Towards a Biobased Economy – Development of a Seaweed Biorefinery

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CHALMERS

indbio
SUSTAINABLE LIVING CHEMISTRY

CHALMERS

Industrial Biotechnology

Chemical and Biological Engineering

- Cell Factories for Bulk Chemicals
- Enzyme Discovery and Production
- Enhanced Robustness of Industrial Microorganisms
- Microbial Fuel Cells
- Algal Biotechnology

Microalgae

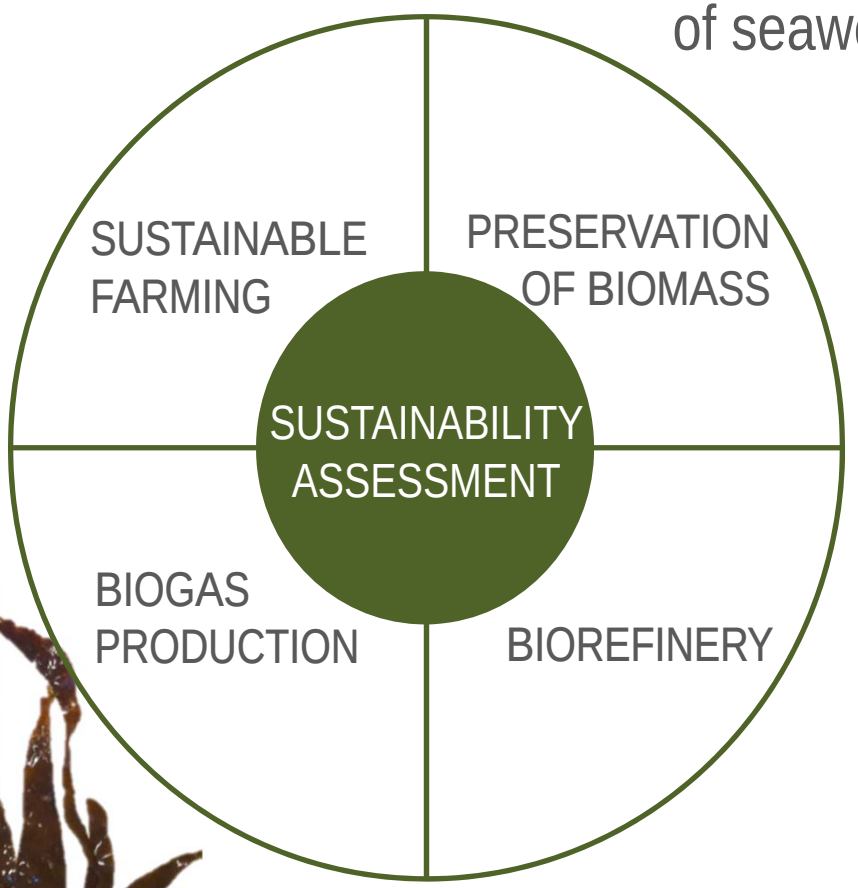
- Flue gas as carbon source
- N-3 PUFA production (EPA, DHA)
- Carbohydrates for bioethanol
- Modelling algal processes in biorefinery concept

Macroalgae

- Seasonal variations in chemical composition
- Bioprospecting for novel enzymes
- SEAFARM

The SEAFARM project

Aim: To develop and evaluate sustainable use of seaweeds for a biobased society



- Funded by the Swedish Research Council Formas
- 11 Academic and 10 non-academic partners
- www.seafarm.se
- At Chalmers:
  - Biomass preservation
  - Biomass characterization
  - Extraction of carbohydrates
    proteins
    (lipids)
  - Hydrolysis and fermentability of carbohydrates

Our contribution

Bioprocessing of plant material

Food science and technology

Knowledge

Adapted techniques

Sustainable procedures for analyses and extraction of compounds in the biorefinery

Our future objectives

To develop a functional and sustainable biorefinery with kelp species from the Swedish west coast as raw material.

To optimize the processes so that several high value products can be extracted from the biomass.

To expand into other regions and to adjust the concept to other alga species.

People

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