

# Extraction and characterization of BIOactives and CARBohydrates from seaweeds and seagrasses FOR FOOD-related applications



## SUMMARY

- In the BIOCARB-4-food project, we are exploring, environmentally friendly and efficient extraction techniques (US, Mw, enzymes and their combinations), combined with the exploitation of the remaining biomass, rich in bioactive compounds, to sequentially obtain novel carbohydrate-based extracts and fibers (nanocellulose) from seaweeds and seagrasses. The extracts are characterized and a life cycle assessment (LCA) will also be conducted for proving the sustainability of the procedures.

## OBJECTIVES

- The project is expected to contribute to improved process efficiency and development of high added value ingredients from seaweeds and seagrasses which can positively impact in the competitiveness of companies at EU scale by a better valorization of raw materials.

## PRELIMINARY RESULTS

- Improved yields and interesting functional properties of seaweed and seagrass extracts are being obtained. Biodegradable packaging structures are also being developed from the residuals left, thus encouraging further research in this topic.

## PRELIMINARY CONCLUSIONS

- Novel extraction techniques and simplified extraction procedures can be used for obtaining phycocolloid extracts useful for food applications.
- The seaweed residuals left after phycocolloid extraction can be valorized for developing packaging structures and additives
- The residuals of the seagrass *Posidonia oceanica* have demonstrated to be an excellent biomass source for obtaining lignocellulosic fractions of interest in the development of biodegradable food packages.

