BIORAS_SHRIMP

Improvement and innovation of a BIO-secure Recirculating Aquaculture System for SHRIMP and additional biomass circular production

About the Project

The development of sustainable, productive, climate-neutral and resilient farming systems is, nowadays, an obliged way to provide consumers with affordable, safe, traceable, healthy and sustainable food, while minimizing pressure on ecosystems. The improvement and innovation of land-based integrated multi-trophic aquaculture systems, perfectly goes in this direction since it allows to produce high quality seafood and valuable environmental services. The high demand of shrimp for human consumption has led to rapid expansion of production all over the world. During the last decade, an increasing interest to shrimp culture has arisen also in Europe, due to the increasing demand for freshly harvested, sustainably produced shrimps and to the application of highly intensive closed recirculating aquaculture (RAS} and biofloc (BFT} systems. This project aims to develop and test an innovative bio-secure, land based sustainable shrimp culture model to minimise waste, enhance productivity and recover energy and nutrient for additional biomass production, in view of a circular economy process. The application of the bio-system principles (food first, sustainable yields, cascading approach, circularity and diversity} is at the backbone of the research approach and methodology proposed. The expected results are: Set-up of a clear water RAS for shrimp culture with improved technology and husbandry efficiency; Development and test of a hybrid RAS-BFT farming system; Installation and validation of an innovative RAS effluent treatment system; test and validation of an Artificial Intelligence based water quality monitoring system; Development and test of innovative protocols for effluent solid waste and residual water reuse and valorisation; Exploration of new bio-resources deriving from the additional biomass produced. All outcomes have high industrial and commercial impact on several economic sectors while addressing global challenges, making the EU more sustainable and competitive.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 817992.

Blue BIO COFUND

Project Overview

2. Additional Call | 2022

Project Partners:

- **Dr Vincenzo Zonno** Universita del Salento
- **Dr Bente Foereid** NIBIO
- **Mr Tamas Bardócz** AquaBioTech Group
- **Prof Paola Nieri** University of Pisa
- **Mr Giacomo Maniscalco** Biotecna s.r.l.
- **Mrs Maria Dolores A. Gambin** The Department of Fisheries and Aquaculture (DFA) Aquaculture Directorate
- **Dr Niccoló Bassi** Biosyntex s.r.l
- **Dr Dinesh Kaippilly** Kerala University of Fisheries and Ocean Studies Aquaculture
- **Dr Gabriele Omini** Omini Pharma srl amministrative
- **Prof Albert K.D. Imsland** Akvaplan-niva AS Aquaculture

Keywords:

Recirculating aquaculture, waste valorization, bio-products

Priority Area:

Sustainable and resilient biomass production and processing.