CATÓLICA
FACULTY OF BIOTECHNOLOGY
PORTO

PROJECT R&D+I

TITLE

AQUAVAL - VALORISATION OF WATER USE IN AQUACULTURE USING MULTITROPHIC SYSTEMS

HIGHLIGHTS

Biotechnological solutions for the treatment of water in freshwater aquaculture facilities

ABSTRACT

AQUAVAL aims to develop technological solutions for the treatment of water used in freshwater aquaculture facilities.

The system will use organisms from different trophic levels: bacteria, microalgae and bivalves. The technological solutions will be combined to comprise a full treatment system, to remove pollutants and to valorize effluents following the t circular economy precepts.

The water resulting from the treatment system must be of sufficient quality to be recycled / reused in the producing facilities or to be discharged into the natural water sources. The treatment system will include the application of aerobic granule technology combined with other processes, such as anammox or microalgae. The output treated water will be sent to a bivalve filtration unit, taking advantage of their filtration ability to improve the efficiency of the system and further valorizing their biomass for different applications. This water depuration step will be accomplished using adult bivalves from the wild, but eventually could also be used to rear endangered species of freshwater mussels, promoting biodiversity protection and endangered species conservation.

Pilot-scale validation will assess the economic, environmental and production performance of the proposed system. In addition to the economic benefits, a reduction of the environmental impact is expected, which will promote the social perception of aquaculture companies.

KEYWORDS

Wastewater Treatment, Biotechnology, Aquaculture, Freshwater, Circular Economy

PROMOTERS / PARTNERS

Escola Superior de Biotecnologia – Universidade Católica Portuguesa (Coordenador); Grupo Três Mares; Universidade de Santiago de Compostela-USC; Universidade de Torino-DVS.

FINANCING PROGRAM	EXECUTION DATE	GLOBAL BUDGET
WATER JPI; FCT	2017-2020	€ 187 225,03

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