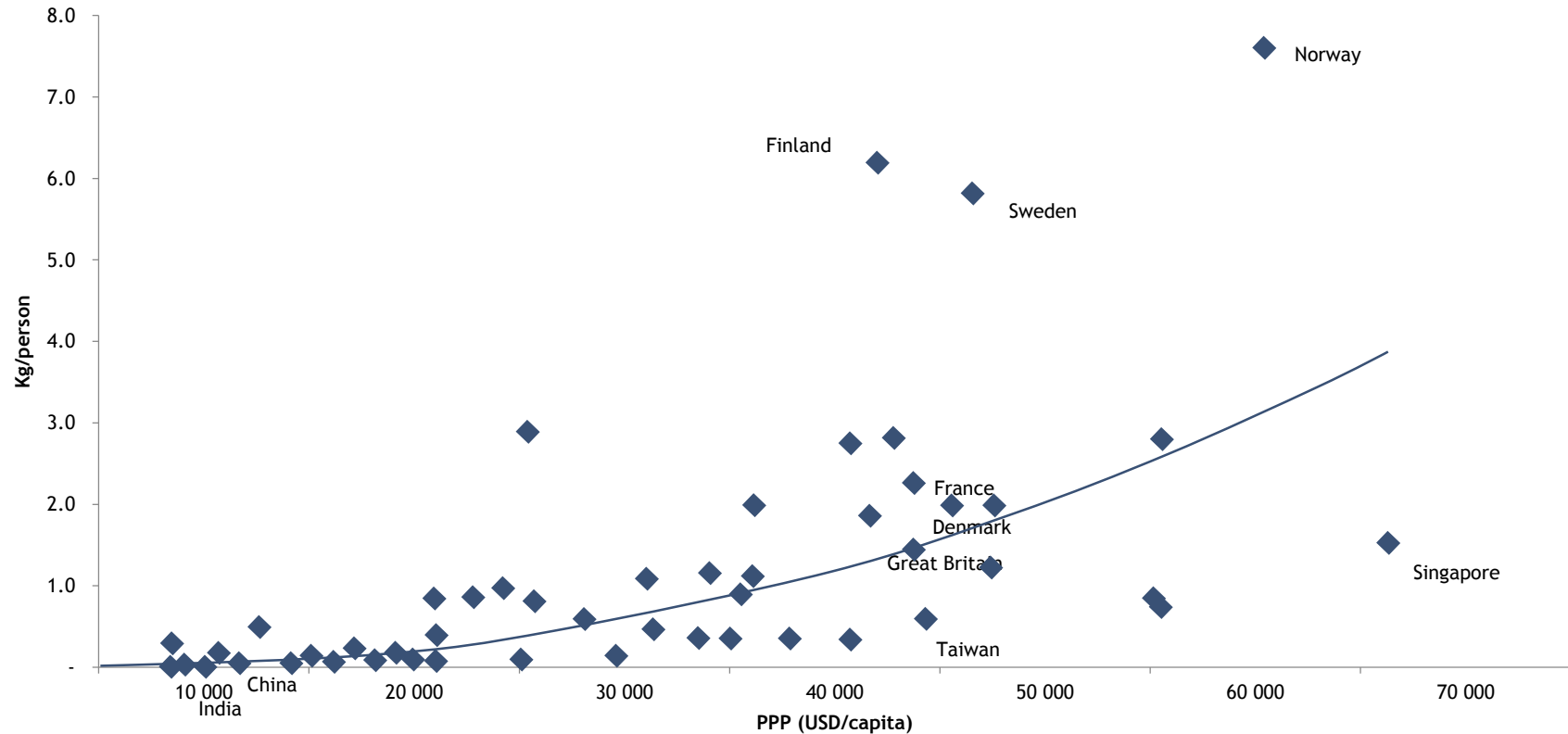
Share of world supply (%)



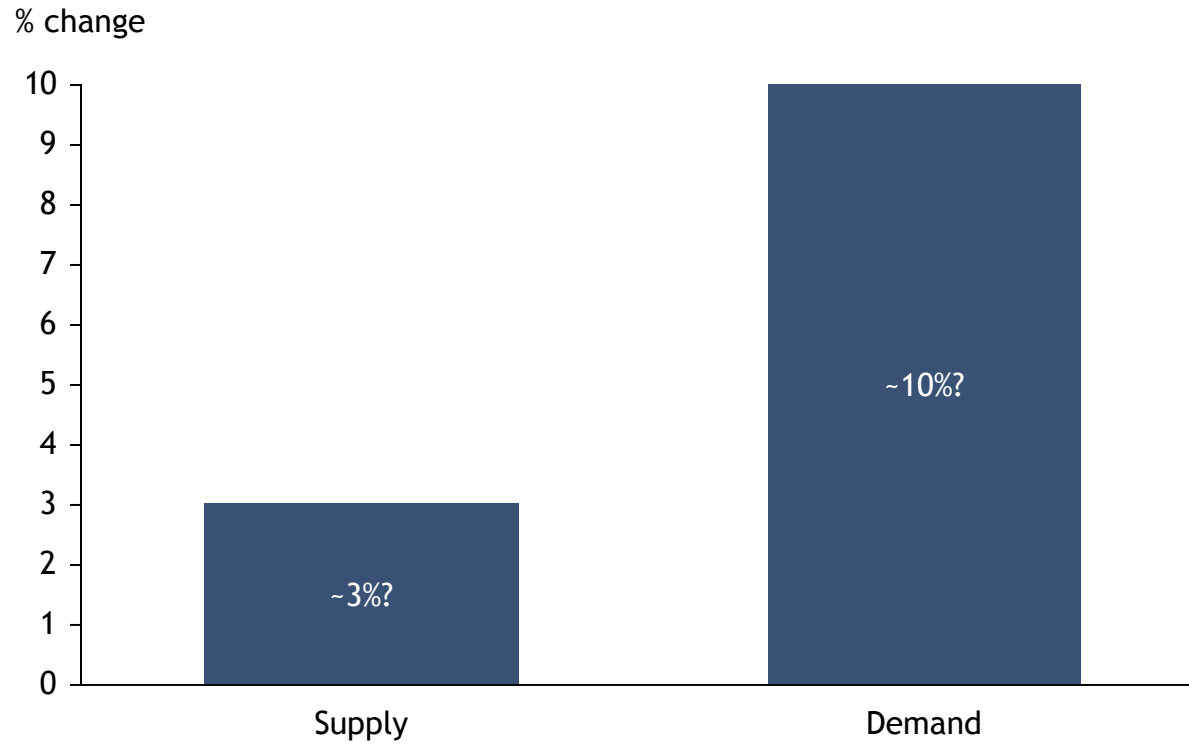
Source: Marine Harvest Salmon Industry Handbook

When the poor gets richer salmon consumption will accelerate its growth

Salmon per capita to GDP (PPP, USD per capita)



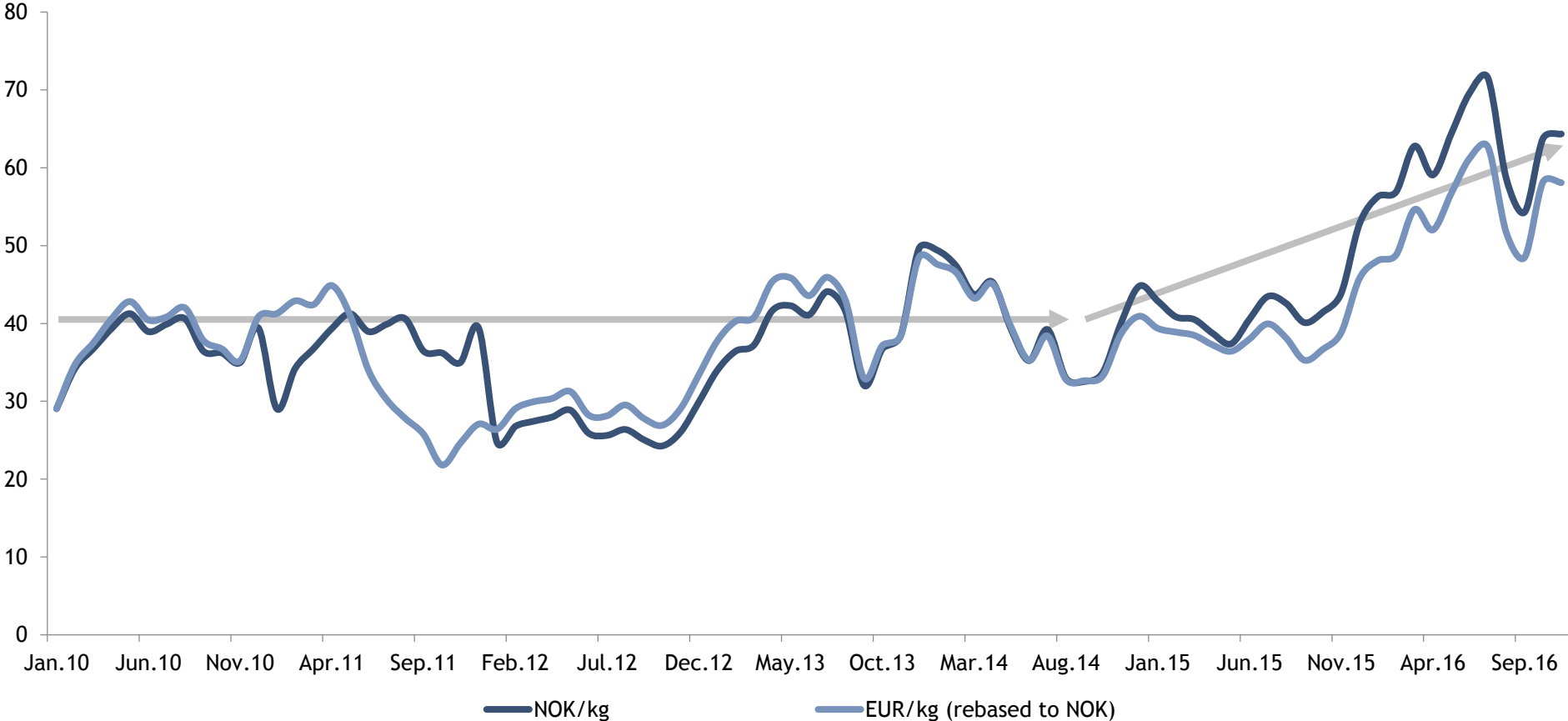
With demand continuously outpacing supply, what to expect of the price?



Note: Growth illustrations are for illustration purposes only

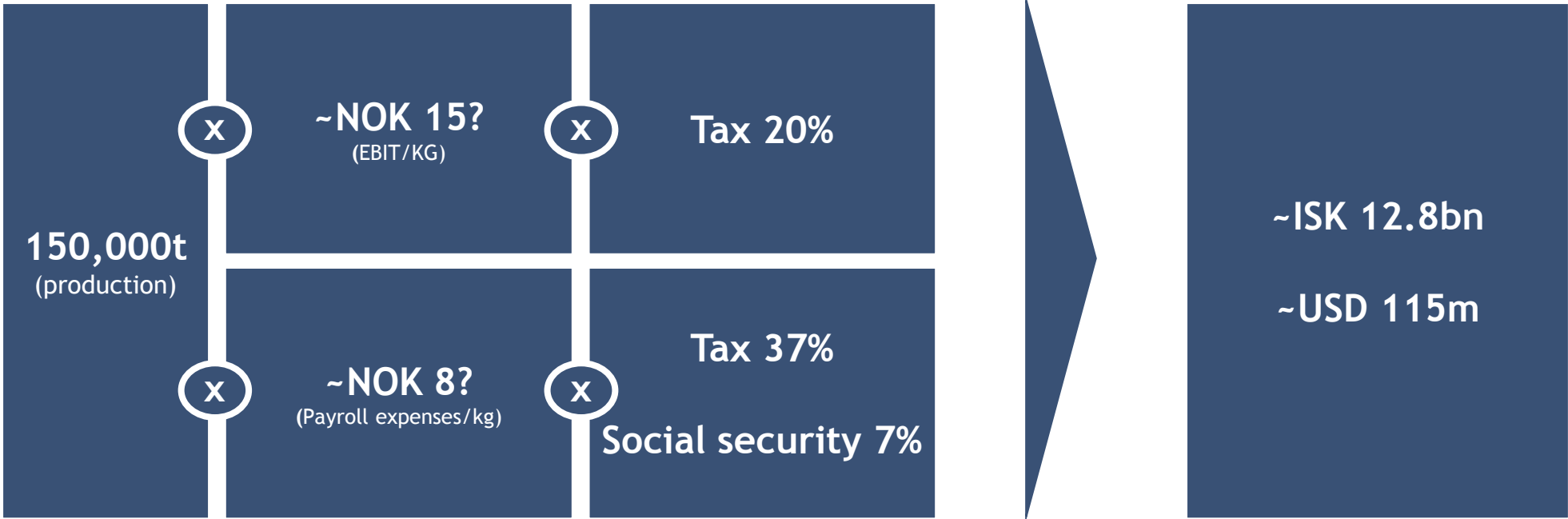
Prices continue to set new records

Fish Pool Index weekly spot prices



Huge tax potential for Iceland

Production of 150,000t/year at moderate assumptions yields significant tax income



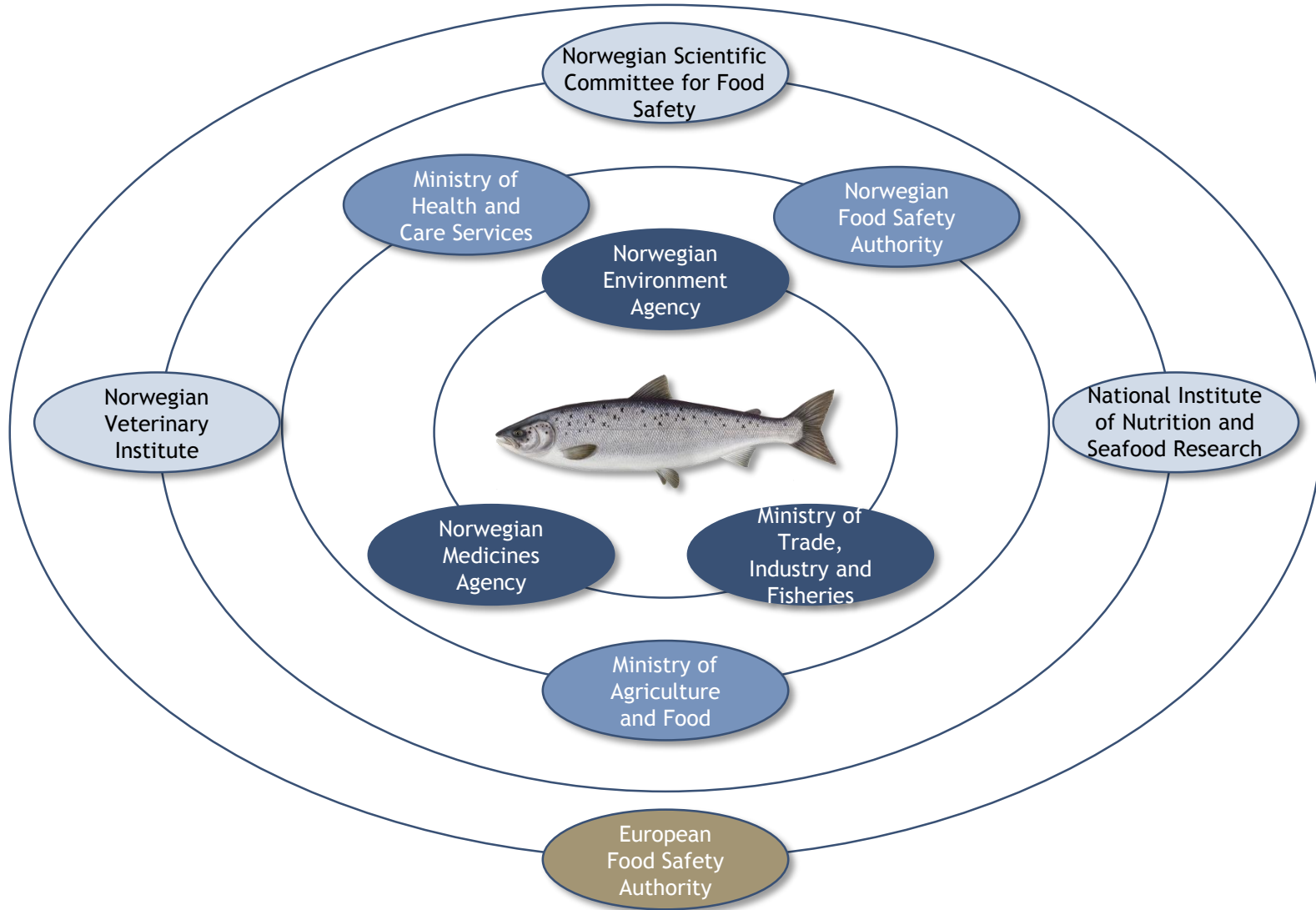
Source: OECD, Deloitte, Arctic Securities
Note: Labour cost approximation per kilo based on Salmar, Grieg Seafood, Lerøy Seafood and Bakkafrost

Threats to be aware of

Do not allow any poor farmers



Salmon farming needs regulation



Iceland with a once in a lifetime opportunity

Salmon farming represents a great way for Iceland to

Just make sure to

**Efficiently produce
healthy food without
greenhouse gas emissions
(the world thanks you)**

**Generate significant tax
benefits and employment**

**Have a good regulatory
framework and avoid bad
farmers**

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