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PROJECT SPEC SHEET (EN)

INICIO – SET UP OF RESEARCH INFRASTRUCTURE FOR CLOSED CIRCLES OF WATER, NUTRIENTS AND ENERGY IN THE PORTUGUESE AGRICULTURE

Project n°: 072685

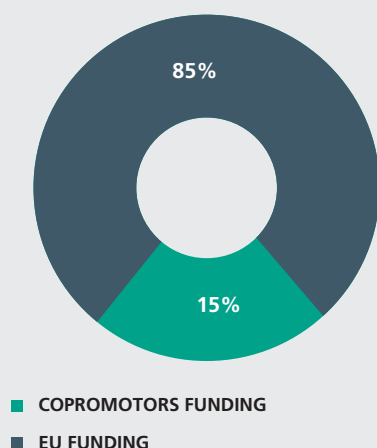
Supported by: Support System for Scientific and Technological Research (SAICT). Projects for Research Infrastructures inserted in the National Roadmap of Research Infrastructures of Strategic Interest.

Beneficiary entity: Associação Fraunhofer Portugal Research

Total eligible cost: 2.588.235,29€

EU Funding: 2.200.000,00€ (ERDF)

National/regional funding: N/A



Project's overview

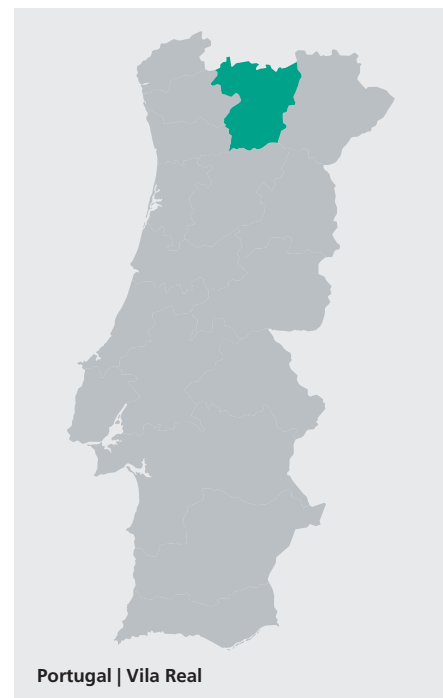
In all parts of the world, agriculture is facing severe challenges due to the effects of climate change, a growing population and digital transformation. New high-tech approaches are required to efficiently address e.g. the security of supply in terms of quantity and quality of food, the sustainability and environmental compatibility of farming, and the competitiveness of European farmers. Water availability plays a pivotal role in this context, which is closely connected to wastewater treatment and water recycling in all parts of society.

The project INICIO will permit the implementation and operationalization of the Fraunhofer Center for Smart Agriculture and Water Management (FhP-AWAM) that tackles these issues. The new center will focus on the development and application of new process technologies in connection with comprehensive data analysis and modelling, to close regional loops of nutrients, water and energy.

In the first phase of the project the IT and

laboratory equipment, encompassing demonstrators of world-leading technologies will be specified, purchased, and installed to facilitate R&D work, which are the prerequisites for:

- Nationally and internationally recognized





- research and development activities
- Fast technology adaption and transfer to industry;
 - Attracting excellently educated and motivated personnel;
 - Ensuring attractivity of hands-on experience in university education.

The installation of the technology demonstrators represents the starting point of the respective capability demonstration experiments which will be pursued in the second phase of the project and will allow achieving the following operational objectives:

- Obtaining initial scientific results

with the newly established research infrastructure;

- Demonstrating the center's functionalities and capabilities;
- Promoting visibility of FhP-AWAM's technologies at national and international levels;
- Learning about in-depth needs and demands of users, extending the network of FhP-AWAM and thereby pursue follow-up projects.

The FhP-AWAM team will actively address relevant players (predominantly in Portuguese agriculture and wastewater management, but also on a European level)

to promote the pursued technologies, learn about necessary adaptations, and to offer test measurements/treatments for test samples provided by these entities. This will be a first basis of cooperation with network partners.

Photos, videos and other dissemination materials



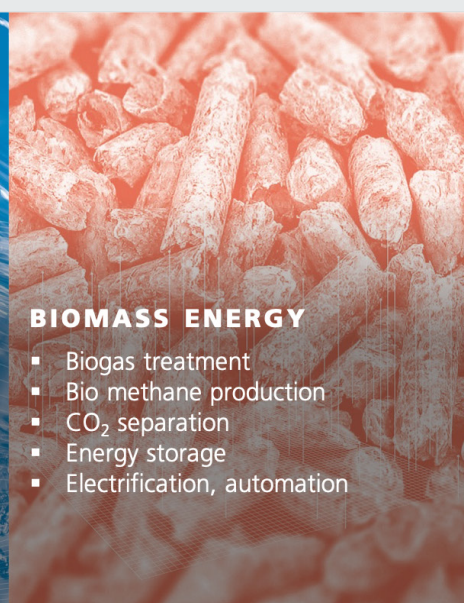
SUSTAINABLE CROP PRODUCTION

- Transportable and storable fertilizers
- High quality products with defined properties
- Agriculturally usable irrigation and fertirrigation



WATER TREATMENT

- Inorganic membranes
- Electrochemical treatment methods
- Efficient advanced oxidation processes
- Process-integrated water quality monitoring



BIOMASS ENERGY

- Biogas treatment
- Bio methane production
- CO₂ separation
- Energy storage
- Electrification, automation