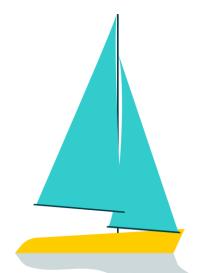


SEAREFINERY

IMPROVED VALORIZATION OF MARINE SOURCES AND PROCESSING WASTE FOR RESOURCE EFFICIENT BLUE FOOD/FEED AND ENVIRONMENTALLY SUSTAINABLE MATERIALS DEVELOPMENT



SEAREFINERY aims to establish a novel bio-based blue food/feed and blue food packaging materials production platform by embracing marine-based sources and wastes at transnational level

Biobased Products (BBPs) of SEAREFINERY

BBP 1: High value-added compounds

- Biopolymers (protein, lipids, alginate, chitosan, collagen, carrageenan) from marine algae and jellyfish
- Calcium carbonate from seashells, and hydroxyapatite from fish bone and fish scale
- Bioactive molecules from seaweed and bioactive peptides from fish waste

BBP 2: Blue food products

- Meat and cheese analogue based on marine-based ingredients
- Functional bread enriched with protein, phenolics, inorganics, dried whole algae powder, essential amino acids and omega 3 fatty acids

BBP 3: Blue feed products

- Microalgae biomass rich in essential amino acids, oil and fatty acids as sources of high-quality feed for farmed fish
- Single Cell Protein from fish waste/ aquaculture derived volatile fatty acids

BBP 4: Smart and active food packaging materials

- Food packaging products (edible coating, active film with antioxidant/antimicrobial capability, nanofiber)
- Biosensor developed from marine-based biochar

Biorefinery Platform



Blue food pathway will start with extraction of high-value added materials from *the Black Sea*, *the Mediterranean Sea* and *the Atlantic Ocean* followed by use of these materials in blue food production and smart and active packaging material for the blue food.

Blue feed pathway will cover use of aquaculture wastewater and fisheries from *the Baltic Sea* and *the North Sea* as the raw materials for the production of fish feed from microalgae and bacteria (single cell protein).

Environmental, economic and social evaluation pathway will focus on the end products based on life cycle assessment, market assessment, and stakeholder and citizen engagement



SEAREFINERY platform will be designed through innovative approaches within a multidisciplinary and smart collaboration platform for developing a breakthrough eco-centric strategy considering the local sources, economic and social perspectives at transnational level within the EU.





