

SAFE

Sustainable aquaculture feed based on novel biomass from wood by-products

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25/05/2021 NordForsk kick-off meeting

Outline

- Motivation
- Aim and objectives
- Consortium
- Planned activities
- Dissemination events





Motivation

- Global fish production is rising
- Demand for high-quality feed ingredients of sustainable and environmentally friendly origin
- Demand for **fish oil and fish meal** in aquaculture has increased dramatically

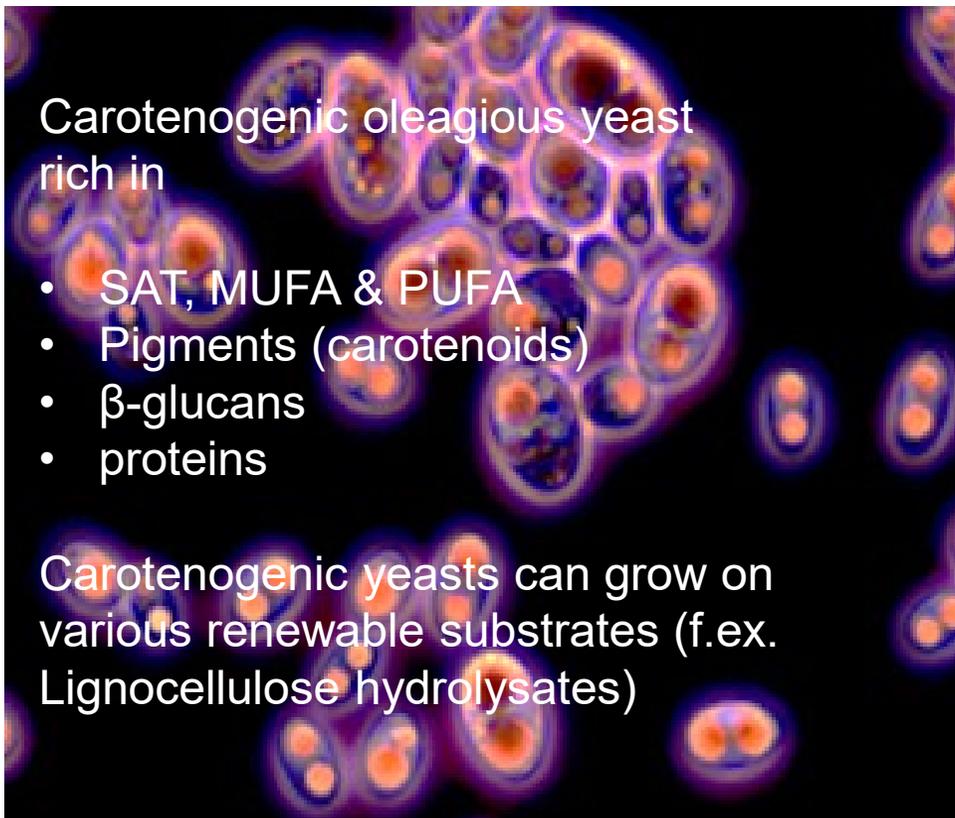
"During the 2010–30 period, prices in real terms are expected to rise by 90 percent for fishmeal and 70 percent for fish oil."

Fish to 2030: Prospects for Fisheries and Aquaculture





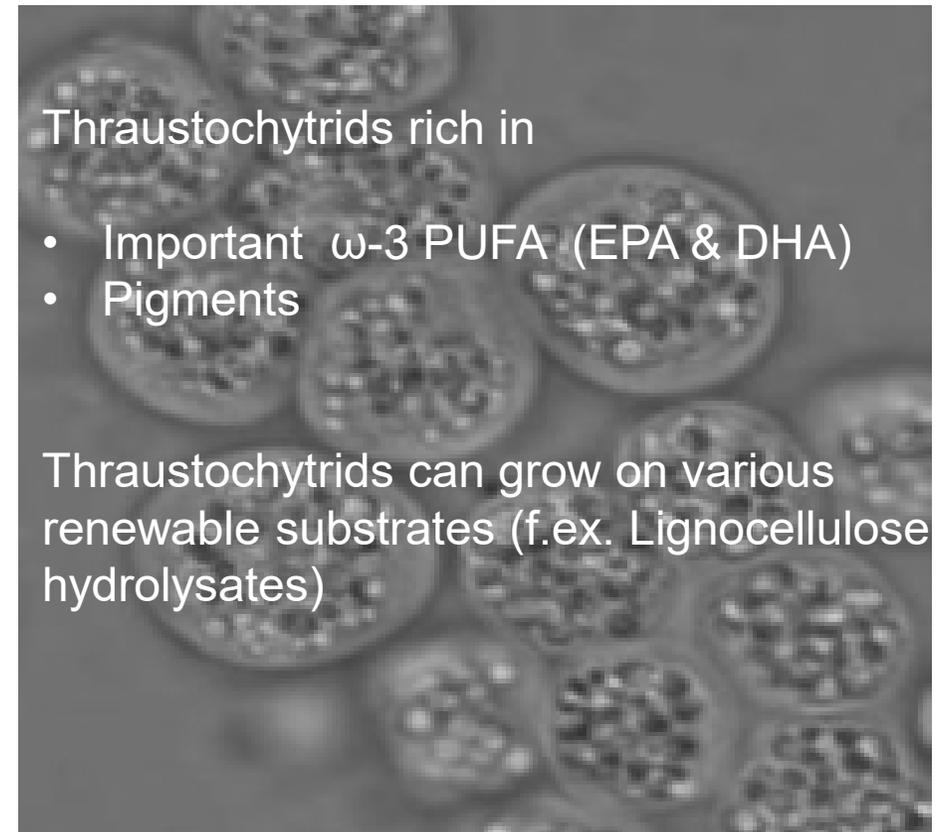
Unicellular oleaginous microorganisms, if sustainably produced, could potentially replace fish oils and fish meal in aquaculture

A microscopic image showing numerous yeast cells. The cells are roughly spherical and have a bright orange-red center, indicating the presence of carotenoids. The cell walls appear slightly darker, and the overall background is dark, making the individual cells stand out.

Carotenogenic oleaginous yeast
rich in

- SAT, MUFA & PUFA
- Pigments (carotenoids)
- β -glucans
- proteins

Carotenogenic yeasts can grow on various renewable substrates (f.ex. Lignocellulose hydrolysates)

A microscopic image of Thraustochytrids, which are unicellular algae. The cells are large and roughly spherical, with a complex internal structure. They appear as bright, granular structures against a dark background, showing various organelles and possibly lipid droplets.

Thraustochytrids rich in

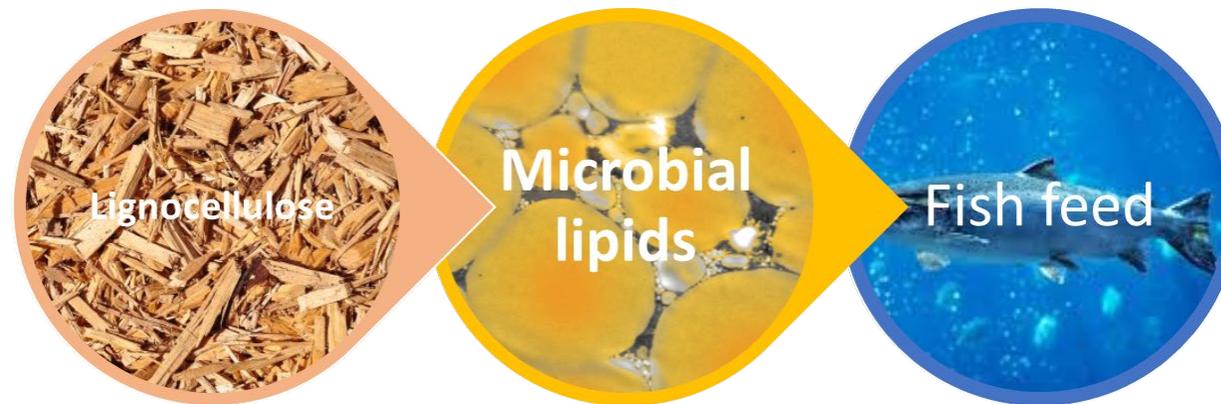
- Important ω -3 PUFA (EPA & DHA)
- Pigments

Thraustochytrids can grow on various renewable substrates (f.ex. Lignocellulose hydrolysates)

Aim and objectives

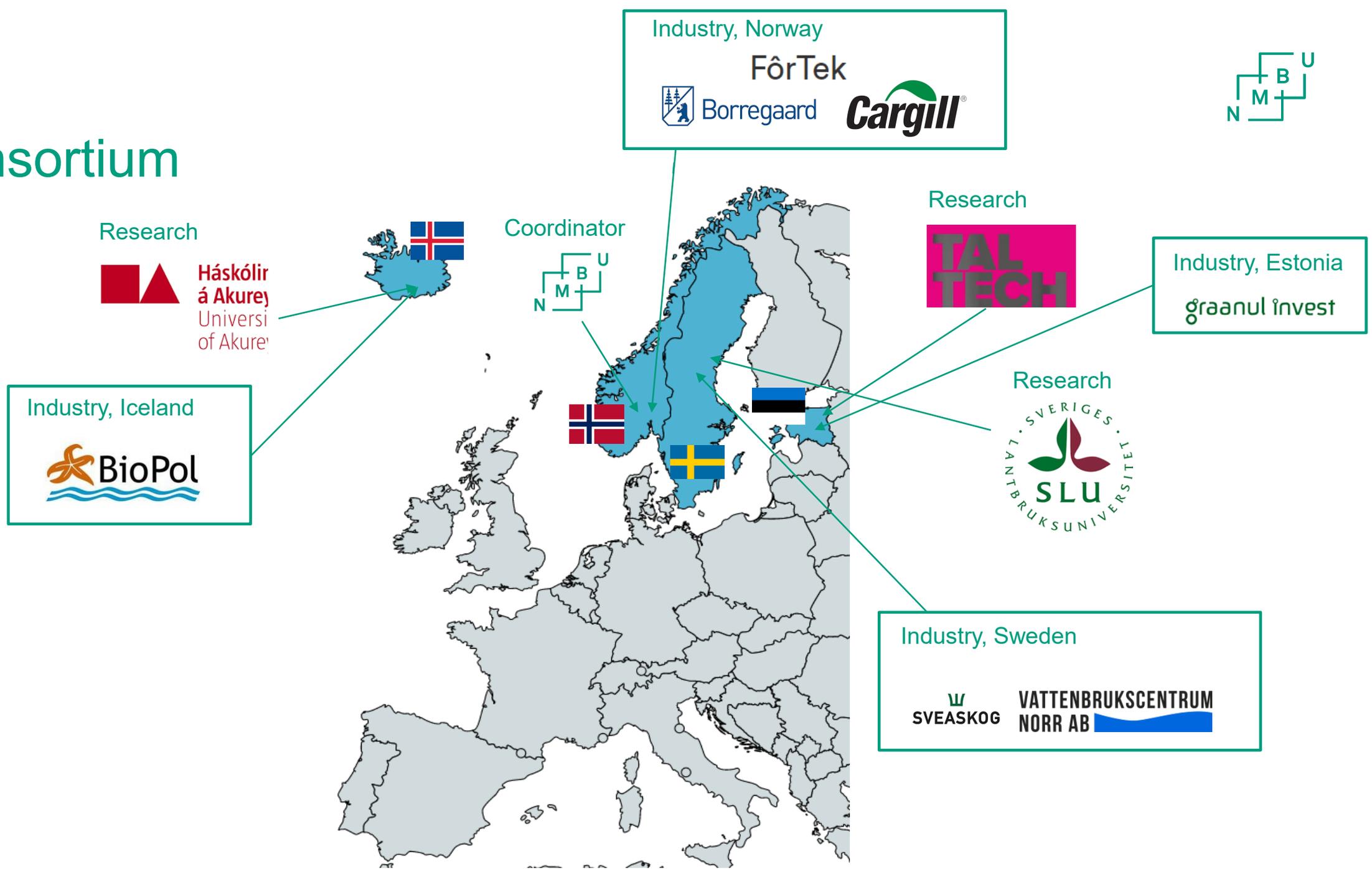
SAFE project aims at utilizing the potential of oleaginous yeast and thraustochytrids and developing high-value oil enriched biomass containing lipids, carotenoids, astaxanthin and beta-glucans for salmon feed from wood-based materials.

SAFE will develop a process for producing microbial biomass with a high level of omega-3 PUFA and omega-6 MUFA and PUFA by oleaginous thraustochytrids and yeast from the second-generation sugars derived from Nordic woody feedstock.





Consortium



Research



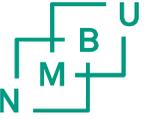
Coordinator



Industry, Norway

FôrTek

Borregaard Cargill



Research



Industry, Estonia

graanul invest

Industry, Iceland

BioPol



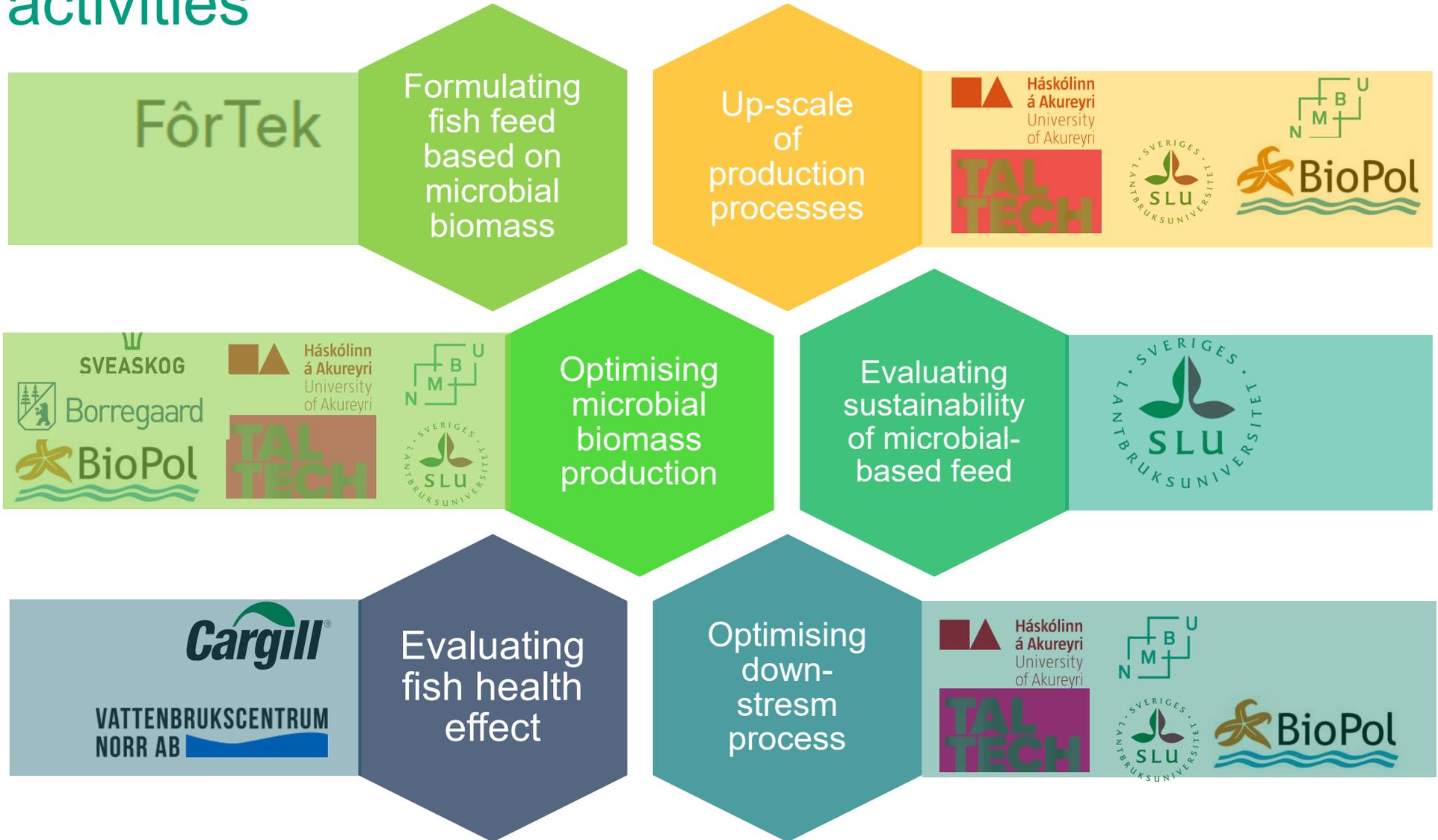
Research



Industry, Sweden

SVEASKOG VATTENBRUKSCENTRUM NORR AB

Planned activities





Dissemination events

- Conferences

[ICANFT 2022: Aquafeed, Nutrition and Feed Technology Conference, Istanbul \(Mar 22-23, 2022\)](#)

[ICSAF 2022: Sustainable Aquaculture and Fisheries Conference, Istanbul \(Mar 22-23, 2022\)](#)

[Yeast Lipid Conference, Gothenburg, Sweden \(June 1-3, 2022\)](#)

[COST](#)

[EuroFedLipid](#)

- Press releases

Thank you for attention! 😊

