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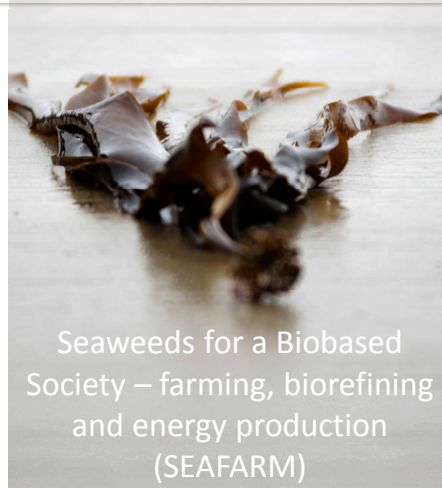
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Preservation and storage

When taking up seaweed biomass onto land degradation processes start quickly. In these processes, compounds interesting to recover are destroyed and unwanted compounds are formed. Especially, from a food perspective off-flavor compounds are problematic. To prevent this, functional preservation is needed during post-harvest storage.



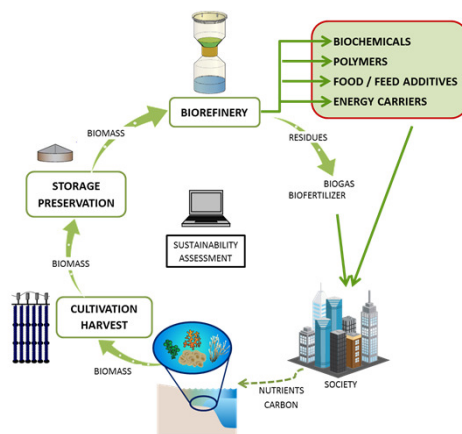
Seaweeds for a Biobased Society – farming, biorefining and energy production (SEAFARM)

Photo: Annika Söderpalm

Jenny Veide Vilg, Ingrid Undeland

Biorefinery: food additives, chemicals, and fuels

Seaweeds contain valuable compounds like proteins, lipids, antioxidants and carbohydrates. The brown macroalga *Saccharina latissima* can contain up to 65% carbohydrates and 15% protein. In a biorefinery, these compounds can be extracted to serve as raw material for food, feed, biofuels and biomaterial. At all steps in the biorefinery, extraction techniques must be carefully elaborated, so that they do not harm the outputs of subsequent steps. For food and feed, smart co-extraction of several high value compounds together can further raise the value of outputs.



Focus Area 2

- Compare different preservation methods to identify suitable techniques for seaweed
- Adapt and optimize current technology for ensiling to seaweed biomass
- During the preservation processes determine biomass composition, solubilization of chemical components, microbial activity and chemical/biochemical degradation compounds
- Identify for our different biorefinery processes a suitable method that preserves the intended products and are cost- and energy effective

Focus Area 3

- Characterization of biomass from brown algae harvested at the Swedish west coast, including adoption of analysis methods for adequate quantification of alga-specific compounds
- Development of compatible extraction methods for proteins, lipid-soluble compounds, and soluble carbohydrates
- Investigating functional, sensorial, and nutritional properties of isolated compounds
- Development of functional methods for saccharification and fermentation of the carbohydrate fraction

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