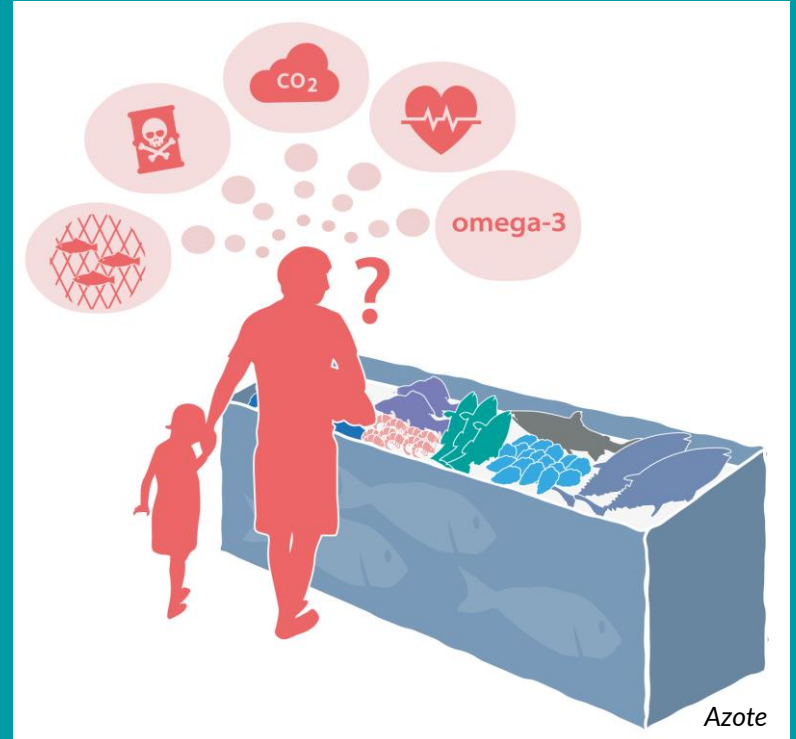


(Increased consumption of) Seafood from a sustainability perspective

Baltic Breakfast June 18th 2021
Sara Hornborg, PhD
RISE Research Institutes of Sweden



Seafood is a highly diverse but generally low-carbon and nutritious food relative to other animal-based options

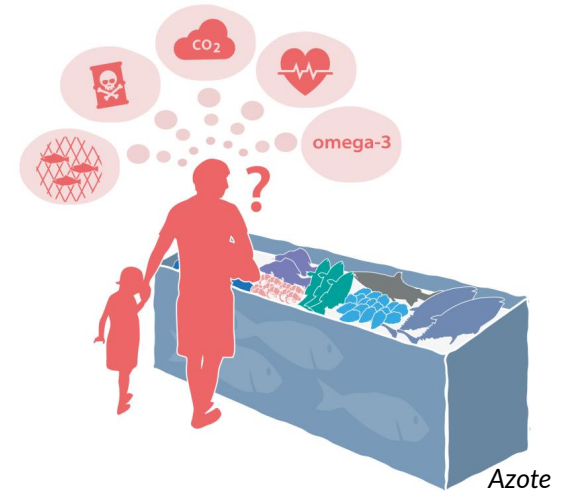


Pictures from Pixabay

Will increased seafood consumption benefit food sustainability and marine ecosystems?

This depends on:

- What you replace
- What impacts you compare
- Which seafood you choose



...and where will it come from?

Baseline: Swedish seafood consumption

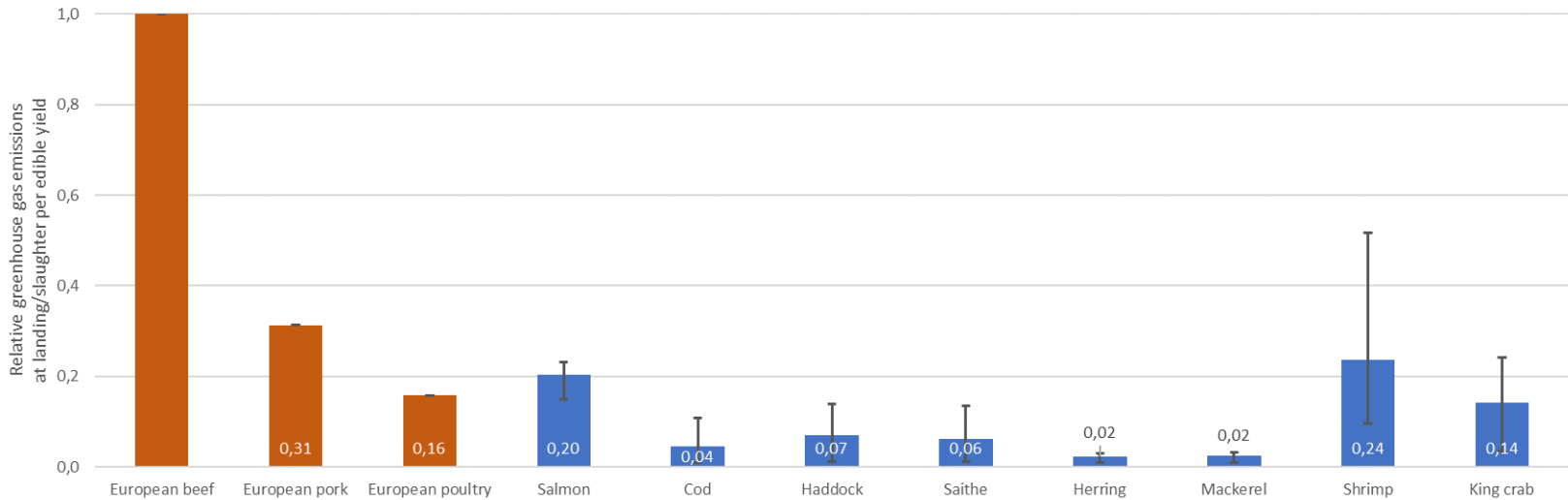
- Current seafood consumption equals to barely 2 times a week¹ (Swedish dietary advice 2-3 times a week)
 - Less than half of dietary recommendations in Europe are met by national supplies²
- Around 75 % of volume imported¹
 - Swedish fisheries ~20 %, aquaculture ~6 %
- Growth in consumption in Sweden calls for more imports, increase in aquaculture and use more of less utilized resources (species and parts of the fish)

We need to pay attention to what seafood we should eat and how to sustainably produce more!

¹Borthwick, L., Bergman, K. & Ziegler, F. (2019) Svensk konsumtion av sjömat. RISE Rapport 27. diva2:1305161

²Lofstedt et al. (2021) Less than half of the European dietary recommendations for fish consumption are satisfied by national seafood supplies. *European Journal of Nutrition*, 1-10.

What can science tell us about environmental impacts?

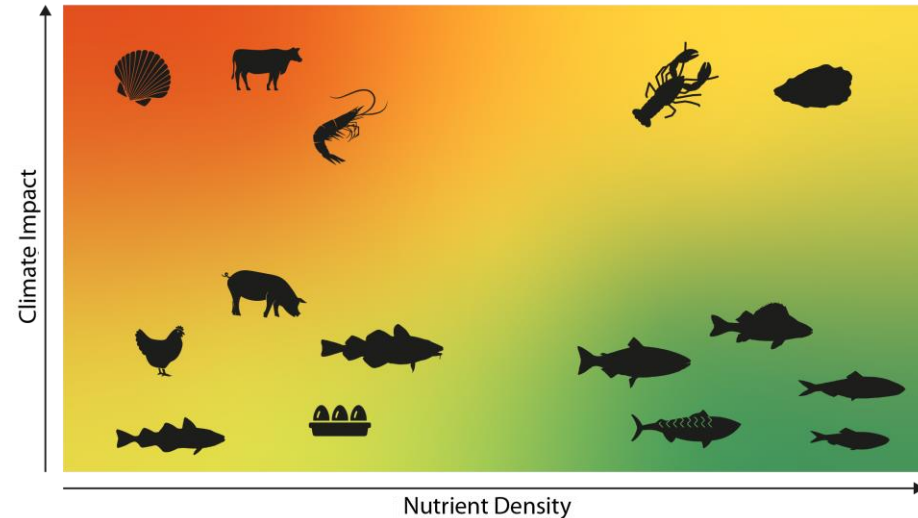


Example: Carbon footprint Norwegian seafood

Winther U, Skontorp Hognes E, Jafarzadeh S & Ziegler F 2020. Greenhouse gas emissions of Norwegian seafood products in 2017. <https://d21dbafykfdck9.cloudfront.net/1581085586/report-carbon-footprint-norwegian-seafood-products-2017-final-070220.pdf>

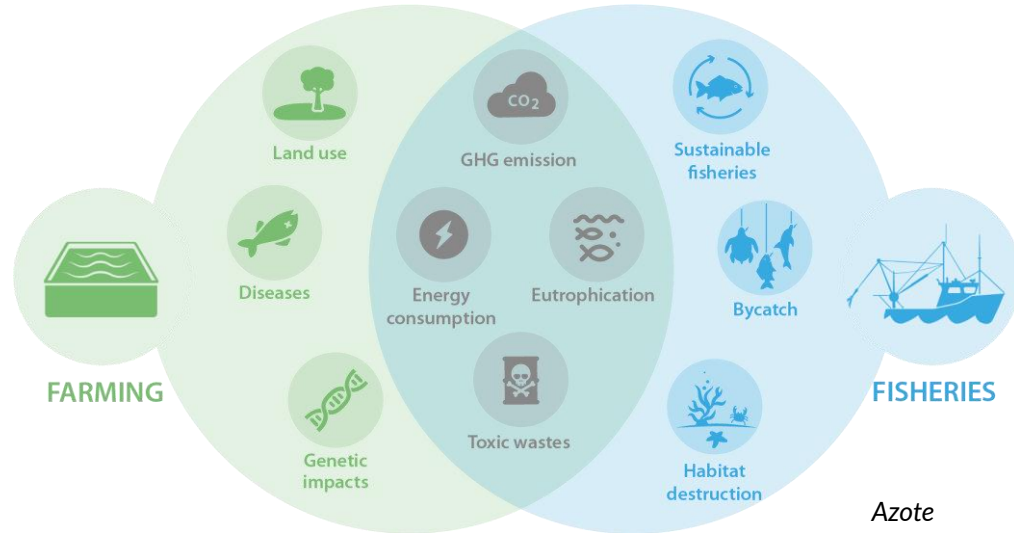
Nutritional values beyond proteins

- Combined nutritional value and carbon footprint?
- Seafood ≠ seafood and may play any role in the carbon footprints and nutrition of diets



Based on Hallström et al. (2019) Combined climate and nutritional performance of seafoods. *Journal of Cleaner Production*, 230, 402-411.

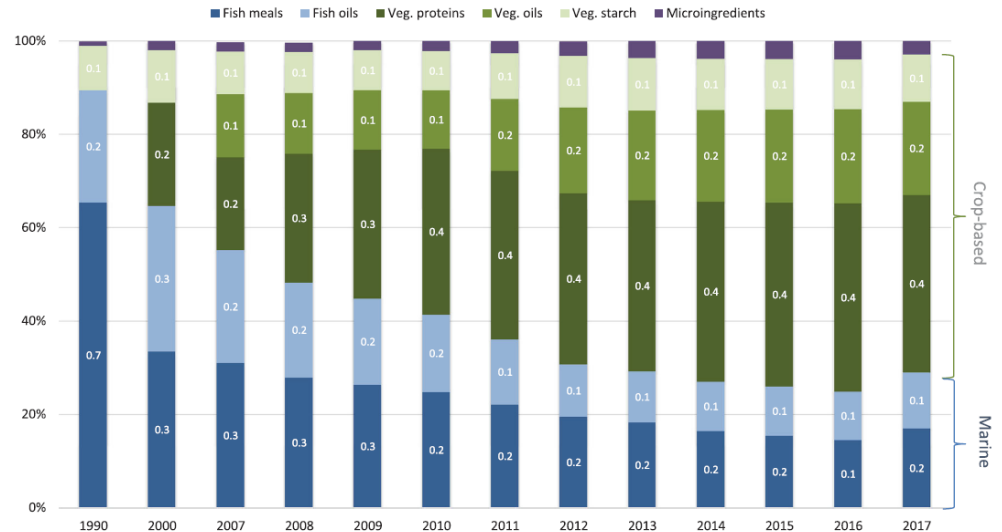
Other environmental aspects?



There are both common and unique pressures

Growth so far has come with increased dependence on land

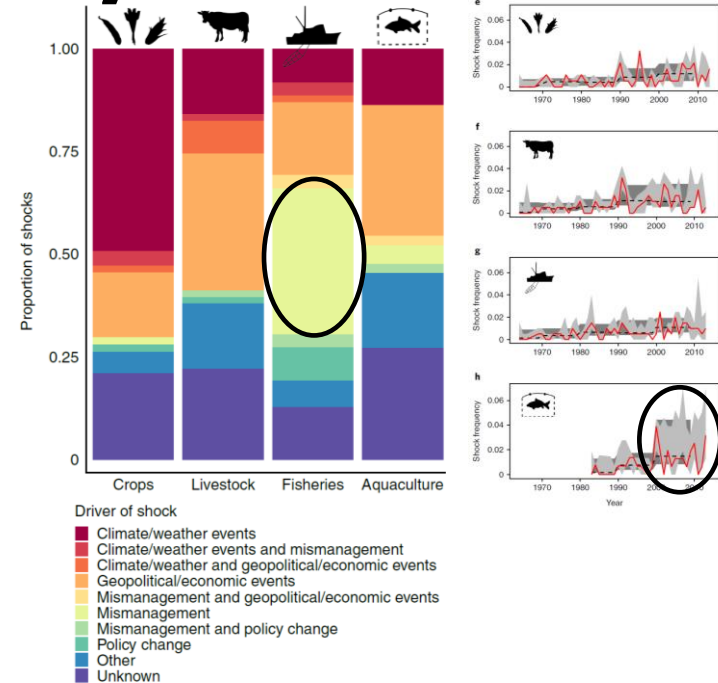
- Increased competition and other environmental trade-offs
 - Shift from towards terrestrial ecosystems
- Replace! Direct towards efficient feed converters such as fish



Ziegler et al. (2021) Greenhouse gas emissions of Norwegian seafoods: From comprehensive to simplified assessment. *Journal of Industrial Ecology*.

We need resilient food systems

- Increasing emergency to safeguard food security! Food production "shocks" (= sudden losses) are increasing globally
 - Aquaculture production extra sensitive
 - Capture fisheries mainly subjected to mismanagement
- Minimize food losses – optimize output!
 - The more that is used, lesser pressures per product!



Cottrell RS, Nash KL, Halpern BS, Remenyi TA, Corney SP, Fleming A, Fulton EA, Hornborg S, John A, Watson RA & Blanchard JL (2019) Food production shocks across land and sea. *Nature Sustainability*, 2(2), 130

Seafood from a Baltic perspective

Challenges

- Consumer habits
- Constrained production
- Dietary advice (harmful substances)

Opportunities

- Dietary advice (nutrition)
- Many tasks beyond production
 - Improve utilization of resources
 - Create consumer interest less utilized species

To summarize

- **Will increased seafood consumption benefit sustainability and marine ecosystems?**
 - It depends
- **What can science tell us about environmental impacts?**
 - Seafood ≠ seafood but has generally a low carbon footprint compared to other animal-based foods
 - There are environmental trade-offs and unique challenges which calls for proactive management
 - Both changes in consumption and production are crucial

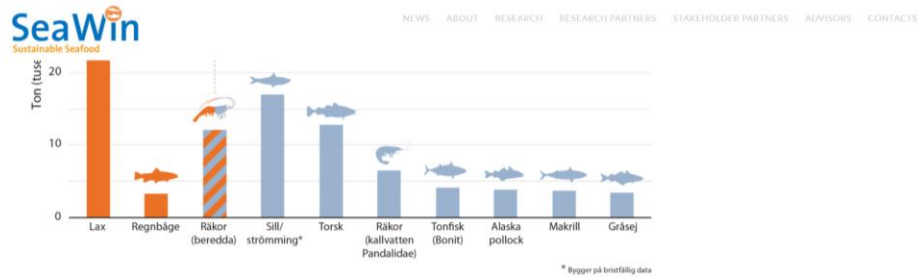
The future!



Azote

**RI
SE**

Thank you for your attention!



Här presenteras fem så kallade policy briefs som tagits fram inom det Formas-finansierade projektet SEAWIN med stöd från Havs- och fiskerifonden.

Five policy briefs from SeaWin:

- Hållbar sjömat
- Frisk med fisk utan risk?
- Lokal eller långväga sjömat
- Hållbar konsumtion av sjömat
- Antibiotika - Ett hot mot fiskens hälsa

Sara.Hornborg@ri.se

RISE – Research Institutes of Sweden AB · info@ri.se · ri.se

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