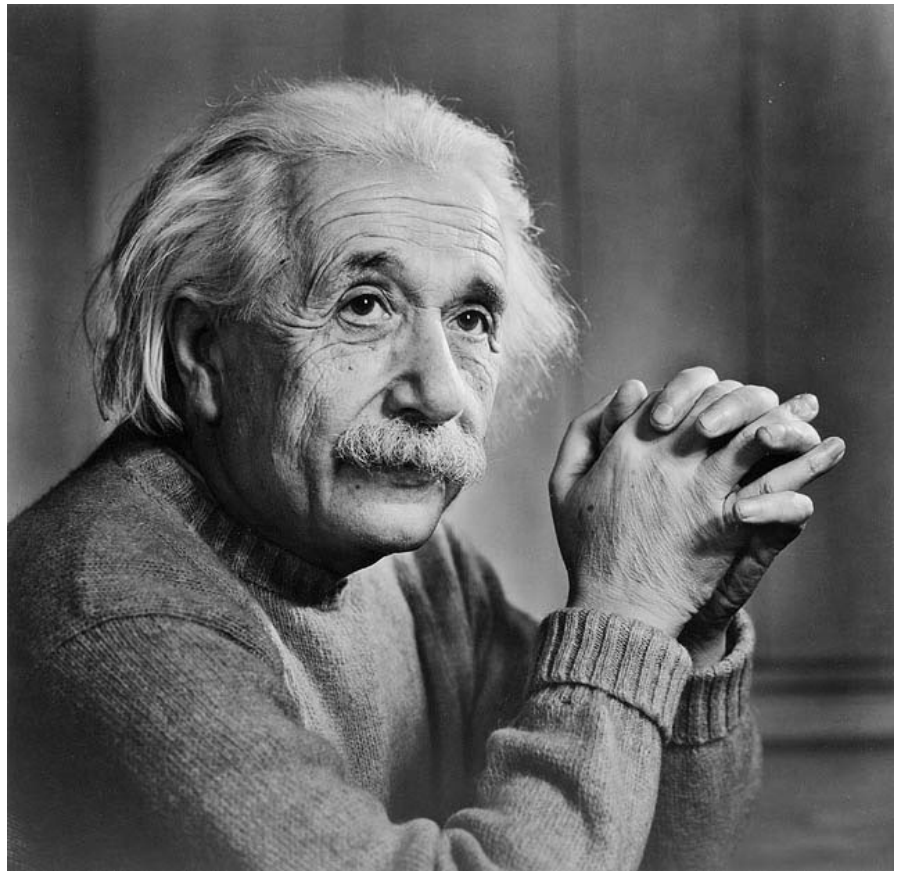
Research, Development & Innovation in the Finnish fisheries sector

Antony Starr, Senior specialist
Ministry of Agriculture and Forestry

Finnish Fisheries Innovation programme

- Started in the EMFF period (2015) and continued in the EMFAF period.
- Reasoning and starting point for the Finnish fisheries innovation programme:
  - For the sector to grow and overcome its challenges, renewal is essential
  - Supporting renewal of fisheries companies is challenging
    - High average fisher age and low recruitment of new fishers
    - Operational environmental constraints in primary production and weak profitability
    - Low interest toward the sector from investors and capital
  - Project-based development that was unable to solve complex problems
  - No major sectoral research competence clusters; low use of international R&D funding. Communication and interaction between researchers, authorities and companies was sporadic and at worst marked by conflict.



”Insanity: Doing the same thing over and over again and expecting different results.”

Albert Einstein

Investing in RDI activities

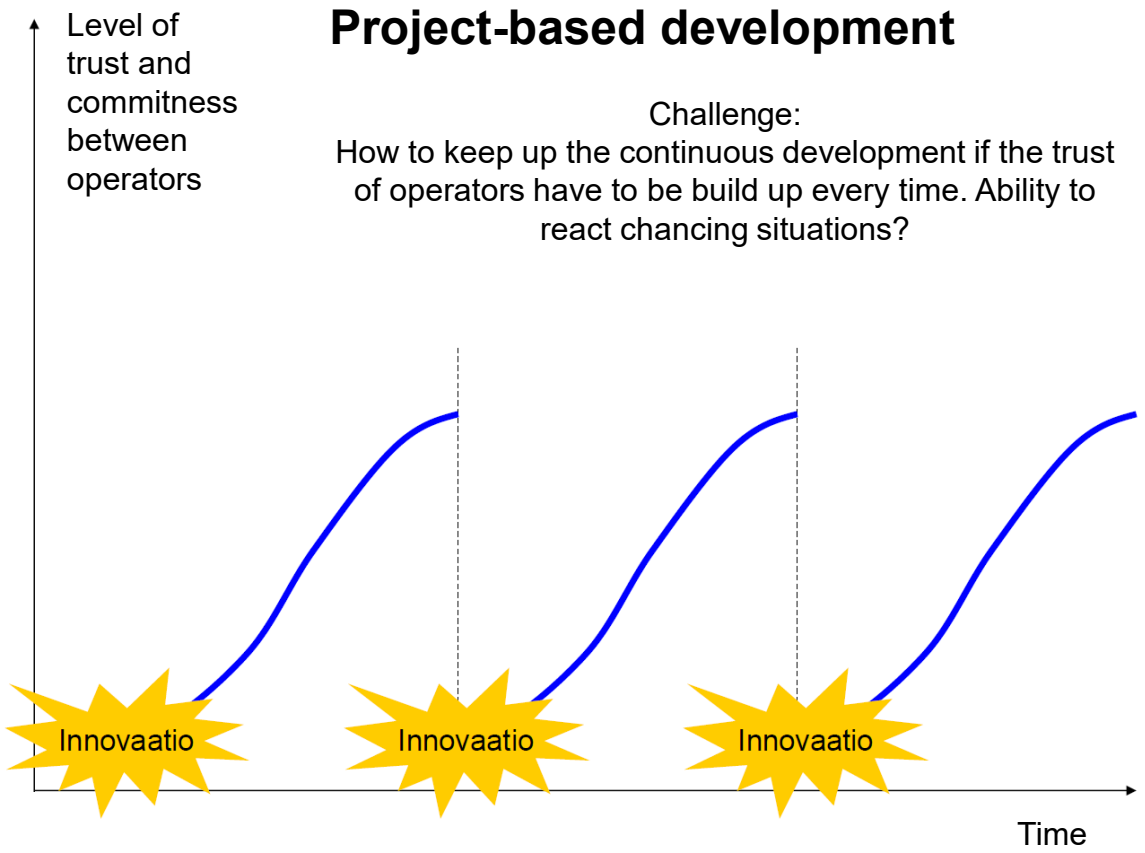
Programme-based approach (innovation programmes)

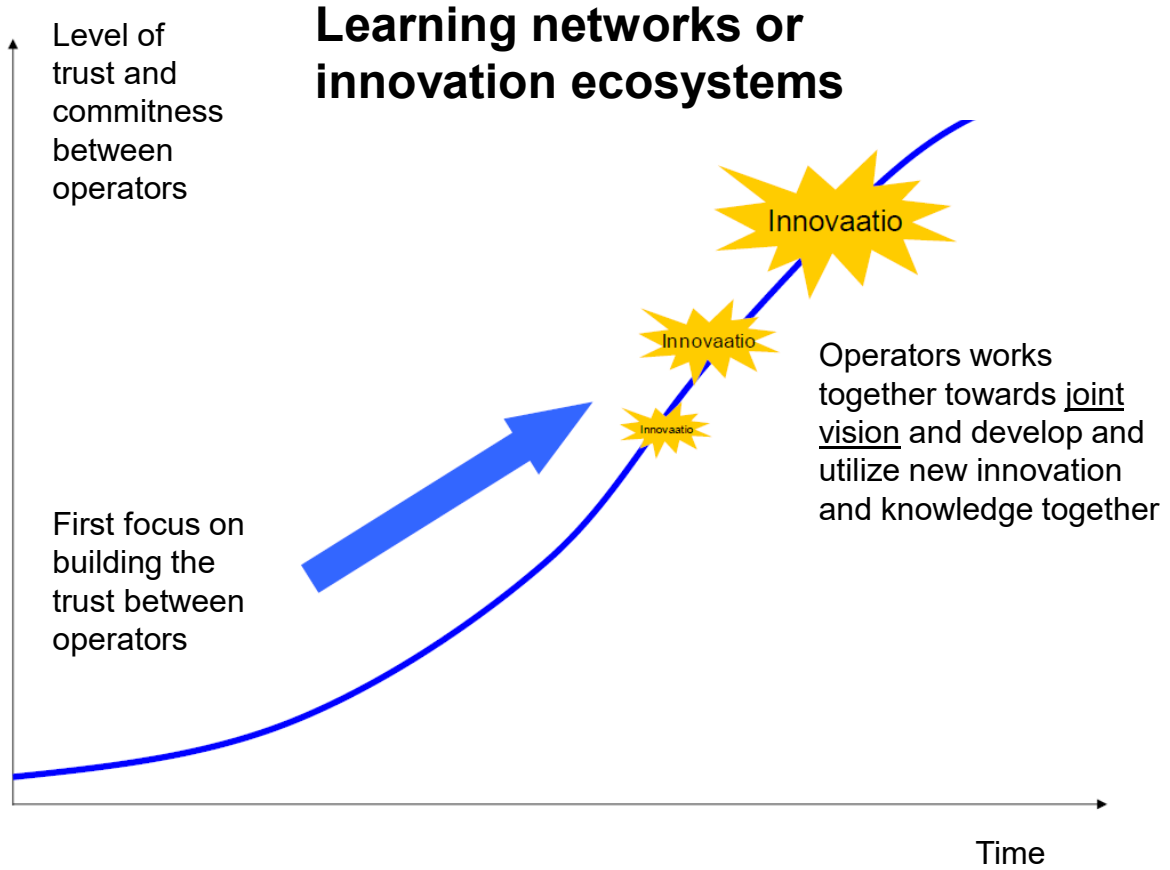
1) Focus on solving key sector challenges or opening growth opportunities
2) From ”fragmented projects” to goal-oriented flexible development
3) Administration as an enabler

Increased investment support for investments done together with research institutes

Objective: common goal, networks and structures in addition to building trust among stakeholders

EMFF (and EMFAF) strategy: shift from project-based approach to a target orientated and long-term developement model





Example of stakeholders in the aquaculture innovation programme network

Research institutes and public bodies

Companies

Lännenpuolen Lohi
Salmonfarm
Laitakarin Kala

RDI funding and investments

- Aquaculture innovation programme (5,5 MEUR, EMFF)

- Associated projects
  - National funding 3,8 MEUR
  - 3 international research consortia, Finnish funding 1,1 MEUR

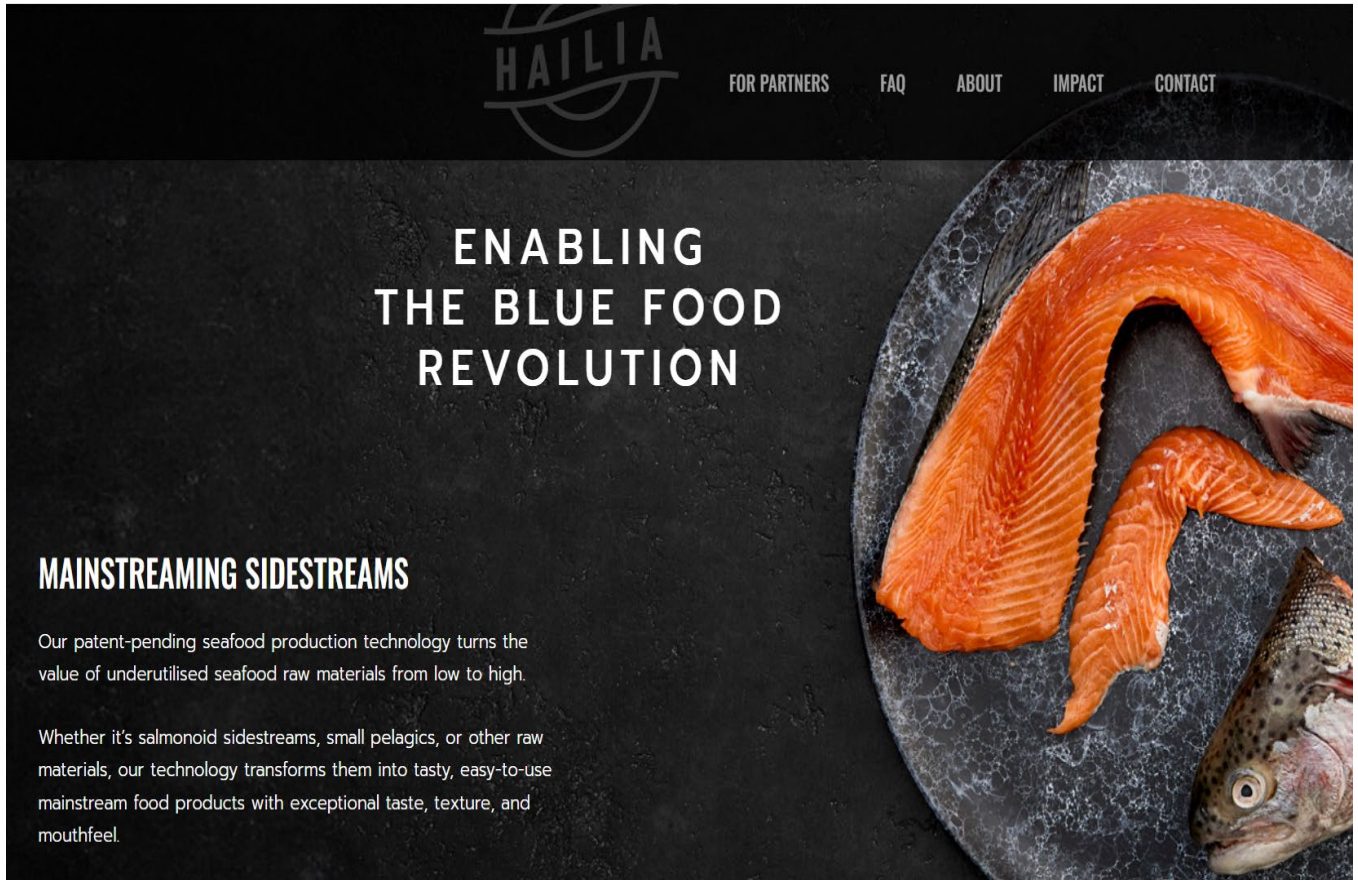
  + Many other international projects, with links to the innovation programme

+Several investment projects based on RDI partnership models (> 40 MEUR)

+ Better knowledge base → new aquaculture licenses (+ 3 000 tonnes)

+ First spin-off company for Natural Resources Institute Finland (LUKE) → ParasAqua

New startup companies



https://hailia.fi/

https://parasaqua.com/

Concrete solutions and examples

Low-cost IoT fish counter designed for trap net fisheries

Aalto University
Design Factory

Luke

IoT based fishcounter

- Solar-powered fishcounter with IoT-based monitoring device designed for use in traditional trapnets.
- Uses infrared sensors, camera, and cellular connectivity to count and measure fish entering the trap.
- Images and data are uploaded in real time to the cloud, helping fishermen remotely know the content of their trapnets → reduced fuel and time use for unnecessary visits to the trapnets.
- The project has been a collaborative effort between Aalto Universtiy Design Factory, The Natural Resources Institute Finland (LUKE) and partnering commercial fishermen.
- 4 counters were tested during the fishing season 2025.

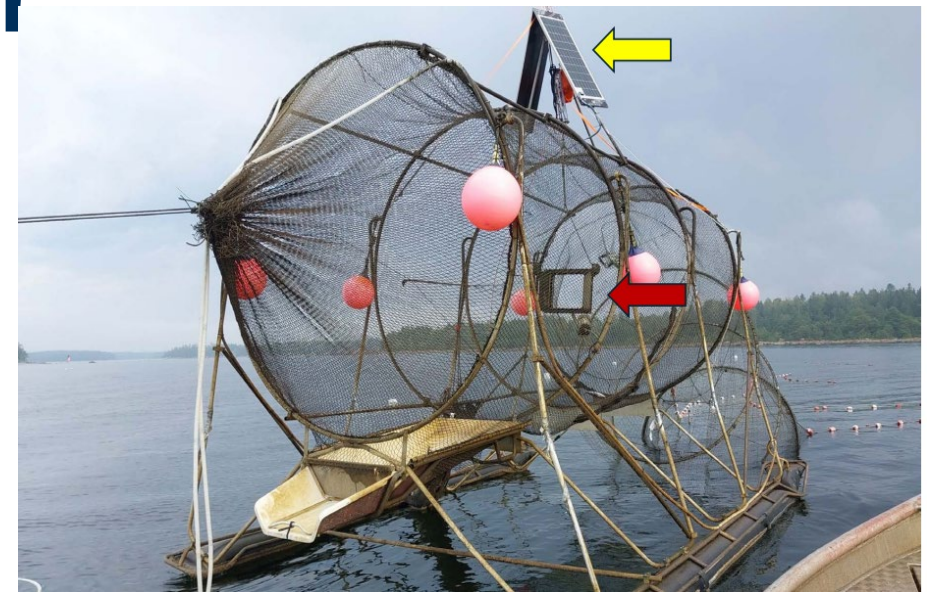
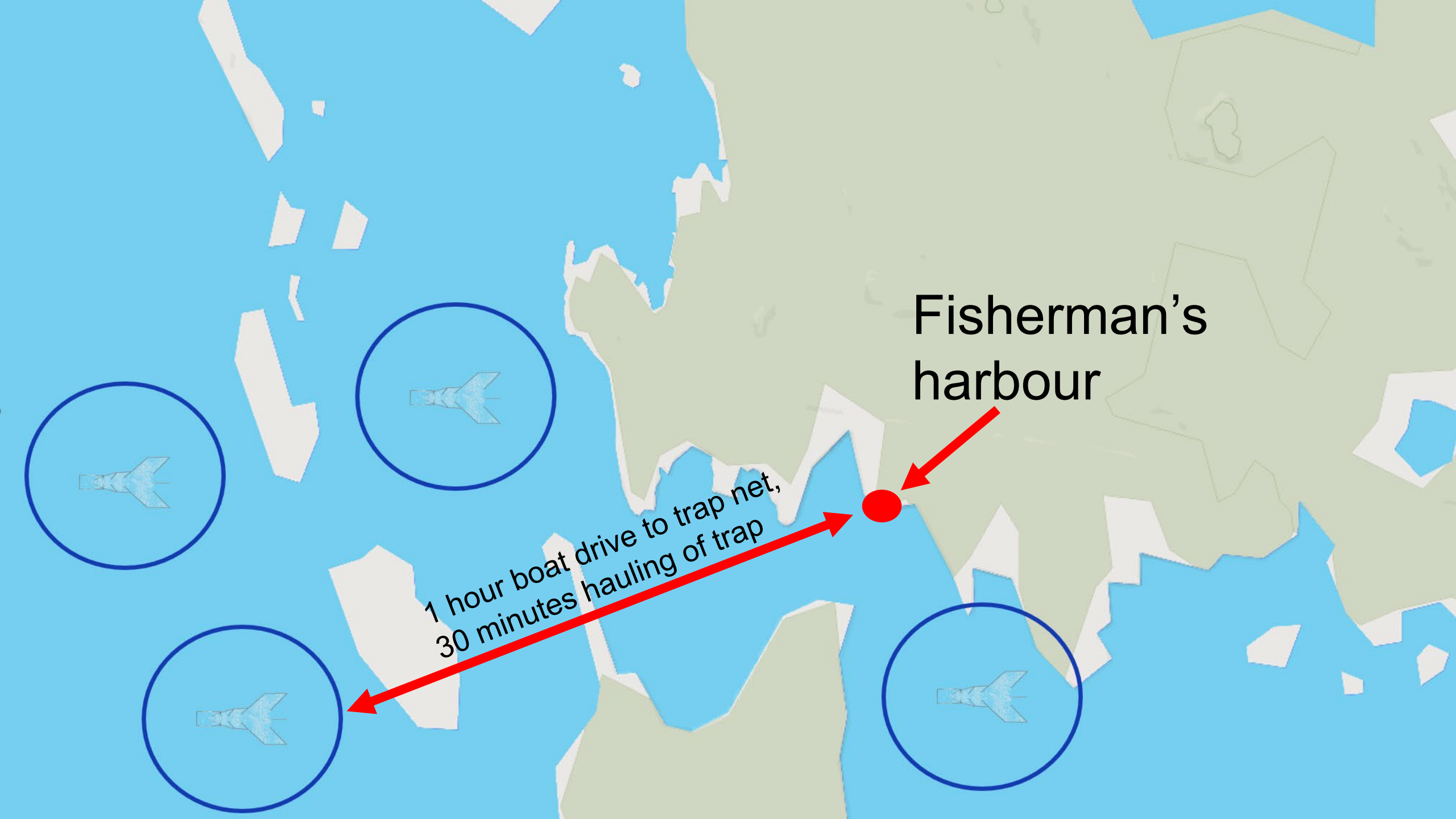


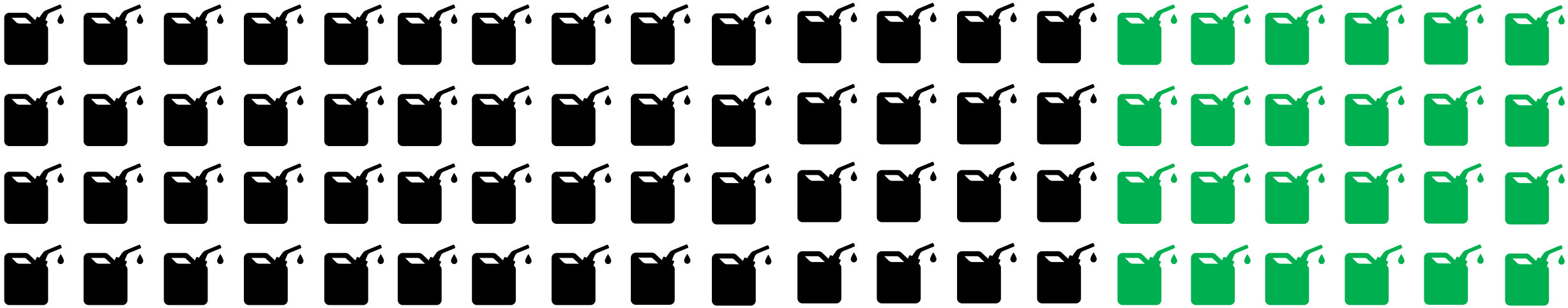
Image captured underwater by the Fishcounter's camera as a fish enters the trap.


Fisherman’s harbour
1 hour boat drive to trap net,
30 minutes hauling of trap

What fishermen really care about

- Low-cost
- Low-upkeep
- Indicative size of catch
  → salmon and whitefish etc
- Custom and easy-to-use mobile application

Fuel savings for one fisherman



With fish counter 30 % savings; Fuel usage decreased to 910 litres

= 20 L Gasoline

Field trial experiences from fishermen

- Very promising user-friendly innovation
- Fishermen were excited to check the mobile app and get real time photos of catches
- Fuel savings significant and minimal service needs
- EU Commissioner Costas Kadis was showcased the innovation during his visit to Loviisa by fisherman Mikael Lindholm in 2025

Picture by Mikko Malin, SAKL

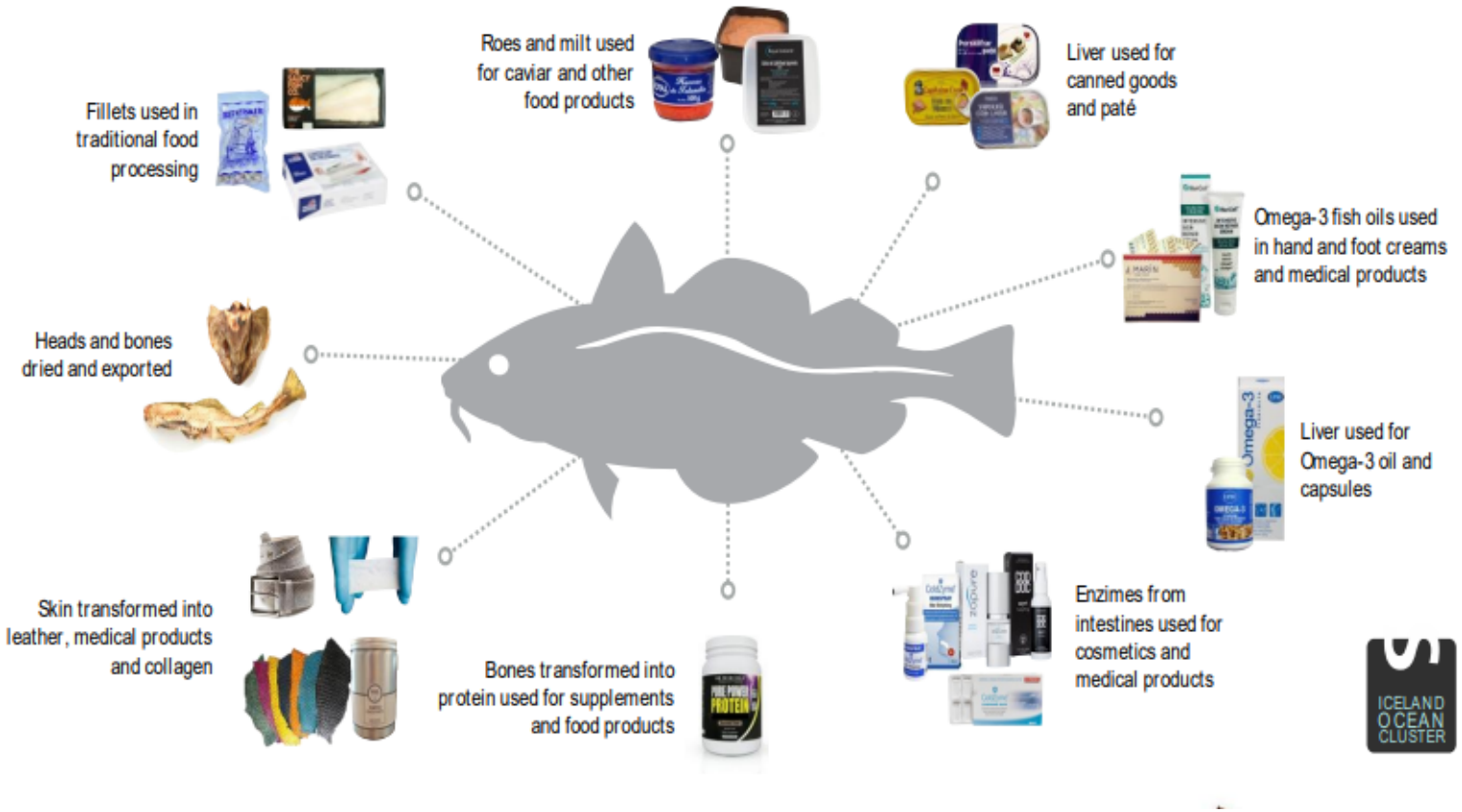
Work done in prevention of seal damages

- Mobile seal deterrent, autonomous seal deterrent
- Protecting fishing areas with deterrants
- AI-based solutions in aquaculture and fisheries (project underway)

EMFAF programming period 2021-2027

- Innovation programme model continued
  - 5 sub-programmes: fisheries, aquaculture, environment, novel products and, marketing and quality
- New funding instruments:
  - Company development aid (aid intensity 50%, up to 200 000 €)
  - Innovation voucher (max 7500 € and 75% of project)
  - EMFAF loan guarantee (upcoming financial instruement…)

Iceland as a benchmark



- Focus on maximizing value creation and minimizing waste.
- Value chain has tripled, eventhough catches have halved.
- Example: biological wound care company Kerecis sold 1,3 billion € in 2024.

Challenges

- Rules for cooperation between companies and research institutes
- Fisheries sector highly regulated
  - Energy transition
  - Supporting high-value added products, e.g. state-aid rules…
  - Detailed regulation (e.g. aquaculture permits)
- Attitudes
  - Easier to support familiar and ”safe” operations (better certainty of success)
  - Fear of failure and ”*can’t-do*” attitude

Thank you!