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Specialization Area: Aquaculture  
Research Area: 2.8 Marine ecology and cultures

**PhD project: Integration of halophytes production to promote coastal aquaculture eco-intensification**

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**Summary:** The purpose of this thesis is to build-up science-based knowledge to promote the eco-intensification of coastal aquaculture, based on the concepts of nature-based solutions and smart valorization of marine endogenous resources – in this case, fish and halophytes from Ria de Aveiro lagoon, Portugal. The halophyte *Halimione portulacoides*, also known as sea purslane, is the subject of this research and was chosen based on its wide distribution in coastal ecosystems at temperate latitudes in Europe, its abundance in the Aveiro region, its notable biological and ecological traits and edibility. *H. portulacoides* will be investigated as a potential phytoremediator and valuable co-product for marine integrated multi-trophic aquaculture (IMTA) through lab-scale trials (hydroponics and aquaponics systems) to determine growth performance, nutrient removal efficiency and nutritional profile under different environmental conditions (e.g. dissolved inorganic/organic nutrients concentrations). An economic assessment will determine the economic potential of its integration in fish-farms, using bioeconomic modelling and the Ecosystem Services framework. The results will be of interest to the scientific community interested in the biology and culture of halophytes and in the ecosystem services approach to aquaculture, as well as to aquaculturists interested in diversifying their operations and adopting environmentally sustainable methodologies.

