



## Centre for research-based innovation in aquaculture technology

### ABOUT CREATE

CREATE – the Centre for Research-based Innovation in Aquaculture Technology – conducts research to assist in the innovation of technology, products and solutions specifically to improve the grow-out phase of marine fish culture. CREATE is a centre for research-based innovation, established and 50% funded by the Research Council of Norway, with world-leading companies that supply aquaculture equipment and technology with prominent scientific research institutions. SINTEF Fiskeri og havbruk AS (SINTEF Fisheries and Aquaculture) are the host institution for the centre.

CREATE focuses research and development within the following three main research pillars and aims to integrate knowledge between them:

- **Equipment and constructions** The physical equipment used to farm fish.
- **Operation and handling** The process of executing and carrying out operations necessary to farm fish.
- **Farming intelligence** Control of the total process of farming by understanding the integrated use of equipment and the process of operations and combining this with knowledge of biological issues and the physical environment.



## Projects

CREATE currently has eight main projects, five PhD students and two post-doctoral researchers within the centre. The seven projects their relation to the three research pillars of CREATE are shown in the figure.

**Cage environment** The objective is to develop improved standards for oxygen management in marine net cages to secure fish welfare and efficient production.

**Bio statistical analysis** The main objective is to develop a cage-by-cage analytical tool capable, by applying standard and relevant statistical procedures, of identifying main explanatory factors involved in the differential performance of fish populations in cages.

### Submergible cage farming and technology

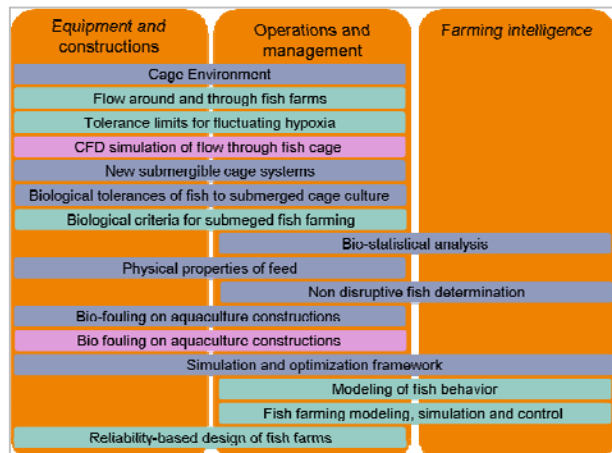
The dual objectives of this project are to: 1) improve the reliability of cage sinking and floating processes by means of process control, automation and remote controlling; and 2) to understand the tolerances of fish in submerged cage culture.

**Bio-fouling on net constructions and solutions for antifouling control** Develop a knowledge-fundament, capacities and solutions on bio-fouling, bio-fouling control, bio-fouling loads and bio-fouling sensors dedicated to net constructions.

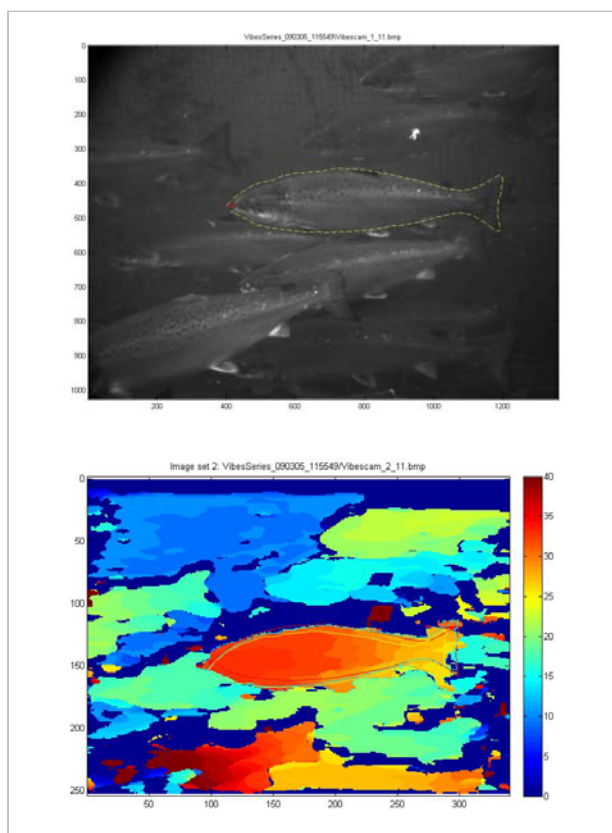
**Non disruptive fish weight determination and video surveillance** Assess and demonstrate the feasibility of automatic analysis and estimation of fish weight distribution based on images obtained from the AkvaGroup VICASS system.

**Physical properties of feed, hardness and durability** Development of feedback systems to minimize physical damage of feed during transport in feed systems.

**Simulation and Optimization Framework** Development of a framework for simulation, optimization and monitoring of all aspects of modern fish farming.



Projects, PhD and post do topics within CREATE



Example of results from one of the Non disruptive fish weight determination and video surveillance project. Identification of fish based on a computed range image.

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