This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773330

European Aquaculture Society annual conference: Berlin 8th - 10th October 2019

EU EATIP Day: Low impact – High output: Promoting food security and new value chains in aquaculture

SESSION 3 – Efficient management systems to optimize sustainability and competitiveness.

GAIN: ecological intensification and optimization

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GAIN: challenges

GAIN **overarching goal : promote the ecological intensification** of aquaculture in the EU and EEA.

Our vision goes **beyond sustainable intensification**, including:

increase in production volumes

higher quality of aquatic products

increase in profitability

decrease environmental load of aquaculture

GAIN
Green Aquaculture Intensification

VENETIARUM UNIVERSITAS IN DOMO FOSCARI

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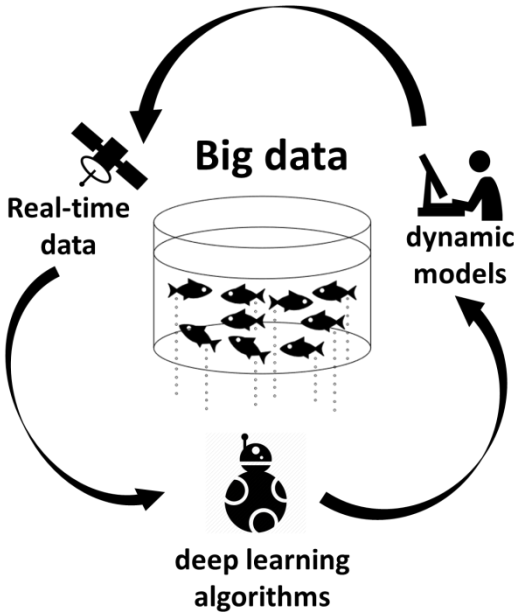
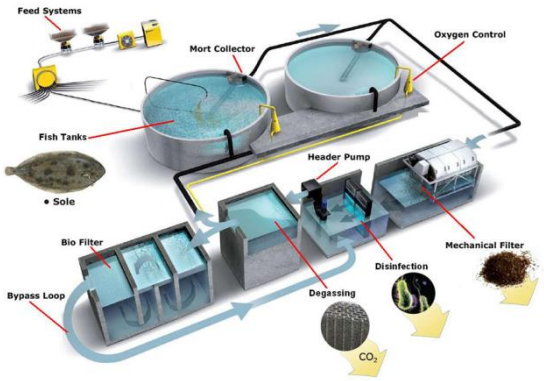
GAIN: main achievements

precision aquaculture

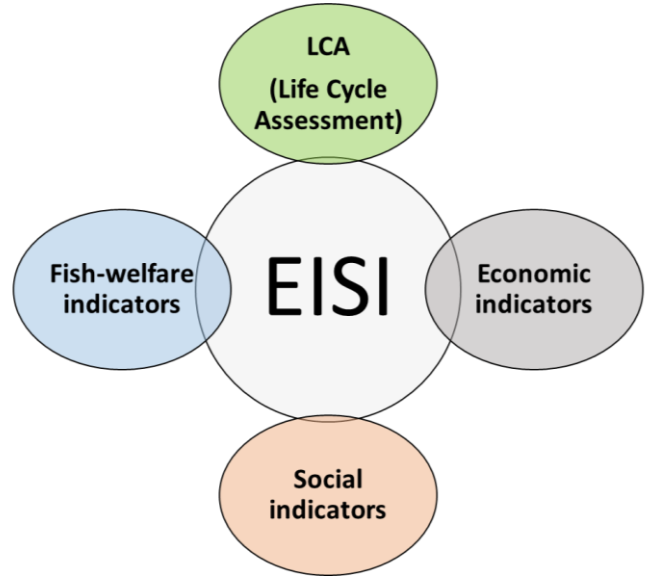


novel feeds

mortalities disposal & efficient reuse of waste water from RAS



sustainability index



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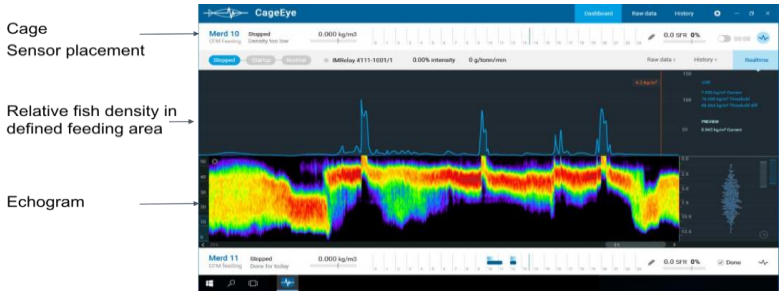
Technological gaps : precision aquaculture requires real time non invasive monitoring of fish/shellfish size distribution/biomass : Do we have "silver bullet" solution(s)?

Not yet, but very interesting approaches are emerging. In GAIN we are testing commercial and close-to-market sensors on salmon and trout farms:

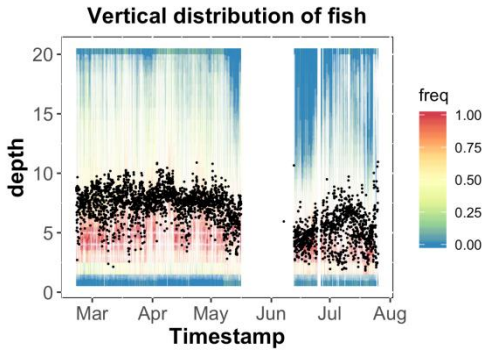
Scotland and Canada

CageEye: Beam sonar system with two transducers, providing a 2D view of **fish relative density** within a cage



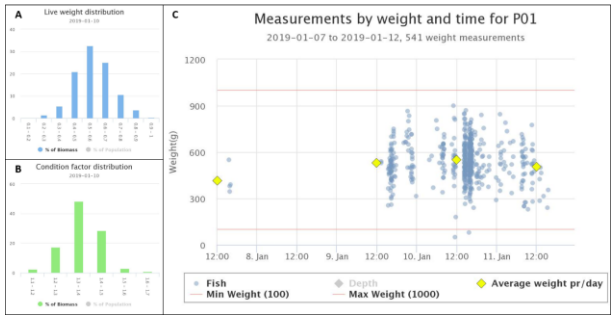
Norway

Aquaculture Biomass Monitor (ABM) provides estimates **of average weight and biomass vertical distribution**.



Italy

Biomass Daily, previously applied to salmon, **is being tested on rainbow trout**



GAIN Green Aquaculture Intensification

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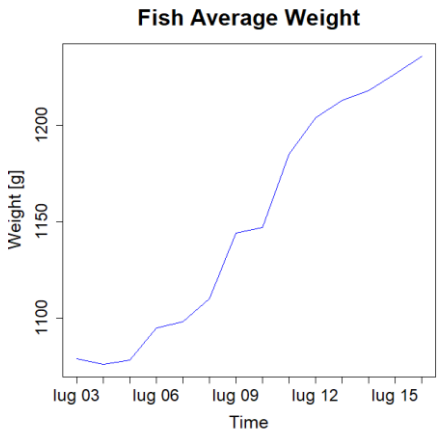
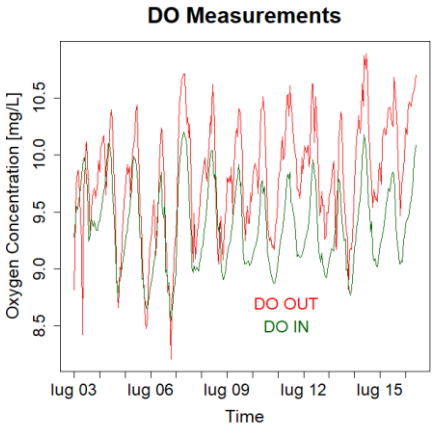
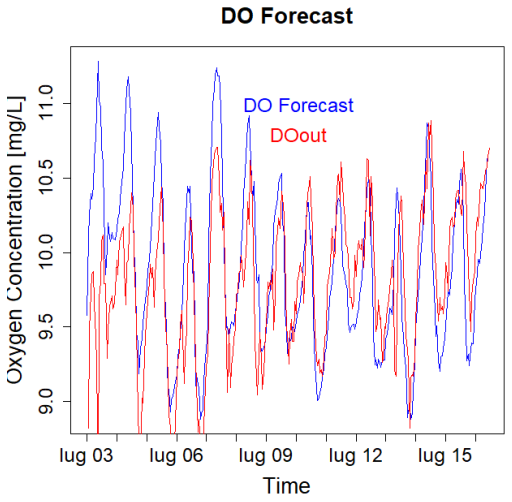
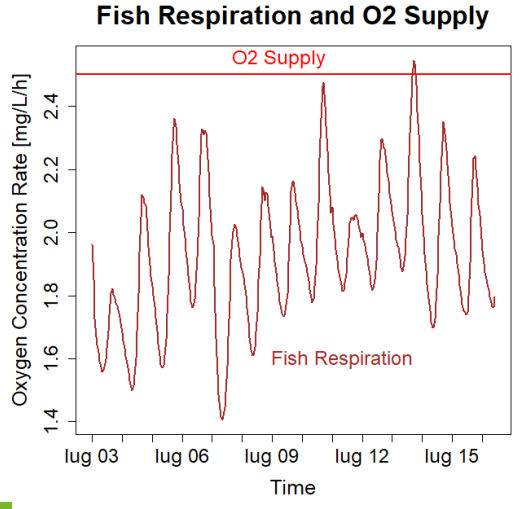
What can one do with real time data? Oxygen supply optimization

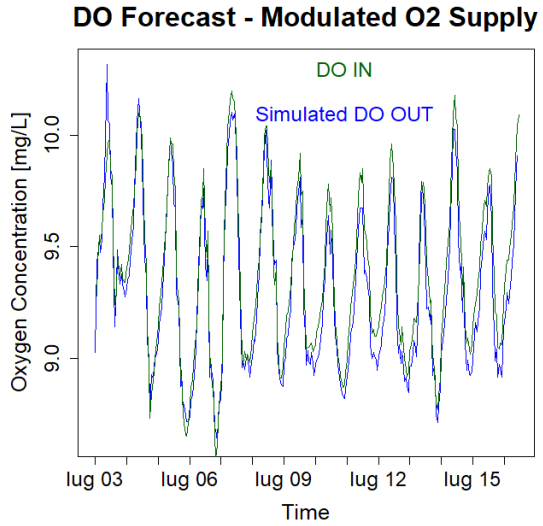




Dissolved Oxygen dynamic model







Oxygen actually supplied in **two weeks** : 773 m^3
Simulated dynamic oxygen supply : 587 m^3
Potential saving = 93 m^3/week = 122 Kg/week
0.125 **€/** Kg x 122 **= 15 € / week**
Assuming 26 weeks/year of O_2 supply, the farmer could save about 390 Euro per basin per year.
There are 7 basins in the farm, which means a **potential saving of about 2700 Euros**/year.

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GAIN: impact

B2B platform

Affiliated Farm Programme

White paper