2ND SUBMARINER Conference

Better off Blue

#BetterOffBlue17

Creating synergies for a biobased society

InnoAquaTech - cross-border cooperation for integrating innovative RAS technology within the South Baltic Region

Adrian Bischoff-Lang
Aquaculture & Sea-Ranching

Universität Rostock Traditio et Innovatio

The State of World Fisheries and Aquaculture

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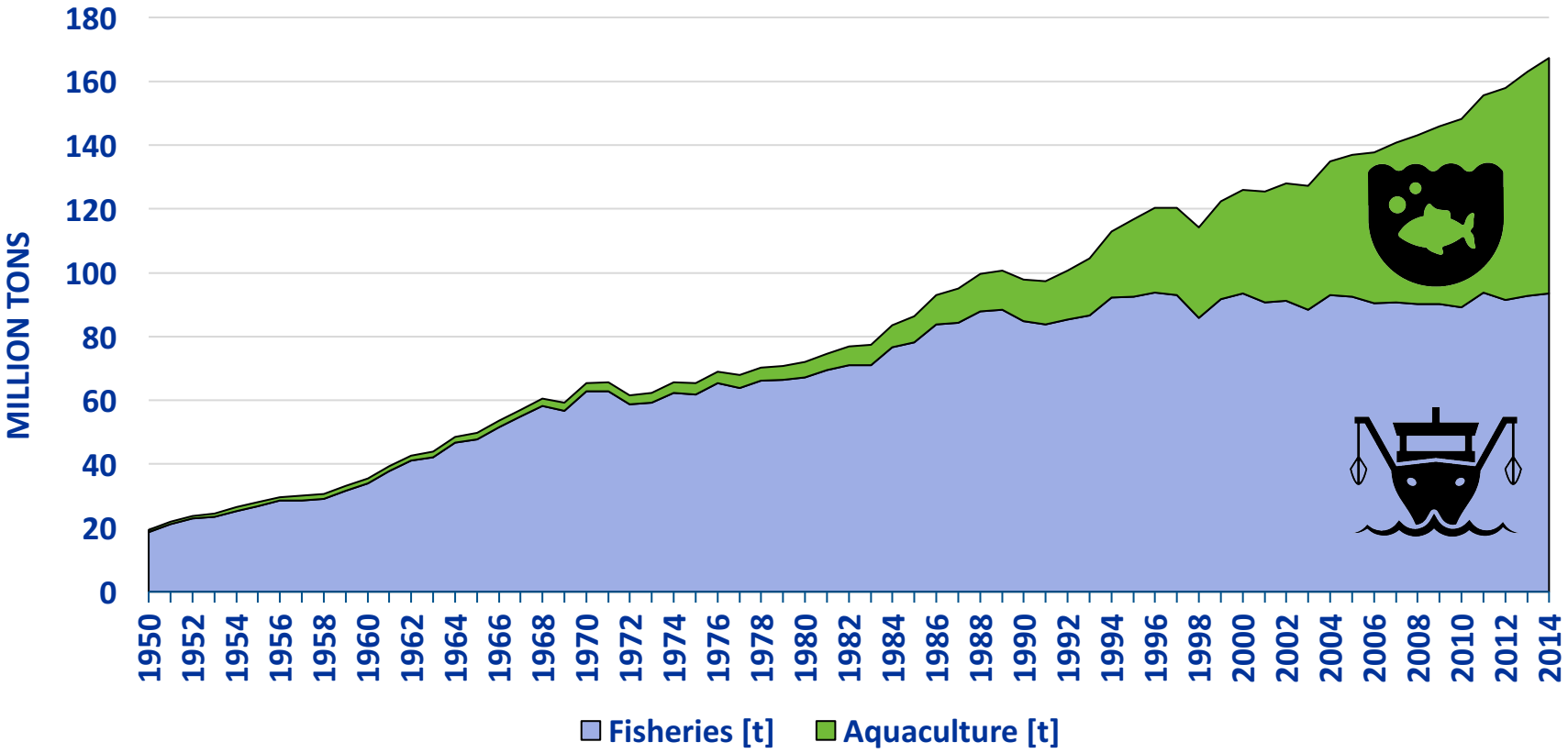

Redrawn from FAO 2016

Aquaculture is still a fast growing sector!

Where do we find the South Baltic Region (SBR)?

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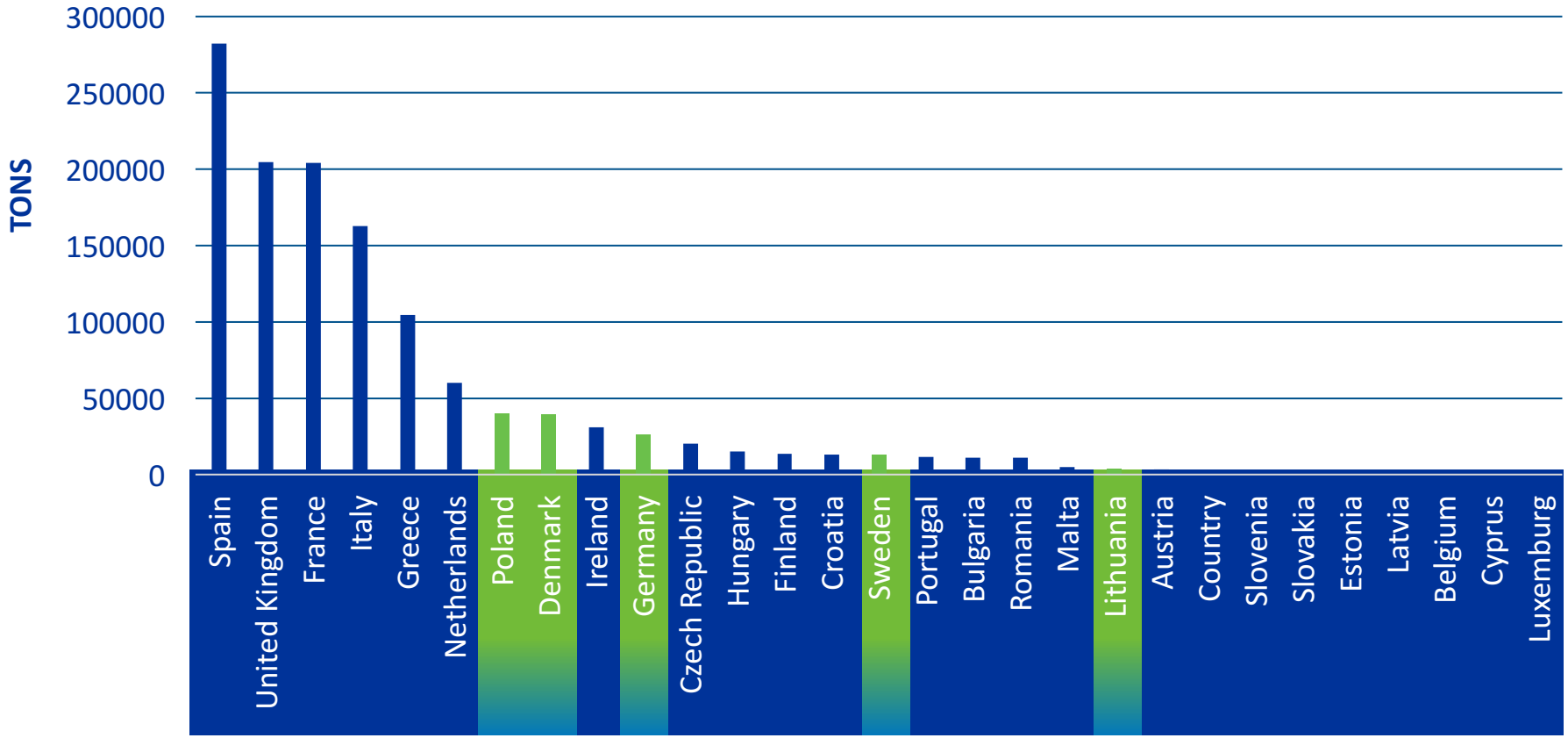

source: FAO 2016

The SBR does not play a substantial role in EU's aquaculture sector. Net cage aquaculture is still the most prominent technology.

Aquaculture forecast

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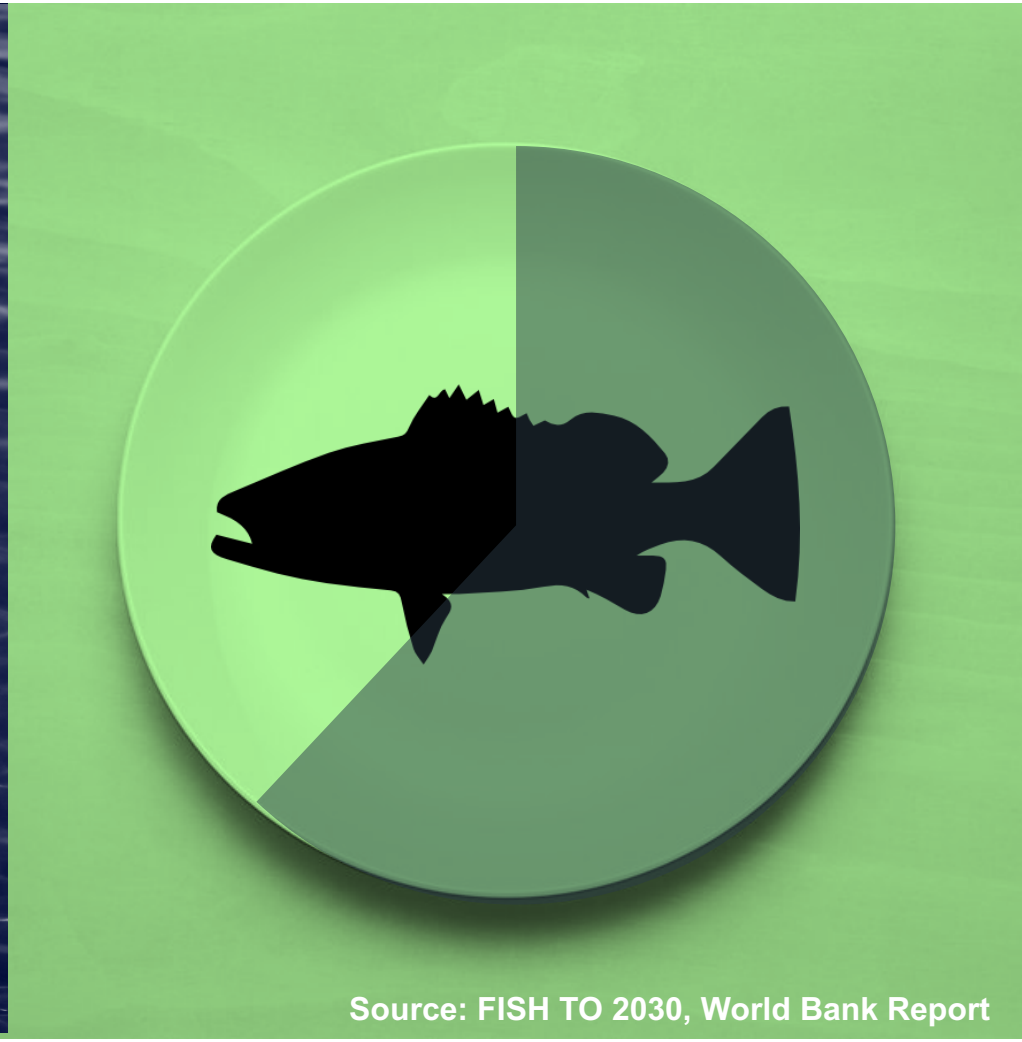
62%

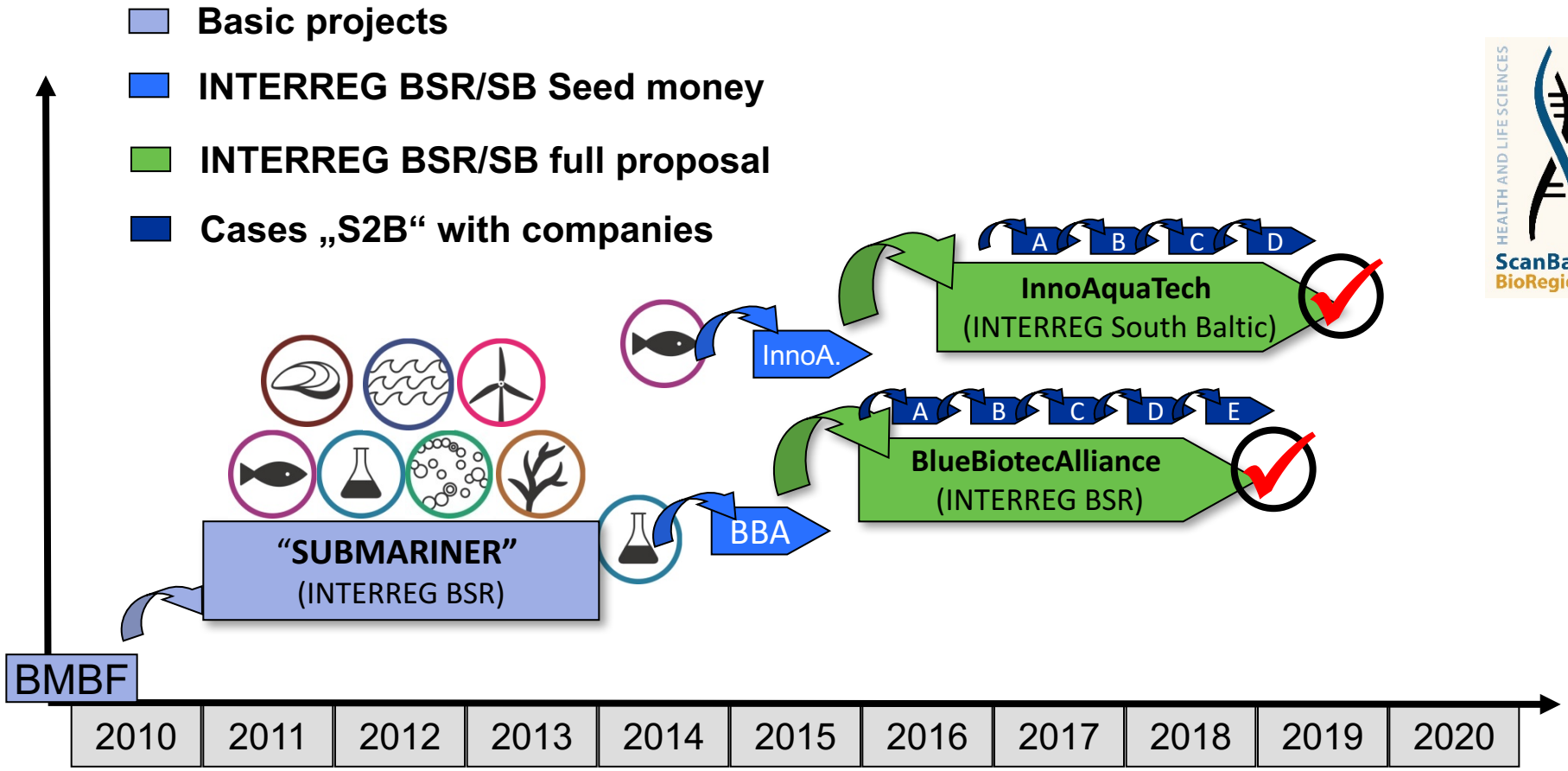
of food fish will come from AQUACULTURE by 2030

There is still time for the SBR to play a role in this game!



Source: FISH TO 2030, World Bank Report

Road Map of Cross-Border Cooperation



Jul. – Dec. 2015: EU-seed-money-project and final project (2016 – 2019) for Innovative Aquaculture Technologies in the South Baltic – „InnoAquaTech“

Findings of the SUBMARINER Compendium

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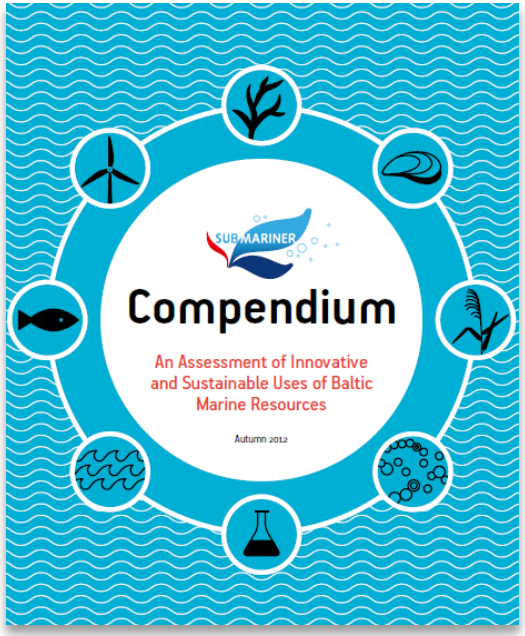
Challenges of SBR:

- Lack of suitable sites in the sea
- Rarely established marine aquaculture production
- Existing open net cage aquaculture is not sustainable, yet

strong technology sector

Highest potential in SBR:

- Land-based Recirculating Aquaculture Systems (RAS)
- Integrated Multitrophic Aquaculture (IMTA)



InnoAquaTech Overview I
Facts

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Purpose of the project:
InnoAquaTech contributes to cross-border development and the transfer of innovative, sustainable, and environmentally friendly aquaculture technology within the South Baltic Region - a hot topic on the European Commission Blue Growth Agenda.

Partners:

1. **BioCon Valley** GmbH (DE), - ***Lead***
2. **University Rostock** (DE)
3. **AgroTech/DTI** (DK)
4. **Maritime Institute in Gdańsk** (PL)
5. **University of Gdańsk** (PL)
6. **National Marine Fisheries Research Institute** (PL)
7. **Klaipeda Science and Technology Park** (LT)

Project Partner:

Running Time: 01.07.2016 – 30.06.2019

Total Budget: € 1.677.126,25

Programme: Interreg South Baltic https://southbaltic.eu/

InnoAquaTech Overview II
Key Elements

Production:
Access to state-of-the-art technology, know-how, expertise, lifecycle analysis and financing models for SMEs

Investment:
Decision support (tool) for potential investors and establishment of a strong aquaculture economy in the SBR

Scientific knowledge (4 pilots):
Evaluation of sustainability and development of innovative and integrated recirculating aquaculture systems - RAS

InnoAquaTech Overview III
SME service offer

SME and investor support via

‚Innovation Check Tool'

Guidelines for innovative financing modells

Matchmaking events

Summer-Schools

Study-Visits

Trainings

South Baltic Aquaculture Alliance

InnoAquaTech Overview IV
Concept of SME study visits

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Background

- Presentation about:
  - Regional market situation
  - Environmental conditions
  - Importance of facility
- Gathering questions and needs of participants

Demonstration

- Facility tour
- Demonstration of:
  - Used technology and best practice
  - Quality management and animal welfare
  - Existing value chain

- **Exchange of ideas and experiences**
- **Getting in contact for future collaboration**

InnoAquaTech Overview V

Concept of SME summer schools and matchmaking events

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Planned dates:
- University of Rostock (3.Q 2018)
- University Gdansk(1./2. Q 2019)

Concept:
- Combination of:
  - Experts speeches
  - Small scale projects
  - Laboratory activities
  - Field trips

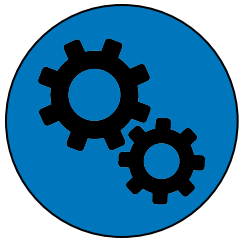
Topics:
- Aquaculture systems
- Feed
- Chances and risks
- Animal welfare
- Sustainability
- Best-Practice

Project Partner, associated Partner and external specialists

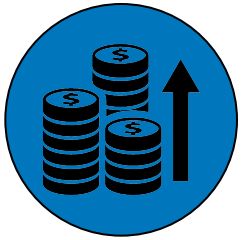
SMEs, producers, investors, stakeholders

Understanding of sustainable aquaculture

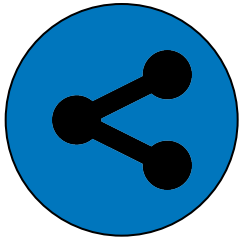
InnoAquaTech Overview VI
Technology pool



Available technology



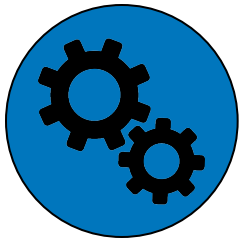
Cost benefit ratio



Relevant components, species, combination

Local adjustments: Market analysis & regional requirements

InnoAquaTech Overview VI
Technology pool



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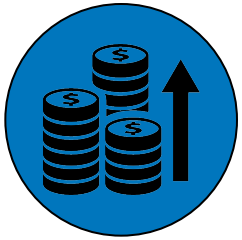

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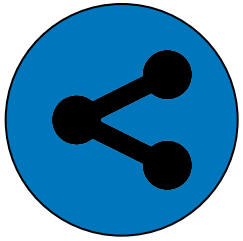
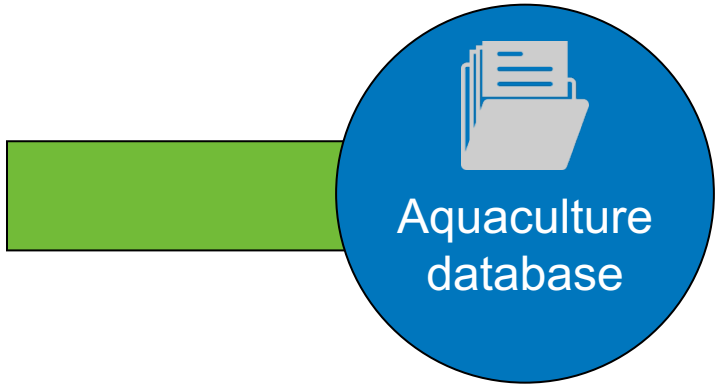


Relevant components, species, combination

Local adjustments: Market analysis & regional requirements

InnoAquaTech Overview VI
Technology pool / Decision-Support-Tool



Decision-Support-Tool

- For **Investors** and **Stakeholders**
- Preliminary decision:
  - Reasonable and sustainable technology
  - Marketable species
  - Local requirements

Decision-Support-Tool

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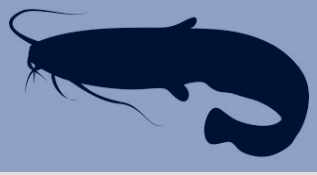
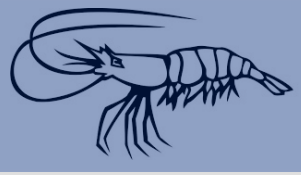
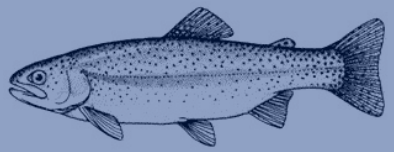
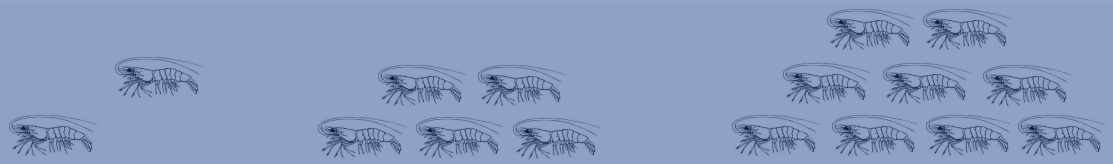
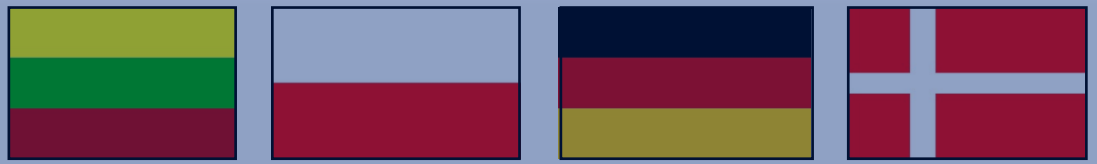
Investor…

Select Culture Species



Select Production Volume



Select Country



Select Source of Energy

Decision-Support-Tool → Outcome

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- Consumption:

  - Water: Liter per kg produced „fish“
  - Energy: kWh per kg produced „fish“
  - Feed: kg per kg produced „fish“

→Combining these outcomes with the local market conditions suppoprts the decision of the investor

Decision-Support-Tool

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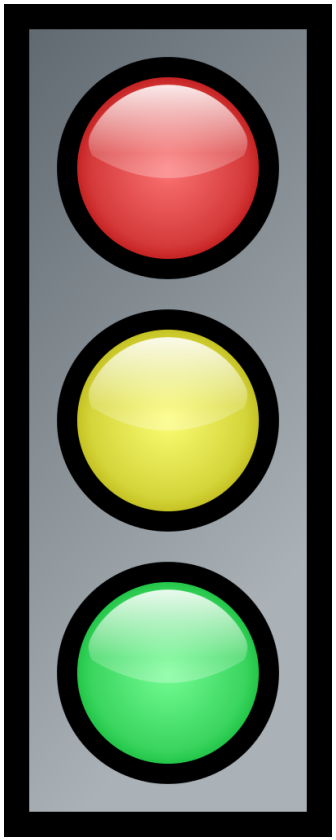
Investor…



Please completely re-consider your choices!

Please adapt some of your choices!

Your choices are feasible!

Please get in touch with your national contact person

InnoAquaTech Pilot 1

InnoAquaTech

Development of a zero-emission-RAS Geothermal energy for shrimp cultivation in Lithuania

Andrius Sutnikas
Klaipeda Science and Technology Park

KLAIPĖDA SCIENCE AND TECHNOLOGY PARK

InnoAquaTech Pilot 2

InnoAquaTech

Demonstrating the sustainability and raising awareness for the possibility of crustacean production in RAS systems in Pomerania

Hanna Łądkowska, Monika Normant-Saremba, Basia Dmochowska,
Halina Kendzierska
University of Gdansk, Poland

UNIVERSITY OF GDANSK

InnoAquaTech Pilot 3

InnoAquaTech

The FishGlasHouse
Aquaponic production in Mecklenburg-Vorpommern

Prof. H. Palm, Dr. A. Bischoff-Lang, MSc. Jan Klein,
MSc. Jan Eike Krämer
University of Rostock - Aquaculture and Sea-Ranching

Universität Rostock Traditio et Innovatio

InnoAquaTech Pilot 4

InnoAquaTech

RAS combined with microalgae cultivation in Denmark

Oliver Körner, Lars Jørgensen, Hilary Karlson
Danish Technological Institute (DTI)

DANISH TECHNOLOGICAL INSTITUTE

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SUBMARINER NETWORK

Interreg South Baltic

EUROPEAN UNION

European Regional Development Fund

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