

New technology in the aquaculture and its impact on the fish welfare

Innovative technologies in aquaculture – webinar

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Fish Welfare

Physical well-being

Mental well-being

Natural living.



Fish Welfare in EU

Council Directive 98/58/EC, Regulation (EC) 882/2004, Regulation (EC) 1/2005, Council Directive 2006/88/EC, Regulation (EC) 710/2009 (revision in preparation), and Regulation (EC) 1099/2009.

Do not impose any specific requirements on the keeping, transport or slaughter of fish.

In addition to EU regulations, many member states have specific national legislation for animal welfare, which often include specific recommendations for fish.

In this context, it should be emphasized that the aquaculture-relevant animal welfare legislation is often not harmonized among European countries.

How to measure fish welfare?

Is it obstacle or support for the Fishermens?

Rearing parameters:

- Growth rate
- Survival rate
- Feed efficiency
- Health indicators

Higher, BETTER! For both, fish and fishermen

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The fish welfare is tightly connected with the economy output

The fish welfare standards are connected with:

- **Fish species**
- **Rearing methods**



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Impact of new technology on the fish welfare

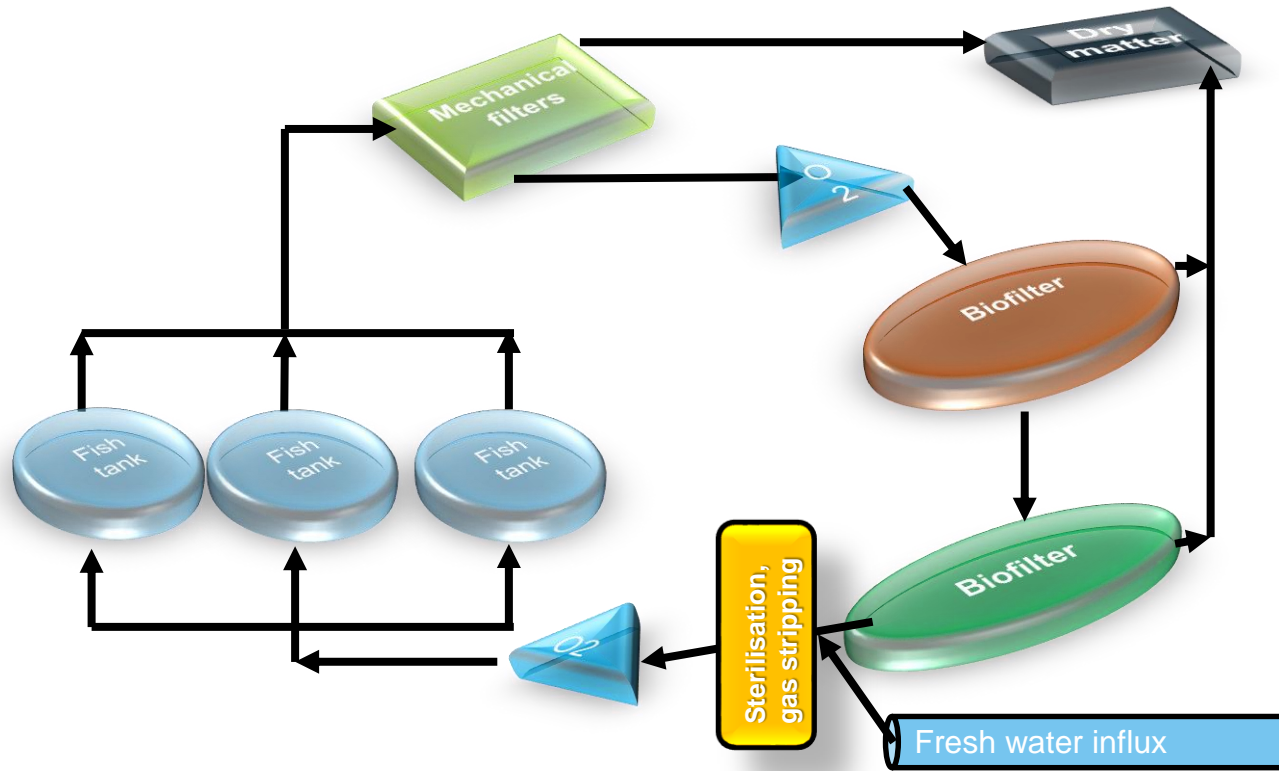


Liquid oxygen use

Higher stocking density

Better health control

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Recirculation systems

Control of:

- **water quality**
- **water temperature**
- **oxygen level**
- **pathogens**
- **light regime**

We can optimise for all fish species

Rainbow trout advanced RAS system - up to 100kg/m³

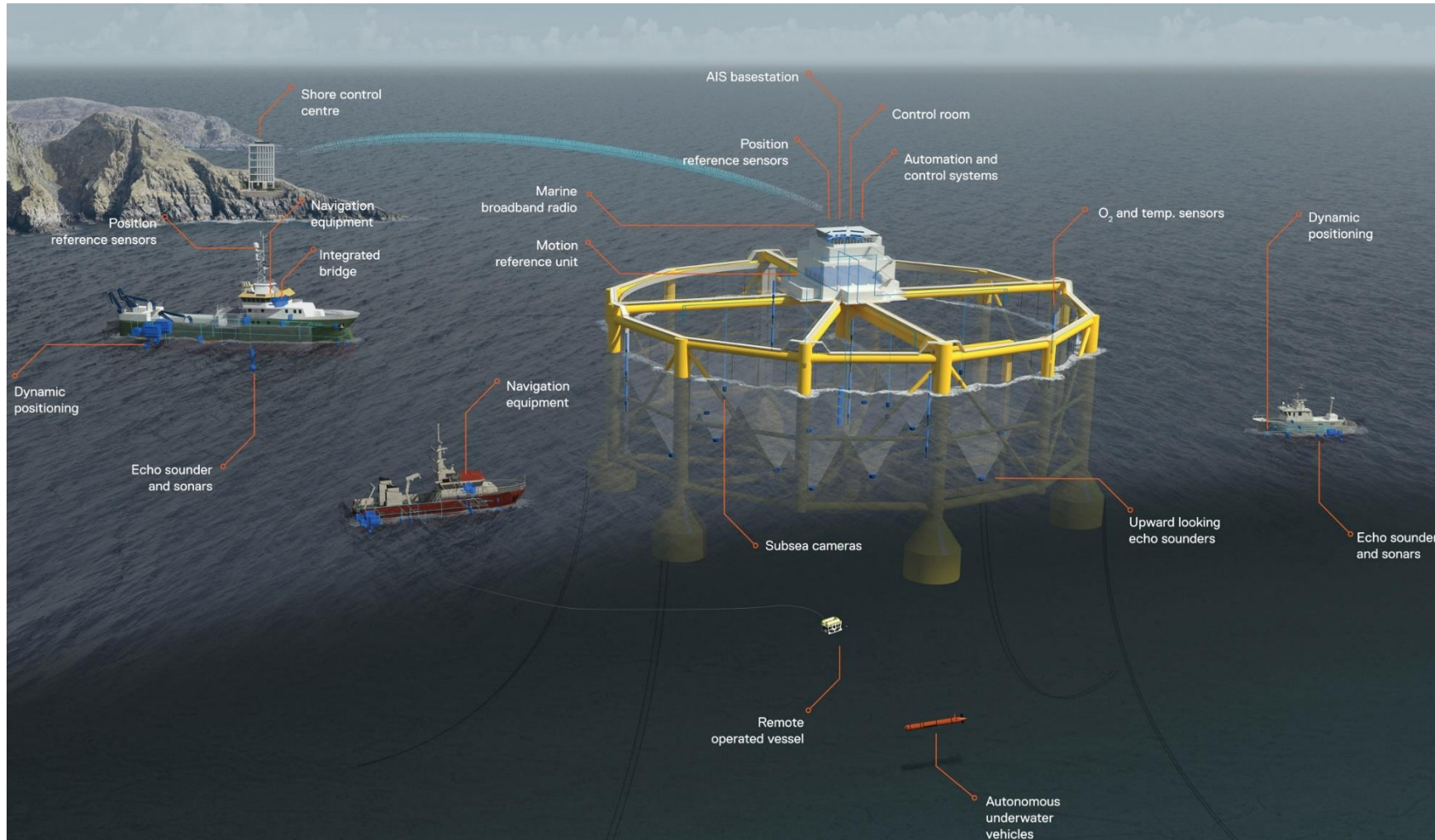
Organic (regulation) – up to 25kg/m³

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Ultra Big cages (Deep Blue 2)



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New measures
New standards – fit to the scale

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The new technology provides new conditions.

Fish welfare standards should be adopted for new situations.

Should not limit production, but should support it.

Happy fish are easier to grow in a higher number.

The new technology provides a better conditions to maintain fish welfare.



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How to provide new standards in fish welfare?

COOPERATION

WHO?

Activist with Fishermans

HOW?

Measure the rearing parameters at different stock densities

FCR, SGR, Survival



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Acknowledging the importance of dialogue



Fish welfare is a Fisherman well-being

Thank you



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