

# ENHANCE MICROALGAE PROJECT

## STIMULATING MICROALGAE RESEARCH, INDUSTRIAL DEVELOPMENT AND TRANSNATIONAL COOPERATION IN EUROPE



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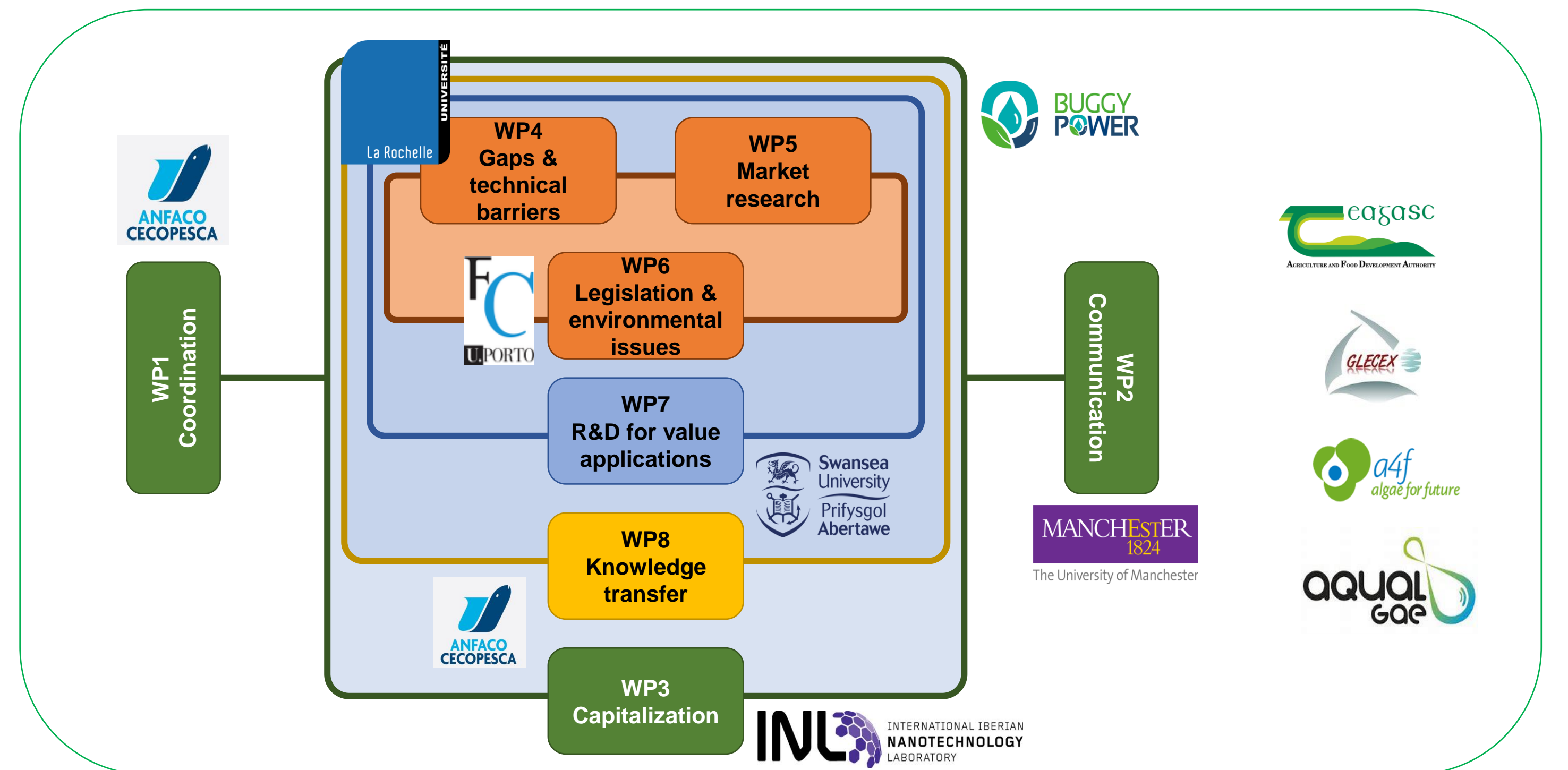
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**INTRODUCTION:** European Atlantic Area has a long tradition in the exploitation of marine resources for different food and feed applications. EnhanceMicroAlgae project helps to secure a continuation of that tradition with high value-added products and long-term sustainable growth through exploiting of microalgae. Microalgae revolutionize the food and feed ingredient industry because of their productivity and possibilities, but also the biotechnology industry with the production of phytochemical to be used for cosmetic and pharmaceutical purposes. EnhanceMicroAlgae project was launched on the 1st of November 2017 and run until the end of October 2021 and now has gained an extension until June 2023.



EnhanceMicroAlgae partnership including full and associated partners



EnhanceMicroAlgae workplan

**OBJECTIVE:** EnhanceMicroAlgae main objective is contribute to increase the competitiveness of microalgae-based industry in the Atlantic Area through the transfer of technological and economic expertise to the business sector, facilitating production of large biomass volumes and optimizing production processes.

**METHODS:** EnhanceMicroAlgae work program has included an in-depth review of the existing Atlantic Area microalgae sector including strengths and weaknesses, level of expertise, industrial development opportunities, and regulatory and legal frameworks. Also, innovative research activities and innovation transfer from laboratories and research platforms to the industrial sector has been carried out promoting the launch of new products, services and processes encouraging the creation of spin-offs and the development of case studies supported by Decision Support Tools (DST).

**MAIN RESULTS:**

**Stakeholders database**

Online database of stakeholders

**Enhancing Microalgal Production**  
Constructing Decision Support Tools Using System Dynamics Modelling

Kevin J Flynn

Provide a simulator to explore & optimise production options

A decision support tool to help SMEs decide on culture system

Training sessions & Workshops

Neptune Seminar Series

EnhanceMicroAlgae Webinar July 16th 2020

Microalgae information dissemination through comics and illustration

MICROALGAE THE HIDDEN WORLD

Incorporate nanotechnology/new technologies to microalgae sector

Spirulina layers

3D models and layer-by-layer printed doughs

Biomass production for modelling and harvesting for bioactivity assays

Culturing → Harvesting (membrane filtration vs. centrifugation) → Spray drying

Assessment of harvesting methodologies

- Cell integrity
- Efficiency
- Time and energy consumption

Assessment of culturing parameters

- Light
- CO2 supply
- Nutrient status
- Biomass productivity and composition

A virtual marketplace as a platform for services and interests exchanging

ENHANCEMICROALGAE

OFFERS

DEMANDS

More than 20 scientific publications including innovative research results within the project. Find more in <https://www.enhancemicroalgae.eu/publications/>

**marine drugs**

A Bibliometric Analysis of Microalgae Research in the World, Europe, and the European Atlantic Area

Judith Rumin<sup>1</sup>, Elodie Nicolau<sup>5</sup>, Raimundo Gonçalves de Oliveira Junior<sup>1</sup>, Claudio Fuentes-Grünevald<sup>1</sup>, Kevin J. Flynn<sup>2</sup> and Laurent Picot<sup>1,\*</sup>

**Journal of Marine Science and Engineering**

The Nagoya Protocol and Its Implications on the EU Atlantic Area Countries

Joana Martins<sup>1,2</sup>, Diogo Cruz<sup>1,2</sup> and Vitor Vasconcelos<sup>1,2,\*</sup>

**Improving Microalgae Research and Marketing in the European Atlantic Area: Analysis of Major Gaps and Barriers Limiting Sector Development**

by Judith Rumin<sup>1</sup>, Raimundo Gonçalves de Oliveira Junior<sup>1</sup>, Jean-Baptiste Bérard<sup>2</sup> and Laurent Picot<sup>1,2</sup>

**Carotenoids from *Rhodomonas salina* Induce Apoptosis and Sensitize A2058 Melanoma Cells to Chemotherapy**

Raimundo Gonçalves de Oliveira-Junior, Elodie Nicolau, Antoine Bonnet, Grégoire Prunier, Laureen Beaugeard, Nicolas Joquet, Valérie Thiéry & Laurent Picot

**WHAT'S NEXT?**

EnhanceMicroAlgae extension will comprise new activities focus on pilot demonstrations, dissemination and clustering activities focused on the microalgae business sector.



Workshop on the 20th October 2022 in La Rochelle, France.

Latest developments in microalgae science, start-up creation, industrialization and experience sharing to overcome gaps and barriers to innovation and markets

More information and updates at

[www.enhancemicroalgae.eu](http://www.enhancemicroalgae.eu)



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