Extraction and characterization of BIOactives and CARBohydrates from seaweeds and seagrasses FOR FOOD-related applications
BIOCARB-4-FOOD

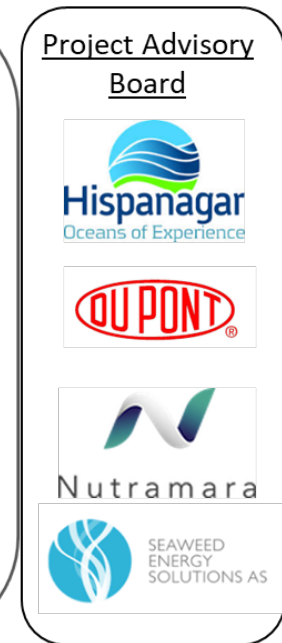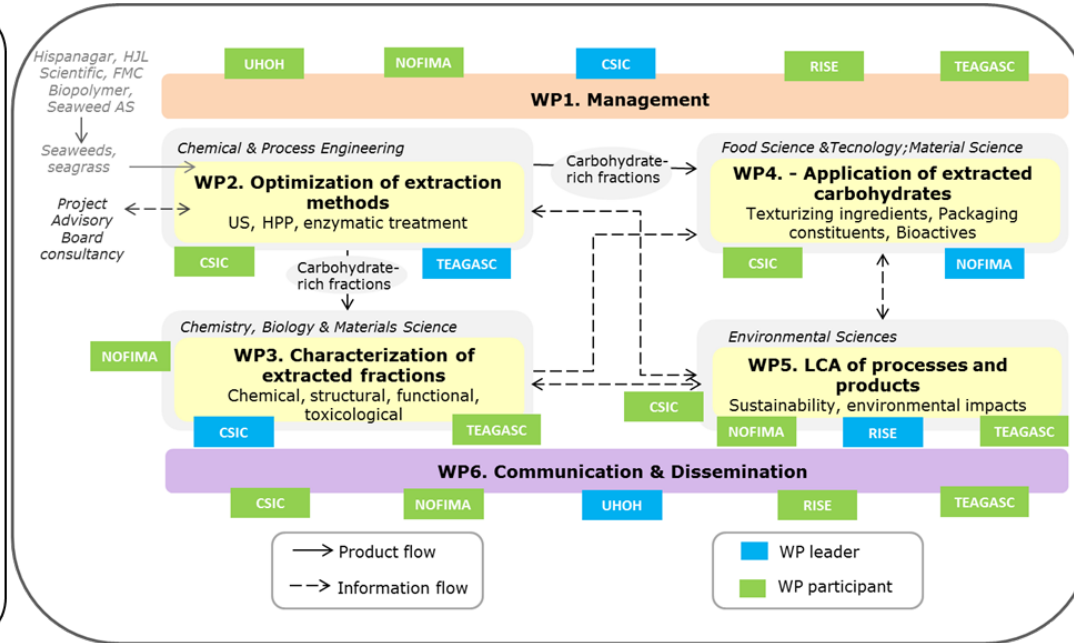Amparo López Rubio

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- Evaluate novel extraction procedures (US, Mw, enzymes) for obtaining phycocolloids
- Valorise the insoluble residue of seaweed and seagrass species
- Fully characterize the extracted products using advanced analytical tools
- Evaluate their potential use in food-related applications
- Assess the environmental sustainability from a life-cycle perspective
- Communicate with the priority stakeholders

Overview of seaweeds and seagrass used in the project

Gelidium sesquipedale

- Agar-rich extracts
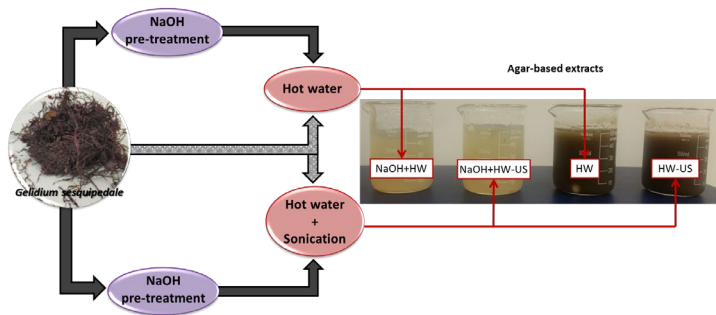- Lignocellulosic fractions from the residue

Posidonia oceanica

- Lignocellulosic fractions
- Bioactive extracts

Alaria esculenta, Laminaria saccharina, Ascophyllum nodosum

- Alginate-rich extracts
- Lignocellulosic fractions from the residue

Strategies:
- Novel processing techniques
- Simplified processes
- Residual valorisation

NOVEL PROCESSING TECHNIQUES

- US: increased yields, better LCA

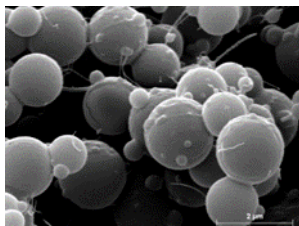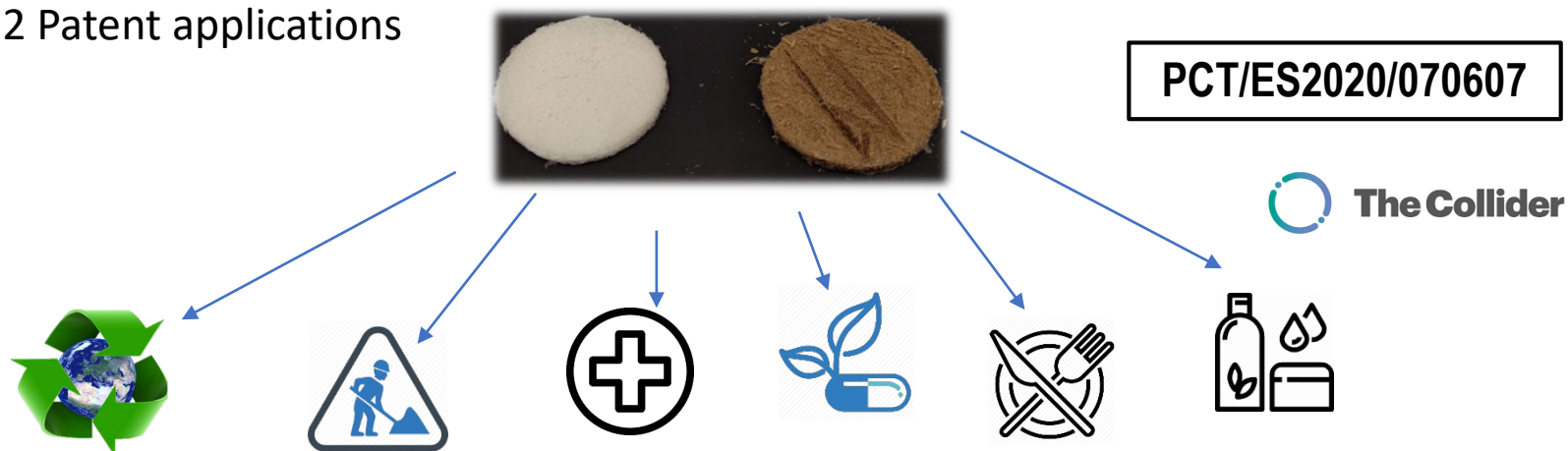- Work needed for the scaling up of technologies
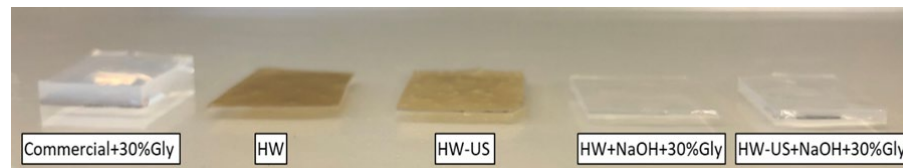

- Cost evaluation of the new processes

SIMPLIFIED PROCESSES:

POTENTIAL OF LESS-PURIFIED CARBOHYDRATE EXTRACTS

- Not for the same applications (look for new potential markets)

- 2 Patent applications

PCT/ES2020/070607

Alehosseini et al., LWT-Food Sci. & Technol. (2019)
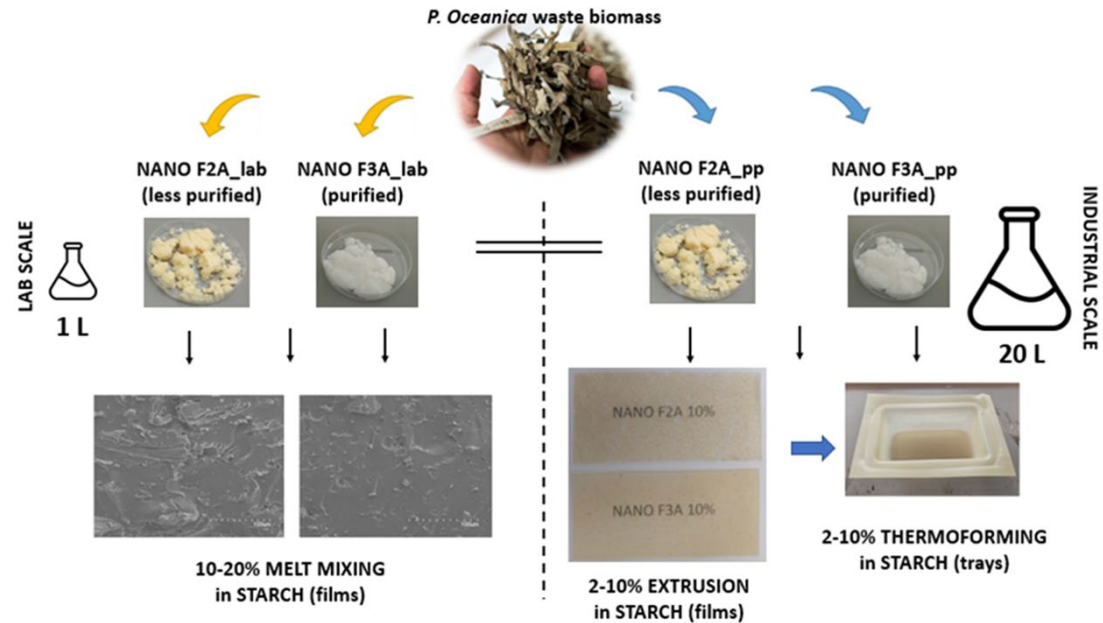
Martinez-Sanz et al. Food Pack. & Shelf Life (2019)

RESIDUAL VALORISATION

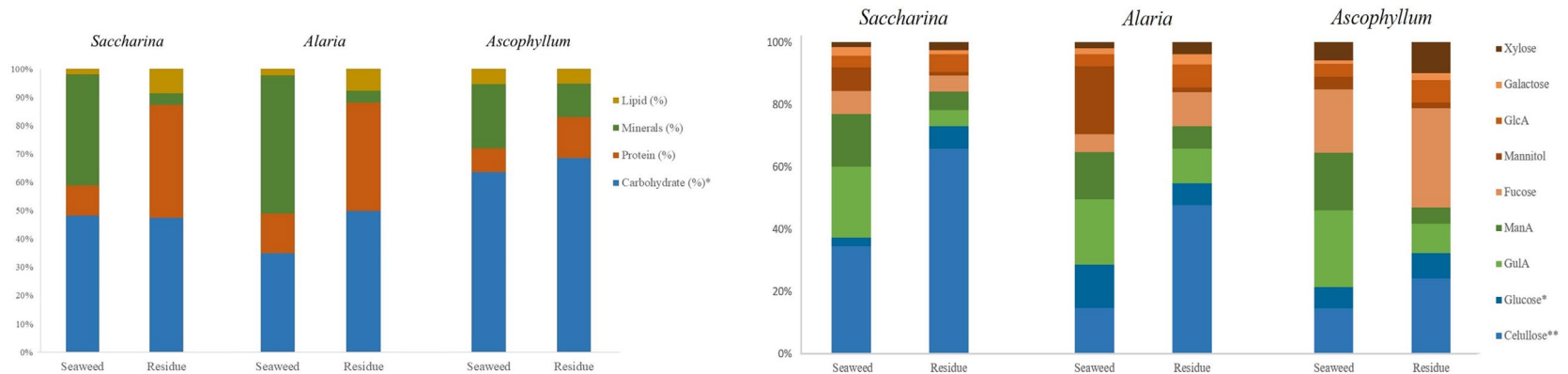- Great potential for use in sustainable packaging applications

POSIMAT: Valorisation of *P. oceanica* residues for the development of biodegradable packaging materials

PCT/ES2019/070448

RESIDUAL VALORISATION

- A whole world to discover…

FUTURE CHALLENGES

FROM LAB TO SOCIETY

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