

FLEXAQUA: Aquaculture operations with reliable flexible shielding technologies for prevention of infestation in offshore and coastal areas

The project emphasizes on the advancement of aquaculture technology systems that are economically sustainable and improve animal welfare. This includes, the use of flexible shielding skirts for prevention of ectoparasites infestation (Sealice,...) of farmed fish salmon, procedures for underwater monitoring and safe and efficient operation.

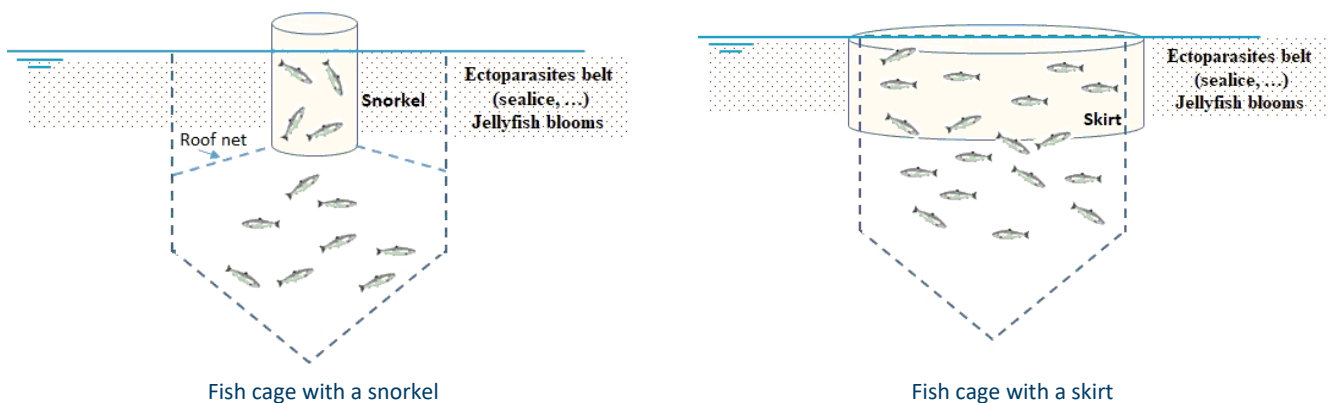


Figure 1: Design of the investigated concepts.

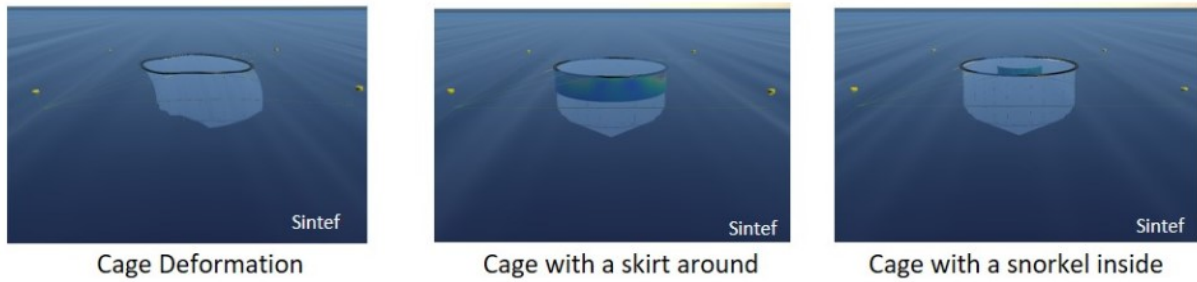
AIM

This project aims to support the European aquaculture industry to commercially utilize semi-shielded flexible cages for finfish farming. The project will do this by delivering the necessary knowledge base and by developing necessary tools and methods for the design, the operations and assuring structural safety of these new type of cage. Results from the project are expected to pave the way for an optimum and reliable use of shielding technologies to prevent ectoparasites disease, which is responsible for huge annual losses due to increased mortality, lost growth, and reduced product quality.

PROJECT OBJECTIVES

- Develop new model for marine flexible structures to improve safety, reliability and productivity of equipment
- Develop new procedure to detect and monitor damage to avoid structural breakage.
- Develop adapted sensors deployment strategy for cost efficient monitoring of complexes marine structures.

Figure 2: Simulations of the different concept .



STRATEGICS RESEARCH AREAS THAT ARE FOCUSED

- Three-dimensional deformation and load on flexible marine structures
- Damage Detection, Monitoring and Instrumentation Analysis in a Fluid-Structure Interaction Environment
- Sensor Measurement Strategies for Structural Monitoring of large scale marine flexible structures

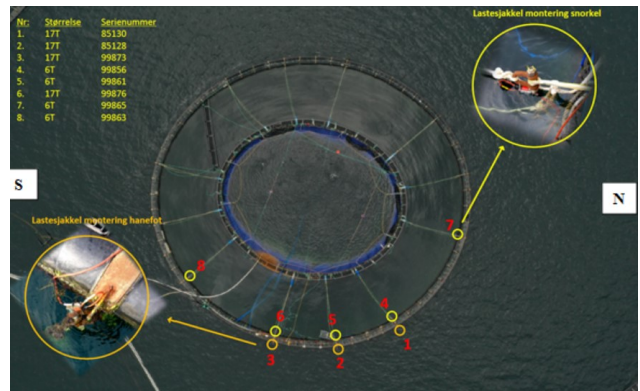


Figure 3: cage with a snorkel and location of load cells.

PROJECT PARTICIPANTS

- SINTEF Ocean AS (Project Leader).
- Trinity College Dublin
- University College Dublin
- NTNU (Norwegian University of Science and Technology)
- Egersund Net AS, Marine Harvest in Ireland, BIM the Irish Sea Fisheries Board, Bemnes seashore

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