BIO300A

Blue transport – Ship happens!

Logistical solution for a greener future

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The Problem

Norway is the world's largest Atlantic salmon producer and plans to expand their salmonid production fivefold by 2050[1]. But doing this comes with environmental costs. Export leaves a great carbon footprint, and if we wish to expand, we will need to reevaluate the commonly used diesel-trucks with greener, realistic alternatives.

Research Question

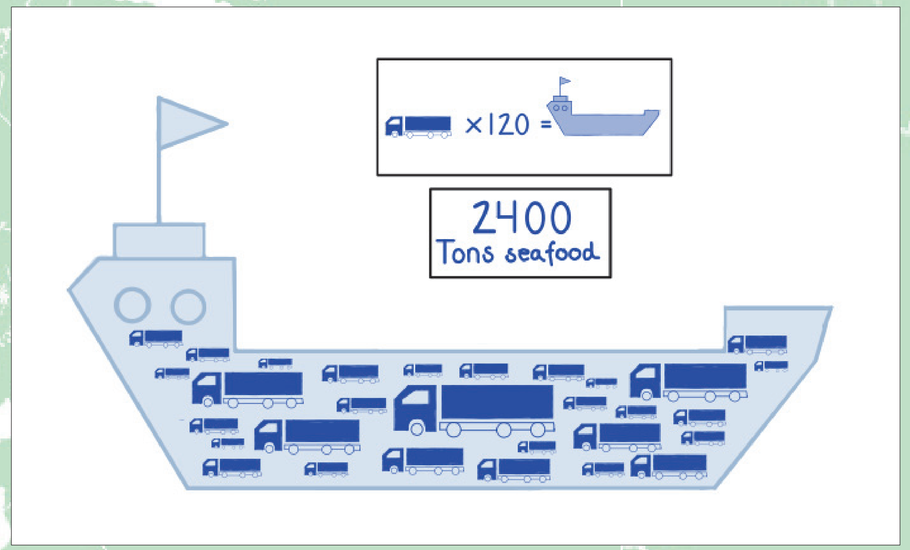
How does the carbon footprint differ between truck-based transportation and today's marine shipping alternatives for exporting seafood from Norway to Europe?

Hypothesis

Marine shipping is expected to be a more environmentally friendly transport method for Norwegian seafood export compared to traditional truck-based transport.

Approach

We created a theoretical linear model in R Studio to compare the carbon footprint in a hypothetical situation where Norway's total annual seafood export to Europe was transported exclusively via trucks or ships.
Data on seafood export was collected from Statistics Norway[2], while the initial carbon footprint values used in our calculations for truck and ship were collected from Norwegian Environment Agency[3] and SINTEF[4], respectively.

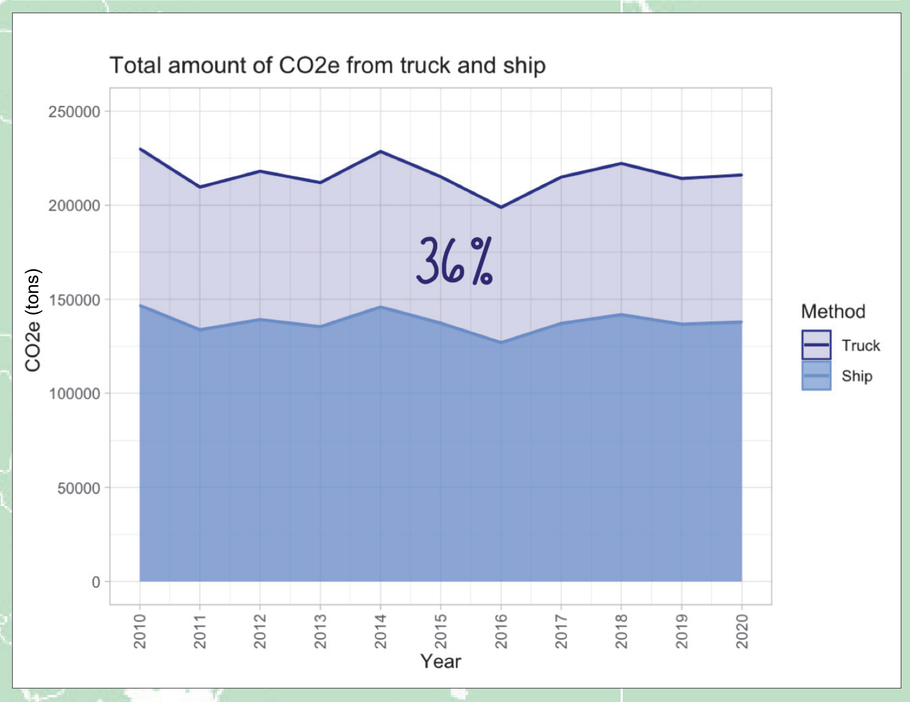


Results

Trucks release **89.645,76** tons CO_2 equivalents more per year than ships.

Ships are more efficient! They can carry 2400 tons of seafood, which is equivalent to that of 120 trucks.

By using ships instead of trucks, we can cut carbon emissions by up to 36%.



SCAN ME

REFERENCES
1. Ministry of Trade, Industry and Fisheries (2021). *Et hav av muligheter-regjeringens havbruksstrategi.*
2. Statistisk Sentralbyrå (2021). *Utenrikshandel med varer .*
3. Miljødirektoratet (2020). *Beregne effekt av ulike klimatiltak.*
4. Winther, U. et al. (2020) *Greenhouse gas emissions of Norwegian seafood products in 2017.*

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