POTENTIAL OF SUSTAINABLE SCIENCE AND EDUCATION BASED ON PILOT EXPERIMENTS AND STAKEHOLDERS' ENGAGEMENT
CASE OF BLUE BIOECONOMY IN THE BALTIC SEA REGION

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University of Gdańsk

Actors across the Baltic Sea recognize the demand for sustainable science and education in blue bioeconomy sector. University of Gdańsk is no exception, and in collaboration with partners finds a potential in **demonstration projects with high stakeholders' engagement**:

The blue bioeconomy areas covered in the projects relate to sustainable use of renewable aquatic resources and are crucial to achieving blue growth. Projects areas cover the following: **fish and shrimps offshore and on-land recirculating aquaculture, mussel and algae farming and harvesting, marine biotechnology, waste-water management, aquaponics, and circularity of the developed systems**.

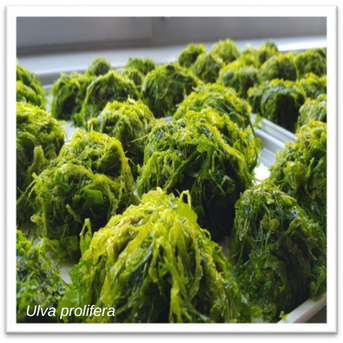
Research carried out within the projects is focused on:

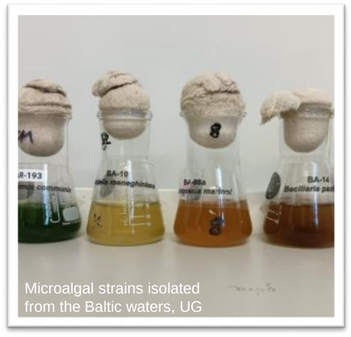
- most promising sustainable solutions based on EC Blue Growth agenda for the Baltic Sea region in terms of growth and job potential
- integrating scientific experiments with interdisciplinary approach: market analysis, life cycle assesmsnts, feasibility studies, economical models, etc.
- the potential of application into business & development of best practices
- stakeholders' engagement, including all actors along the vaue chains, as a **key to success in education, science communication, networking and science & business cooperation**:
  - students
  - young professionals
  - SMEs
  - NGOs
  - entrepreneurs
  - researchers
  - investors
  - authorities
  - …

The ultimate goal of the pilot studies and stakeholders' engagement is to maximize the relevance and impact of research and education. A guiding principle is to involve stakeholders both with the research itself and in developing social awareness to in turn address research, community and market needs.

Research on sustainable solutions:
crucial for academic & professional training, business consulting & applications development


L. vannamei grown in RAS 500, UG


Ulva prolifera

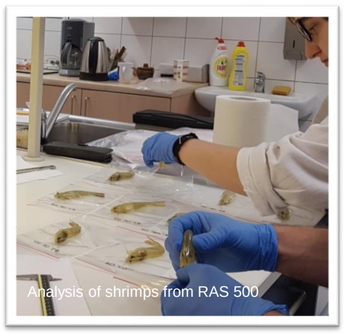

Microalgal strains isolated from the Baltic waters, UG


Paleomon elegans

Examples of bue bioeconomy experiments based on the **first on-land recirculating aquaculture system of whiteleg shrimp (*L. vannamei)* aquaculture in Poland, University of Gdańsk** include:

- *Litopenaeus vannamei* (whiteleg shrimp) cultivation in the small-scale laboratory recirculating aquaculture system (RAS 500) including: acclimation, survival, feeding, system parameters, system functionality, shrimps, and market analysis, and feasibility studies
- macro- and microalgae selection and cultivation in conjunction with shrimps
- cultivation of native and non-native invertebrates from the Baltic Sea as an alternative food source for humans, or as feed in the fish farms


RAS 500, IOUG

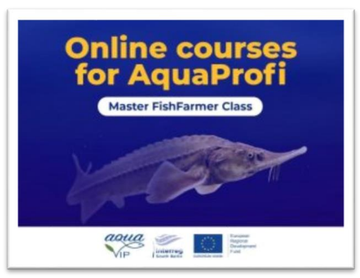

Analysis of shrimps from RAS 500

Summer schools, workshops, webinars & study visits:
a true success with a number of participants form the South Baltic region and beyond


Study visit to Klaipeda, LT


White shrimp - summer school, UG


Innovative aquaculture Summer school, UG

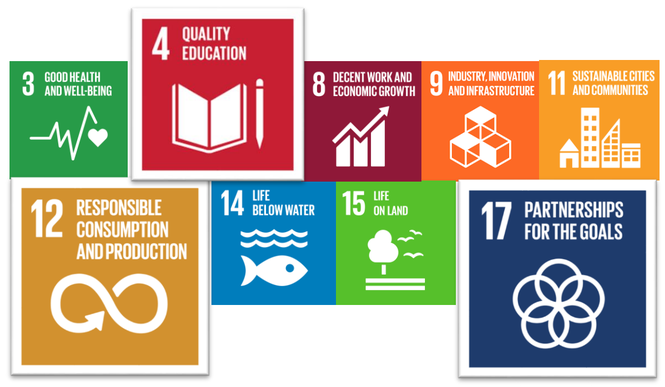



Workshop for professionals, UG

Conducted research serves as **demonstration & basis for further activities**, which deliver crucial academic and hands-on-experience training for students and young professionals, support business performance and development across the sustainable blue bioeconomy industry, further increase the awareness of existing blue bioeconomy knowledge in the Baltic Sea area, and consequently add to further **development of the economy in the region**.
The activities include:

- certified summer schools
- professional training courses
- visits in farms & facilities
- jobs & farms/companies' presentations
- success stories promotion
- students' career panels
- business consulting
- career portals
- e-tools for lifelong learning and cooperation

In the experimental work, educational activities, outreach, business support, networking and capacity building activity we are especially committed to support SDG 12: **Responsible Consumption and Production**, SDG 4: **Quality Education** and SDG 17: **Partnerships for the Goals**. Still, together with the main three sustainable development goals we support many others: Establish Good Health and Well-Being, Increase Industry, Innovation &Infrastructure, Mobilize Sustainable Cities & Communities, Influence & Develop Life Below Water, and Advance Life On Land.



Main cooperation partners of Univerisity of Gdańsk
in AquaVIP, AquaLoop, BluePlatform, InnoAquaTech, BlueBioTech projects,
and SUBMARINER Network for Blue Growth EEIG:

…TO BOOST BLUE BIOECONOMY WITHIN THE BALTIC SEA BY FOSTERING SUSTAINABLE SCIENCE & EDUCATION BASED ON PILOT EXPERIMENTS & STAKEHOLDERS' ENGAGEMENT.

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