

Blue Platform Workshop  
'Innovative technologies in Aquaculture'  
17 November 2020

Workshop Report

The aim of the [Blue Platform](#) project is to increase the innovation potential of the economy based on the use of Blue Bioeconomy projects outcomes through knowledge, know-how and technology transfer, as well as to provide SMEs in the region with access to competences in this field. To this end, the University of Gdansk together with the SUBMARINER Network organised a workshop on the topic of *Innovative technologies in Aquaculture* on the 17<sup>th</sup> of November 2020. **The aim of the workshop was** to showcase new trends in innovative aquaculture, with the focus on Recirculating Aquaculture Systems, algae and aquaponics, and to support the development of more innovative technologies across the Baltic Sea Region.

The event was directed to entrepreneurs, students, local authorities, researchers and specialists interested in innovative technologies in aquaculture, the state-of-play in the Baltic Sea region and global trends, as well as highlighting local opportunities and common challenges. Over twenty speakers and more than seventy participants took part in the event, including SMEs working in aquaculture, consulting and R&D stakeholders, representatives of Baltic aquaculture authorities, university and research institute representatives, as well as aquaculture students.

After a welcome from the event host: Hanna Łądkowska from the University of Gdańsk, Poland, and a brief introduction by Angela Schultz-Zehden and Lisa Simone de Grunt from the SUBMARINER Network for Blue Growth, a series of presentations and panel discussions followed. **The programme was divided into thematic sessions starting with a session on the State of Play: innovative technologies in aquaculture in different Baltic Sea Region countries.** The session started with a presentation on global trends in aquaculture by Konrad Ocalewicz, University of Gdańsk, Poland, which gave good ground for an end-of-session discussion in respect to facts, trends and policy developments, presented by experts from across the Baltic Sea region. The presentations showed that in fact innovative technologies are already available in the Baltic Sea Region – to varying extents. Following the presentations, Angela Schultz-Zehden facilitated a discussion which focused on present problems in respect to recirculating aquaculture systems which seem to be a predominant solution in the Baltic region (in comparison to aquaponics and algae cultivation), and still most favourable for the region's conditions. The focus of the discussion was put on cost-effectiveness, market related issues, and further improvements necessary to boost the potential of RAS systems.

**The second session was dedicated to InnoAquaTech project products, and the possibilities of development of RAS and aquaponics in Baltic Sea Region.** During this session participants were familiarized with the InnoAquaTech project (*Cross-border development and transfer of innovative and sustainable aquaculture technologies in the South Baltic area* – Interreg South Baltic 2016-2019), which focused on the cross-border development and transfer of innovative and sustainable aquaculture technologies across the South Baltic area and providing SMEs access to state-of-the-art technology, know-how, expertise and financing models. The InnoAquaTech project implemented four aquaculture pilots located in Germany, Denmark, Poland and Lithuania. Experience in implementing pilot studies in very innovative solutions in the field of aquaponics in Germany, fish and microalgae production in Denmark, small –scale shrimp RAS application and the use of geothermal energy in aquaculture of white shrimp in Lithuania presented by InnoAquaTech gave the opportunity to the participants to discuss new ideas in their business development. In the after-session discussion facilitated by Hilary Karlson, panelists expressed their interest and introduced after InnoAquaTech projects actions related to further development of the demonstration sites established during the project (RAS facilities in

### Blue Platform

Poland and Lithuania), as well as the potential of geothermal sources applied in Klaipeda, and the potential of the developed decision support tool for investors interested in aquaculture. The follow-up of the InnoAquaTech demonstration activities under the ongoing **AquaVIP - Aquaculture Virtual career development Platform for the South Baltic region** project were also discussed.

**The last session of the workshop was facilitated by Konrad Ocalewicz from the University of Gdansk and included good practices in various fields of aquaculture: algae, RAS fish, and mussels cultivation, as well as education, communication and cooperation initiatives.** A very promising potential of algae cultivation in the Baltic Sea region was presented from three different perspectives. Following the presentations, participants were introduced to the concept of RAS systems, their applications, as well as the advantages of RAS aquaculture for farmers (stability of conditions), customers (biosecurity) and the animals themselves (welfare and environmental impact), as well as examples of good practices from Poland. The session also included a presentation on mussels cultivation and its application in combating eutrophication. Since technology application and cultivation of aquaculture organisms using innovative technology needs to be transferred to consumers, further presentations focused on issues related to education, communication and marketing, as well as cooperation necessary for the success of innovative technology application in aquaculture. As shown in the presentations and highlighted during the after-session discussions, there is a high potential to cultivate algae, fish and mussels in different locations of the Baltic Sea region, and there are already good examples of prospering investments, especially with regard to RAS systems. However, there are still challenges to be addressed, not only regarding technology in aquaculture, but also with regard to education, communication and marketing, which are necessary for the technology to be successfully applied. Market conditions for future domestic production seem to be promising according to the discussions, but public awareness is still poor, therefore more educational campaigns are needed.

The workshop was met with great interest and we hope that the knowledge and competences gained through the event will be used in practice and result in new activities aimed at increasing the innovative potential of the Blue Bioeconomy, including new investments in aquaculture technologies. We would like to thank all the speakers and participants for their commitment, fruitful discussions and great atmosphere during the event. As concluded by Angela Schultz-Zehden, Managing Director of the SUBMARINER Network, during the wrap-up session, speakers drew an impressive picture of viable possibilities and showed the huge potential for sustainable innovative aquaculture in the Baltic. **The organisers will prepare an update of the draft Position Paper, which will be used to further promote the advancement of sustainable and innovative aquaculture across the Baltic Sea Region.** For questions or comments regarding the workshop or the Position Paper, please contact Basia Dmochowska: [b.dmochowska@ug.edu.pl](mailto:b.dmochowska@ug.edu.pl)

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## Speakers

Adam	Sokołowski	University of Gdańsk
Adrian	Bischoff-Lang	Rostock University
Aleksandra	Zgrundo	University of Gdańsk
Angela	Schultz – Zehden	SUBMARINER Network for Blue Growth EEIG
Anete	Niemi	Institute for Food Safety, Animal Health & Environment
Bartosz	Blum	Aqua Medic Poland
Efthalia	Arvaniti	SUBMARINER Network for Blue Growth EEIG
Hanna	Łądkowska	University of Gdańsk
Halina	Kendzierska	University of Gdańsk
Hilary	Karlson	Bioeconomy Hotspot Guldborgsund Municipality
Izabela	Alias	Swedish Board of Agriculture
Konrad	Ocalewicz	University of Gdańsk
Liisi	Lees	Estonian Marine Institute, University of Tartu
Marcin	Juchniewicz	K1 fish farm
Mirosław	Pólgęsek	AQUAconsult, West Pomeranian University of Technology
Nerijus	Nika	Klaipeda University
Radosław	Kowalski	Institute of Animal Reproduction and Food Research of Polish Academy of Sciences in Olsztyn
Sergey	Shibaev	Kaliningrad State Technical University
Stefan	Meyer	Stefan Meyer, Kiel University
Tomasz	Kulikowski	National Marine Fisheries Research Institute, Fish Industry Magazine
Valmar	Kasuk	Vetik Company

## Participants

First name	Last name	Institution
Adam	Lejk	National Marine Fisheries Research Institute
Adam	Michalewicz	
Adam	Mroczka	
Agnieszka	Pakuła	Agencja Restrukturyzacji i Modernizacji Rolnictwa
Aldona	Dobrzycka-Kraheil	Institute of Oceanography University of Gdansk Poland
Alessandro	Gibertini	Università degli Studi di Milano-Bicocca
Alexia	Semeraro	ILVO
Andrzej	Stolarski	ARiMR
Anna	Stępniewska	ARiMR
Anna	Swacha - Polańska	Polish Trout Breeders Association
Annette Rye	Larsen	Dansk Videnscenter for Tang - Danish Seaweed Science Center
Arturs	Skute	Daugavpils University
Aurelie	Thomas	Bioceanor
Bartłomiej	Kandziak	Agencja Restrukturyzacji i Modernizacji Rolnictwa (ARiMR)
Basia	Dmochowska	University of Gdańsk
Chalghaf	Mohamed	Technical center for Aquaculture
Claus	Falconi	Falconi Mare ApS
Dagmara	Wójcik-Fudalewska	Institute of Oceanography, University of Gdansk
Daria	Zygmunt	Uniwersytet Gdanski

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Gintautas	Narvilas	KU, MRI
Guoda	Bružaitė	
Ida	Speyer	Ocean Greens
Ivana	Lukic	s.Pro sustainable projects / SUBMARINER Network
Jan	Kołodziejski	Agency for Restructuring and Modernisation of Agriculture
Janusz	Rasieński	University of Gdansk
Joanna	Szulc	
Jouni	Vielma	
Jura	R.	
Justyna	Radzewicz	Ministerstwo Rolnictwa i Rozwoju Wsi
Kaja	Czajkowska	Uniwersytet Gdański
Karolina	Naumowicz	University of Warmia and Mazury in Olsztyn
Katarzyna	Nadolna - Ałtyn	Morski Instytut Rybacki – PIB / National Marine Fisheries Research Institute
Katarzyna	Stepanowska	West Pomeranian University of Technology, Szczecin, Poland
Krzysztof	Pawlikowski	Morski Instytut Rybacki
Lapo	Nannucci	
Lisa Simone	de Grunt	SUBMARINER Network for Blue Growth
Lisbeth	Plesner	Dansk Akvakultur
Magdalena	Jakubowska	Morski Instytut Rybacki – Państwowy Instytut Badawczy
Magdalena	Stachnik	National Veterinary Research Institute
Magdalena	Marchewa	MWB UG i GUMed
Majdi	EL MANOUCHI	GIIP
Malgorzata	Kieliszewska	Ministry of Agriculture and Rural Development
Marcin	Kuciński	University of Gdańsk
Marcis	Zingis	Institute of Food safety, Animal Health and Environment "BIOR"
Marius	Diadyk	
Marlena	Rutkowska	University of Gdansk
Marta	Pinto	Sorgal, Sociedade de Óleos e Rações, SA
Marta	Zontek	ARiMR
Mette	Jørgensen	Bioeconomy Hotspot - Guldborgsund municipality
Michał	Kamiński	
Michał	Owczarek	Black Sheep Investments
Mihails	Pupins	Daugavpils University
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Monika	Normant-Saremba	University of Gdańsk
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Przemysław	Kopania	Uniwersytet Gdański
Rafal	Lasota	University of Gdansk, Institute of Oceanography
Robert	Aps	University of Tartu, Estonian Marine Institute
Ruta	Ceplinskiene	UAB Metal Production
Samir	BACHOUCHE	CNRDPA
Sujit	Das	INFOFISH
Sylwester	Pudlak	
Telmo	Fernandes	Soja de Portugal
Tiago	Aires	Sorgal, Sociedade de Óleos e Rações, SA
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Tomasz	Kuczyński	Gdynia Maritime University, Maritime Institute
Urszula	Janas	University of Gdańsk
Wika	Szumigalska	Uniwersytet Gdański
Wojciech	Andrzejewski	Poznań University of Life Sciences
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Wojciech	Siwanowicz	
Žanna	Gribanova	Aquaculture research and education centre