

# BLUE ECONOMY AQUACULTURE FORUM

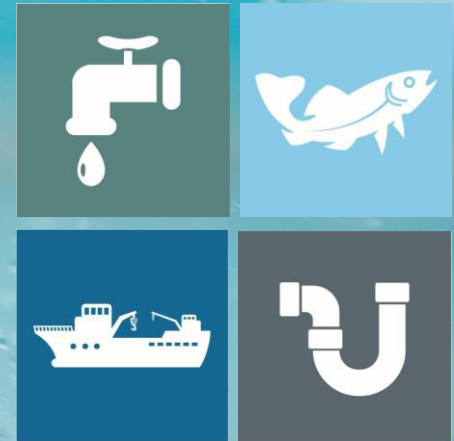




# Landbased aquaculture

Can landbased fish farming be a solution to the challenges of food production, sustainability and blue economy?

Stian Johnsen, Abu Dhabi, 25<sup>th</sup> of May 2023





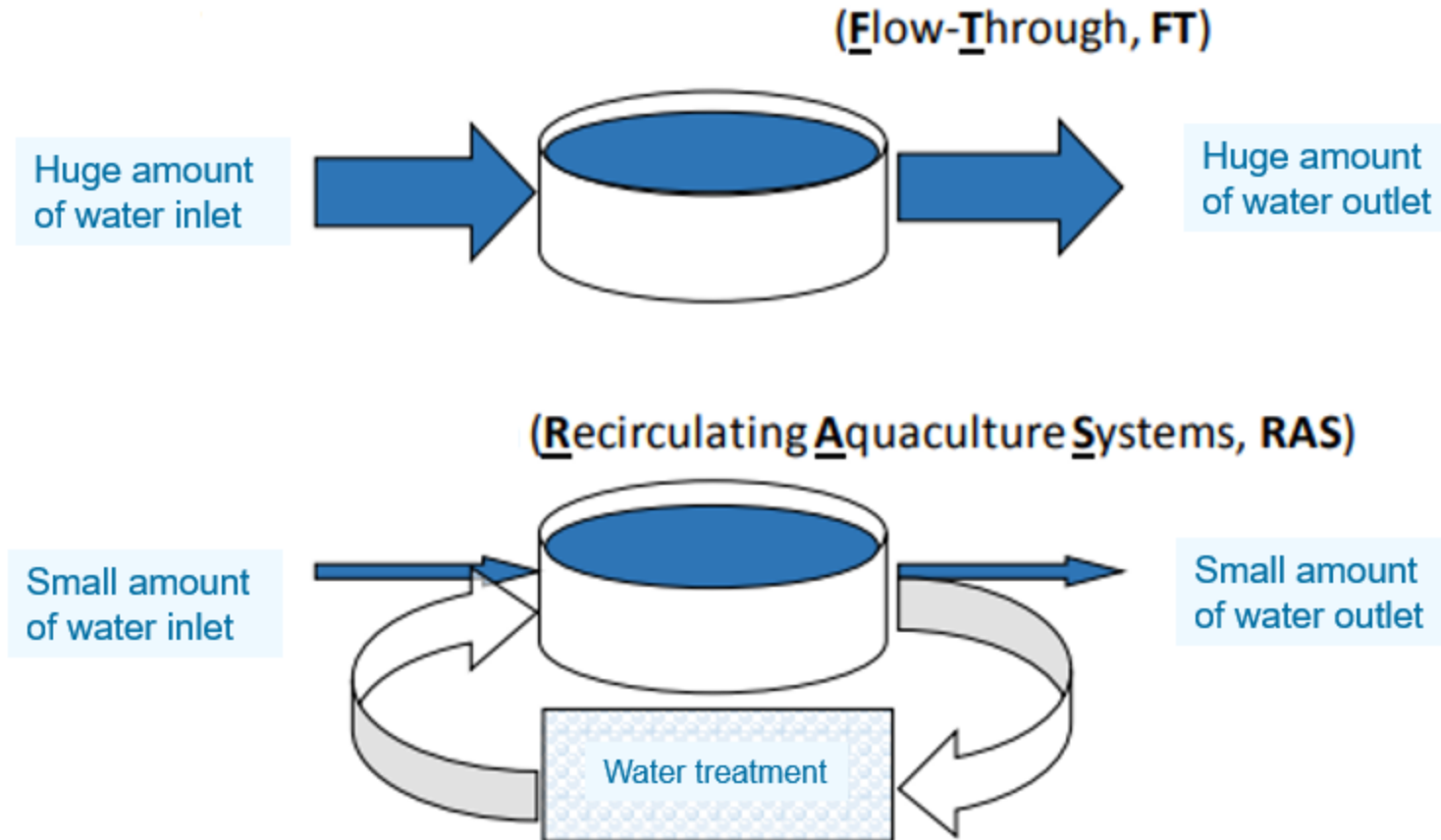
# From natural capture to SternerRAS



- **Recirculating**
- **Aquaculture**
- **System**



# Flow-Trough vs. RAS



# Sustainable Fish Production and Food Security

## Salmon Farming | Carbon Footprint<sup>3</sup>

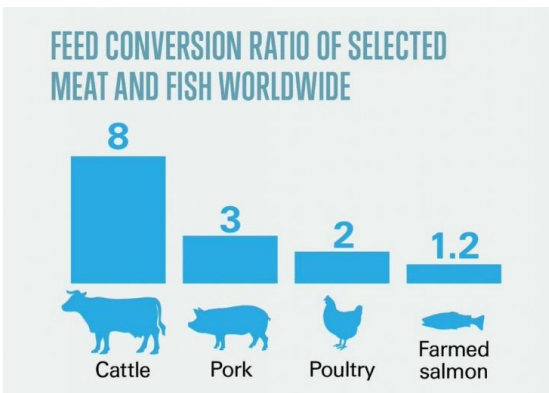
A carbon footprint measures the total greenhouse gas emissions caused directly and indirectly by the production of a product. Carbon footprint is measured in tons of carbon dioxide equivalent (tCO<sub>2</sub>e) per ton edible protein of the product.



Salmonids: includes farmed salmon and trout.

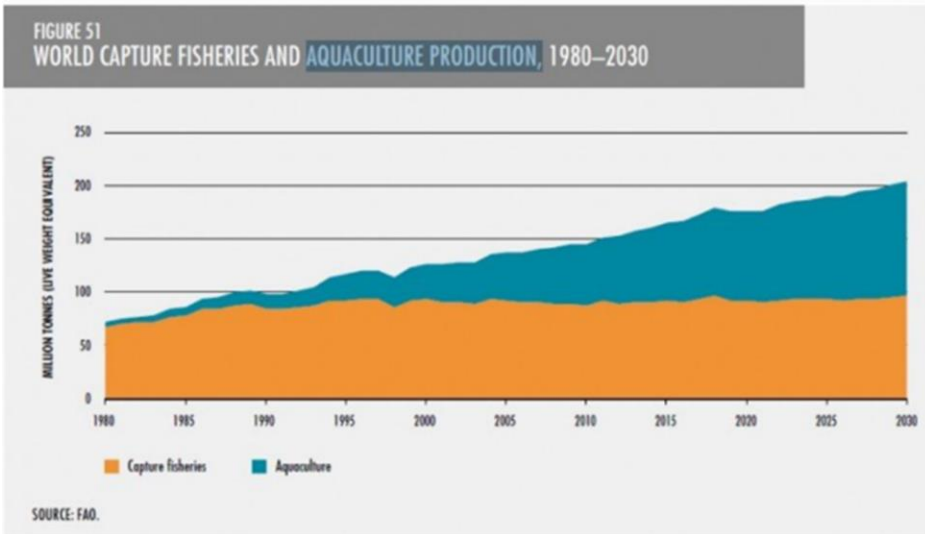
CO<sub>2</sub>e is calculated by multiplying the emissions of each of the six greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>) by its 100-year global warming potential (GWP).

How many tons CO<sub>2</sub>/tons of protein



How many kg feed/kg produced

- Why is the transition to landbased fish-farming necessary?
- Sustainable farming closer to the market





# What is sustainable way moving forward?



# Sustainability

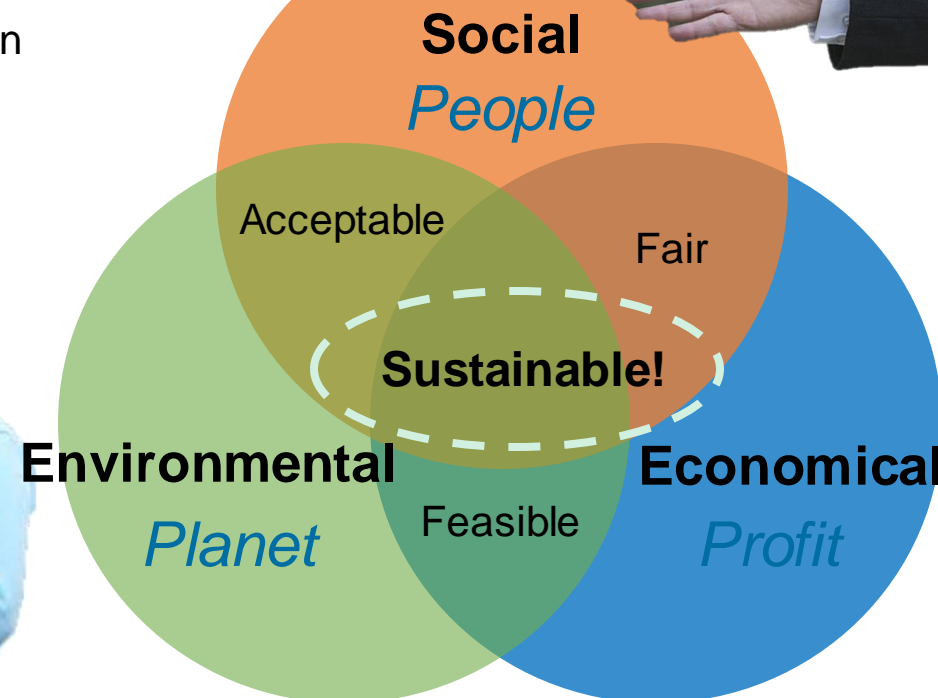
*Meeting the needs of the present  
without compromising the ability of  
future generations to meet their needs*



- Elimination of sea-bed contamination by recycling of waste (faeces, food residual...) either to soil enhancement, fertilizer or Bio-gas
- No escapes
- No diseases or kind of infection spread to marine environment
- Reduced CO2 footprint
- No waste



- Food security
- Reduced pressure on marine life
- Jobs
- Society demands enhanced recycling



- Enhanced and predictable growth-rate
- Reduced FCR
- Less vulnerable for lice, algae and marine influence
- High ROI
- Circular economy in waste management

# Fish Farmer as a profession.....





# Process Operator as a profession.....



Any challenges converting a fish-farmer into a process operator and vice versa?





Thank you!

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