

GOVERNMENT
KEY PROJECT

Blue Bioeconomy in Finland

Future of the Gulf of Bothnia Seminar
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Riitta Rahkonen and Timo Halonen
Ministry of Agriculture and Forestry

@riitta_rahkonen @TimoAHalonen

[#sininenbiotalous](#) [#bluebioeconomy](#)

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Background

- "Advancing blue bioeconomy" is one of the Government's key projects
 - 5 M€ in 2016 - 2019
 - Steering group with 5 ministries, Finnish Academy, Business Finland, Sitra, ELY-center (Etelä-Savo) and Regional Council of Ostrobothnia
 - National development plan for blue bioeconomy 2025 was published in 2016 (in [Finnish](#))
- Research and competence agenda for the blue bioeconomy was published in July 2018
 - in [Finnish](#) and [Swedish](#)

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Definition

National development plan for blue bioeconomy 2025:

- The blue bioeconomy means **business activities and value creation** based on sustainable and smart use of renewable aquatic resources and expertise associated with it
- The blue bioeconomy depends on a **good status of waters**. Achieving and maintaining this supports the development and marketing of blue economy **products** and **services**.

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Climate change

GLOBAL FACTORS OF CHANGE

Urbanisation

Population growth

Clean water

Competition for natural resources

Health and wellbeing



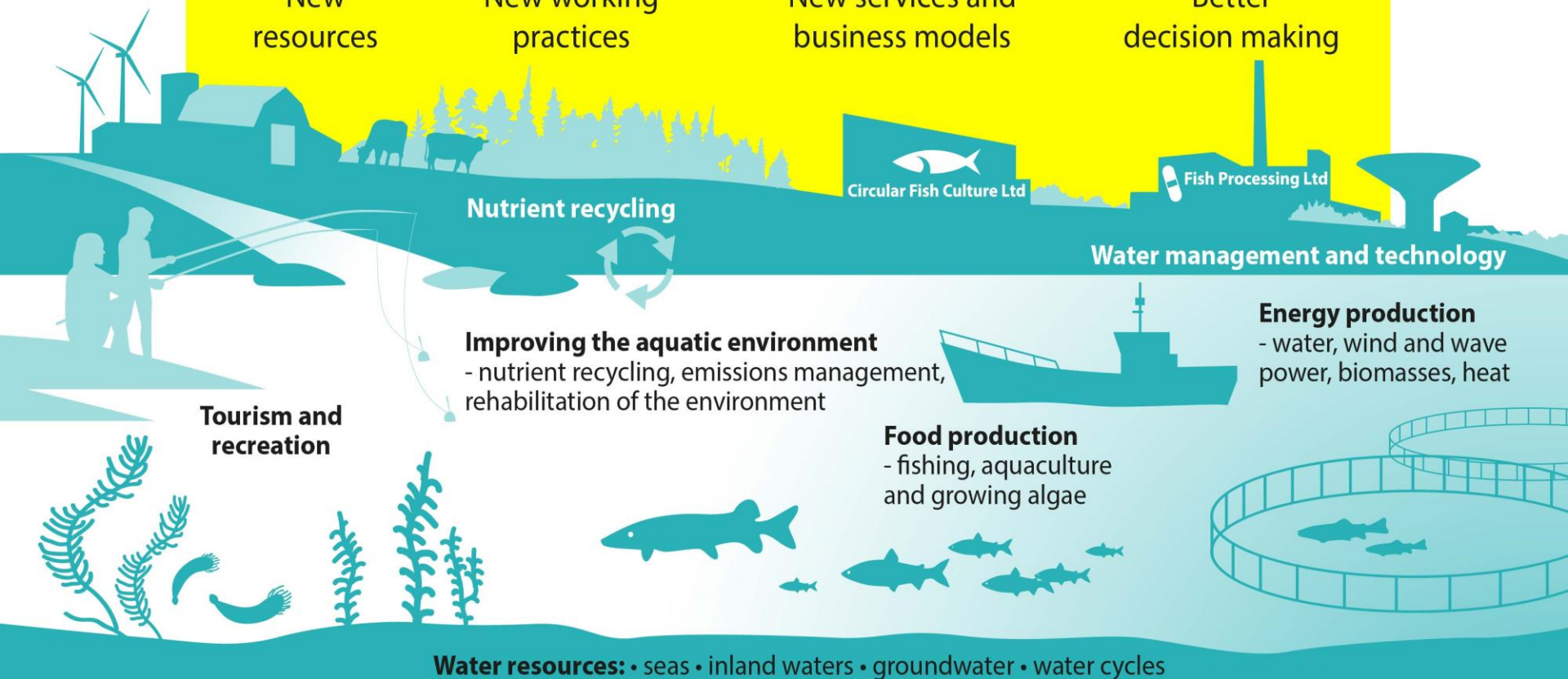
VALUE OF RESEARCH AND KNOWLEDGE AND SKILLS

New
resources

New working
practices

New services and
business models

Better
decision making



Areas of business opportunities

- Water is closely linked to the UN's Sustainable Development Goals
- This involves growth opportunities in international markets for Finnish companies
- Business opportunities and research needs were analysed through the following SDG goals:



Public-private partnership

- Finland can offer competitive solutions to the world's challenges, when the public and private sectors engage in goal-oriented collaboration, New kinds of test environments of businesses and the public sector are needed
 - Examples:
 - In Mikkeli, the aim is to create test environment for new water processing technologies and in Laukaa for new recirculation aquaculture systems (RAS)
 - In Varkaus, the aim is a new public-private partnership model to develop RAS farming operations

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Business opportunities in sustainable food production

- Demand of food is estimated to increase 50% by 2030 globally
- Ocean, seas and inland areas could be better utilized for healthy, climate- and environment-friendly protein production and harvesting
- All aspects of sustainability are important
 - economy, ecology, social, cultural

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Business opportunities in sustainable food production

- Trade balance of fish and fishery products is 350 mill € negative in Finland
 - Most of the fish we eat is imported
- Five innovation programmes are financed by the European Maritime and Fisheries Fund in 2017-2023
 - The aim is e.g. to find new innovations and achieve more value from aquaculture, fishing, fish processing and their side-streams
- Good news! Trawl and trap net fishing of baltic herring and sprat got MSC certificate in June

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Isoja kasvattamoita on tekeillä ennätysmäärä

Record amount of big farming units are in preparation

Aquaculture production was ca 15 mill kg in 2017

 Toiminta alussa

Production started

 Lupa myönnetty

Production license given

 Tulos 2017

Returns in 2017 €

Haukipudas 1 milj. kg

–400 000 €

Varkaus, Finnforel 1 milj. kg

Luvia 600 000 kg

–1,3 milj. €

–4,4 milj. €

Eckerö, Fifax 1–3 milj. kg

Uusikaupunki, Sybimar 400 000 kg

Kustavi 300 000 kg

Smooth operation of the whole value chain is important – including packing



The John Nurminen Foundation local fishing project

“Aim is to recycle a significant amount of nutrients from sea to land by fishing that targets cyprinid fish and, at the same time, helps underused domestic fish find their way to the plates of the Finns”



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Business opportunities in clean water and sanitation

- Need for fresh water is estimated to increase 30% by 2030
- Big potential in
 - water-saving and water-recycling solutions and smart management of water resources
 - technologies to remove drug residues and microplastics from wastewater
 - no-water sanitation concepts, etc.

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Case Mikkeli

- A new wastewater treatment plant will be constructed in the Mikkeli Metsä-Sairila area
- The objective is to create a new kind of circular economy environment for business and R&D activities relevant to the current waste management centre
- One part of the plant is a test bed where enterprises can test new solutions and technology in real operational environment
- “When completed in 2020, the treatment plant will be one of the most modern wastewater treatment plants not only in Europe but also worldwide”

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Case Mikkeli



http://mipu.fi/wp-content/uploads/2016/11/Metsa-Sairila-bedrock-plant_brochure.pdf

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Business opportunities in healthy and diverse water environments

- Good water quality is basis for food production and for all blue bioeconomy businesses
- Pessimistic estimation: there will be more plastic in the oceans than fish by 2050
- Big potential in solutions reducing eutrophication, restoring rivers, lake and sea beds, litter harvesting, etc.

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Case Baltic Sea

- Solutions are badly needed to decrease nutrient loads draining into the Baltic Sea and also how to remove and reuse existing nutrients
- WWF: healthy Baltic Sea can provide 500 000 additional jobs
- Methods to improve the ability of soil to catch and bind nutrients have been developed and tested



Conclusions

- Goals set for the blue bioeconomy cannot be obtained with "business-as-usual"
- New mindset, new pp-partnerships and clusters, new technology, new products, new services are needed
- Target to international markets solving sustainable development goals!

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More information

- See ongoing [key projects](#) in blue bioeconomy:
 - Internationalisation of water sector, service concepts for blue tourism, utilisation of nutrients and energy in water systems
 - Projects related to digitalisation will be selected this autumn
- Series of blogs from different sectors of the blue bioeconomy will be published during autumn 2018 in biotalous.fi (in Finnish)

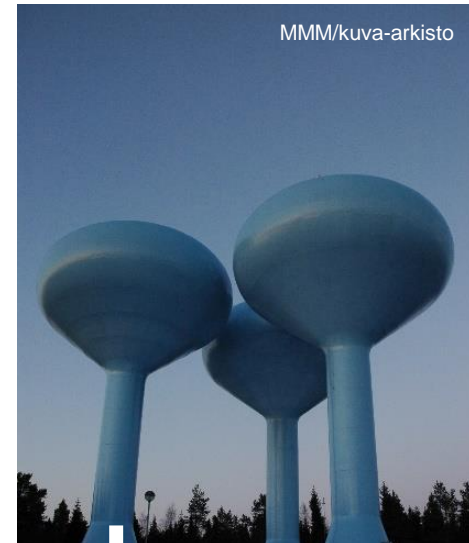
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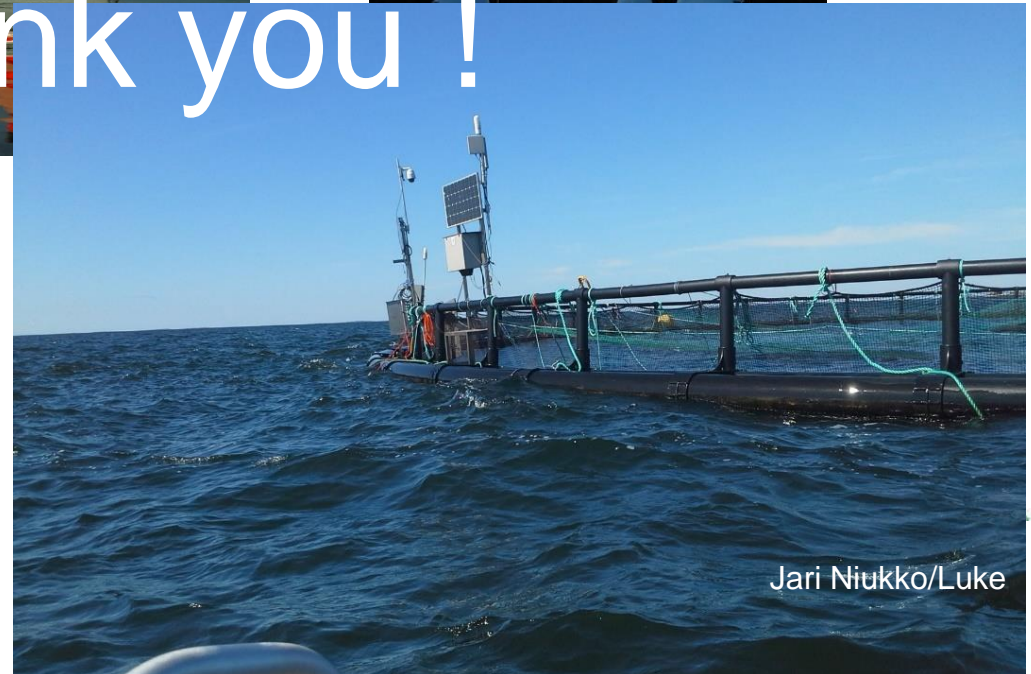


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Thank you !



Pro Kala



Jari Niukko/Luke