Industrial innovation for shrimp culture

The outcomes of the project have a high potential industrial and commercial impact. The technology developed is immediately applicable to support a sustainable ecological and digital transition in aquaculture.

Stakeholders' engagement

The goal of BIORAS SHRIMP is to facilitate growth and development of the aquaculture sector in participating countries. Knowledge and innovative technologies will be shared with a wide range of stakeholders, including farmers, researchers, policymakers, associations of consumers, and other end-users.

Capacity building opportunities

A specific work package of the project is dedicated to the organization of a training course based on the results achieved during the project lifetime. The course will describe the general management of the shrimp RAS, including the system for the effluent treatment, and the production of byproducts and co-products. The potential utilisation and valorisation will be also included in the program.

The course will be open for attendance by farmers, technicians, students, representatives of aquaculture producers and NGOs.





Project Partners







BIOTECNA srl Sustainable Aquafarming





UNIVERSITÀ **SALENTO**

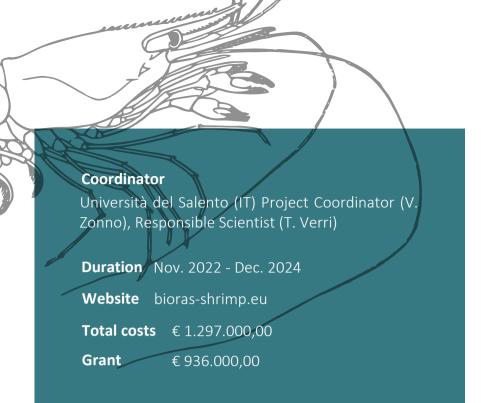


BIORAS SHRIMP

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

This project is co-funded by the European Union's Horizon 2020 research and innovation programme under the ERA-Net Cofund project BlueBio (grant agreement No 817992). The funding agencies for the BIORAS SHRIMP project are Malta Council for Science and Technology (MCST) Malta, Ministry of Universities and Research (MUR) Italy and Norges forskningsråd (RCN) Norway.







Innovation

BIORAS SHRIMP project aims to develop, improve and innovate a bio-secure land-based, sustainable RAS for the intensive culture of shrimp. The model will minimise waste, enhance productivity, and recover energy and nutrients by applying integrated biosystems principles, in the view of a circular economy process.

Objectives of BIORAS_SHRIMP

- To design an innovative, AI-based Recirculating Aquaculture System with improved technology and husbandry efficiency, for the intensive culture of shrimp
- To develop systems for the recovery of sludge and nutrients in the effluent in order to generate valuable co-products and side-products
- To implement and test the systems in Malta, Norway and Italy

Sustainability

The development of sustainable, productive and resilient farming systems is an obliged way to provide consumers with affordable, safe, traceable and healthy food, while minimizing pressure on ecosystems.

The valorisation of underutilized resources (as the solid waste or the nutrient enriched effluent water) could provide additional by-products ensuring sustainability and circularity.

The improvement and innovation of land-based integrated multi-trophic aquaculture systems perfectly goes in this direction as it allows the production of high-quality seafood and by products and the reduction of waste and pollution.



















Technology





Recirculating Aquaculture Systems (RAS-In)

Increased shrimp density in safe and controlled environment with the ability to collect and treat the effluent

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Artificial Intelligence, real time sensors and **Internet of Things**

Optimization of the system design and facilitation of daily operations and data collection.

Effluent treatment

Reduction of load of nutrients discharged

Biofloc Production of a protein-rich live feed

Algae culture and Aquaponics Integration of vegetal biomass in the production