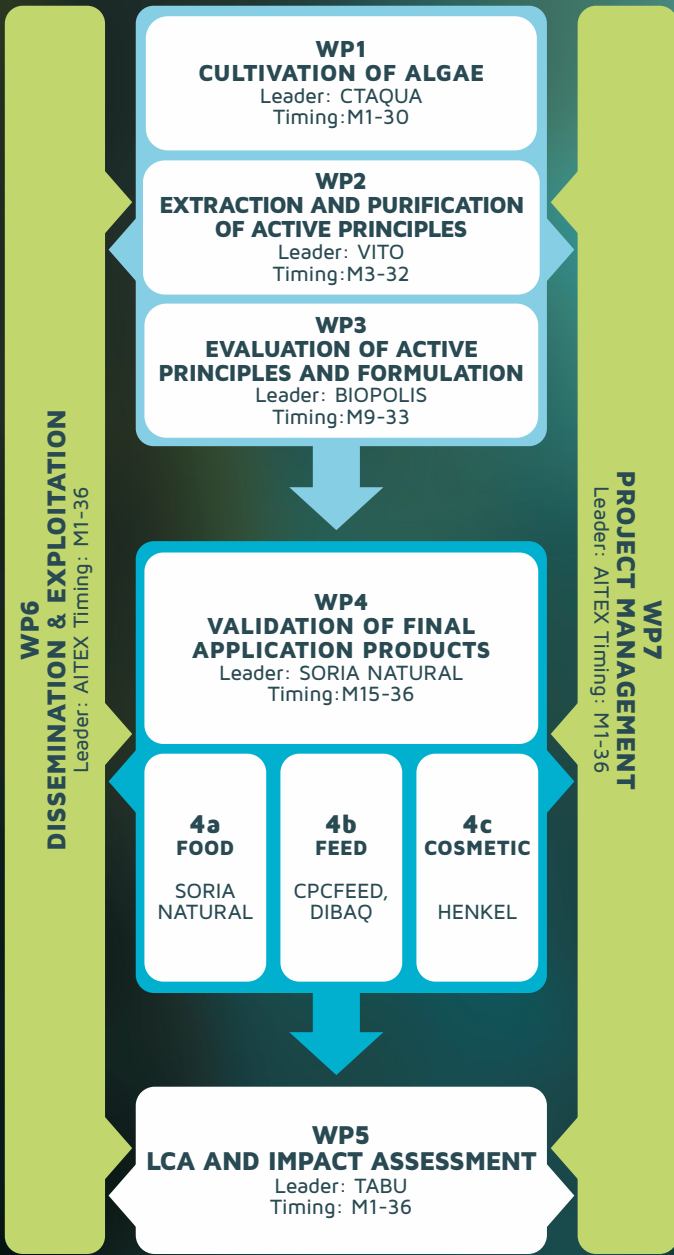


flow chart



partners

COORDINATOR

AITEX

Textile Research Institute



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textile research institute

PARTNERS

CNTA

Centro Nacional de Tecnología y Seguridad Alimentaria - *Spain*

CTAQUA

Fundación Centro Tecnológico Acuicultura de Andalucía - *Spain*

VITO

Vlaamse Instelling voor Technologisch Onderzoek n.v. - *Belgium*

TABU

Tabu Cozumleri Danismanlik Limited Sirketi - *Turkey*

IGV GmbH

IGV Institut für Getreideverarbeitung GMBH - *Germany*

BIOPOLIS

Biopolis SL - *Spain*

VLCI

Van Loon Chemical Innovations BV - *Netherlands*

FEYECON

Feyecon Development & Implementation BV - *Netherlands*

CPCFEED

Complementos de Piensos Compuestos S.A. - *Spain*

DIBAQ

Dibaq Diproteg S.A. - *Spain*

SORIA

Soria Natural S.A. - *Spain*

HENKEL

Henkel KGaA - *Germany*

www.biosea-project.eu



biosea

Innovative cost-effective technology for maximizing aquatic biomass-based molecules for food, feed and cosmetic applications

The H2020 BIOSEA project (under BBI-JTI-2016 call) has a 36 months duration and is coordinated by AITEX in collaboration with 12 more entities from 5 different countries.



Bio-based Industries Consortium



"This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No. 745622"

needs

EU society needs new sustainable biobased feedstock in order to meet the growing population needs and to reduce the dependence on fossil fuels.

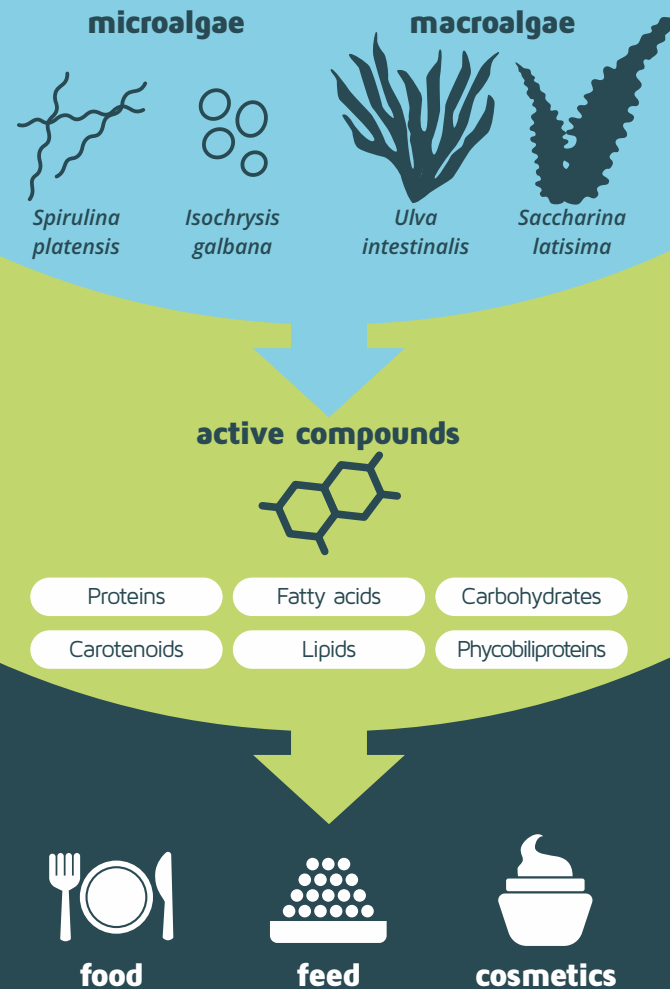
The high dependency on resources from third countries, and the impacts of global climate change in addition to the limitation of agricultural current practices, it is of main importance to take a decision on land use for food, feed, chemicals and energy. The increasing competition for land and its limitations, are deriving to consider new resource alternatives, as the potential of the aquatic environment, as algae, that can be a competitive substitutive for the production of active compounds for food, feed, and other industrial applications, as cosmetic, pharma or biofuels.

Aquatic feedstock can be a solution to these necessities, however, European algae feedstock market is still facing immature production technologies, and which are not specifically designed for algae biorefinery.



objective

The overall objective of **BIOSEA project** is the development and validation of innovative, competitive and cost-effective upstream and downstream processes for the **cultivation of 2 microalgae** (*Spirulina platensis* and *Isochrysis galbana*), and **2 macroalgae** (*Ulva intestinalis* and *Saccharina latissima*) to produce and extract at least **6 high value active principles at low cost** (up to 55% less than with current processes) to be used in **food, feed and cosmetic/personal care** as high-added value products.



expected results

- Selection of **specific aquatic biomass** suitable for application in food, feed and personal care markets, using both micro and macroalgae from aquatic environment.
- Definition of **new growing conditions** of micro- and macroalgae for substantially increased yields.
- Isolation of:
 - **proteic fraction** with added value due to its rheological, nutritional, functional properties in food industry and in feed industry
 - **antioxidants fraction** with added value for its natural source in feed and cosmetic industry.
- Definition of **new eco-efficient/eco-sustainable** separation, purification and extraction **methodologies** for obtaining the maximum yields of the proteic (upt to 39.3%) and functional antioxidative fractions (carotenoids) (up to 34.43%) minimizing the use of organic solvents up to 55%.
- **Optimised cascading conversion** including all required steps (cultivation, drying, cell disruption, extraction, purification, drying) of the aquatic biomass and desired compounds achieving a reduction of the process cost up to 55%.
- **Obtention of at least 6 compounds** with specific properties for the different final applications, which can represent raw materials for further formulations for the 3 involved industries.
- **Functional evaluation of the compounds** extracted from aquatic biomass.
- **Validation of final products** developed for **final applications in food, feed and cosmetic sectors**, with improved properties and high added value, reflected in cost-efficiency, improved sensory characteristics and techno-functional properties, which will be measured and ranked.