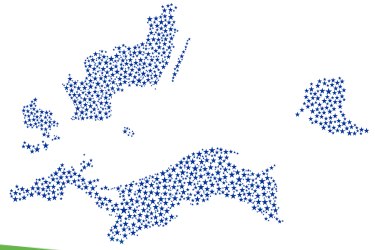
COASTAL BIOGAS

Cluster On Anaerobic digestion environmental Services and nuTrients removAL

Introduction to the project

Dr. Anne Roßmann
Agency for Renewable Resources (FNR)



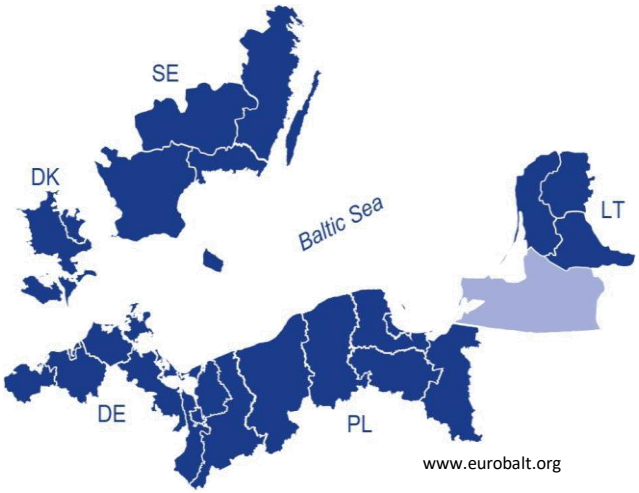
2nd COASTAL Biogas Conference
13 November 2019
Roskilde, Denmark

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V., Gdańsk University of Technology, BEIC, Roskilde University, Universität Rostock, Lithuanian Energy Institute

Funded by Interreg South Baltic, European Union, European Regional Development Fund

Overview

- Funding programme: Interreg South Baltic
- Funding volume: 1.575.378 €
- Duration: 36 months (07/2018 – 07/2021)
- Participation: 6 partners from 5 countries (DE, DK, LT, PL, SE)



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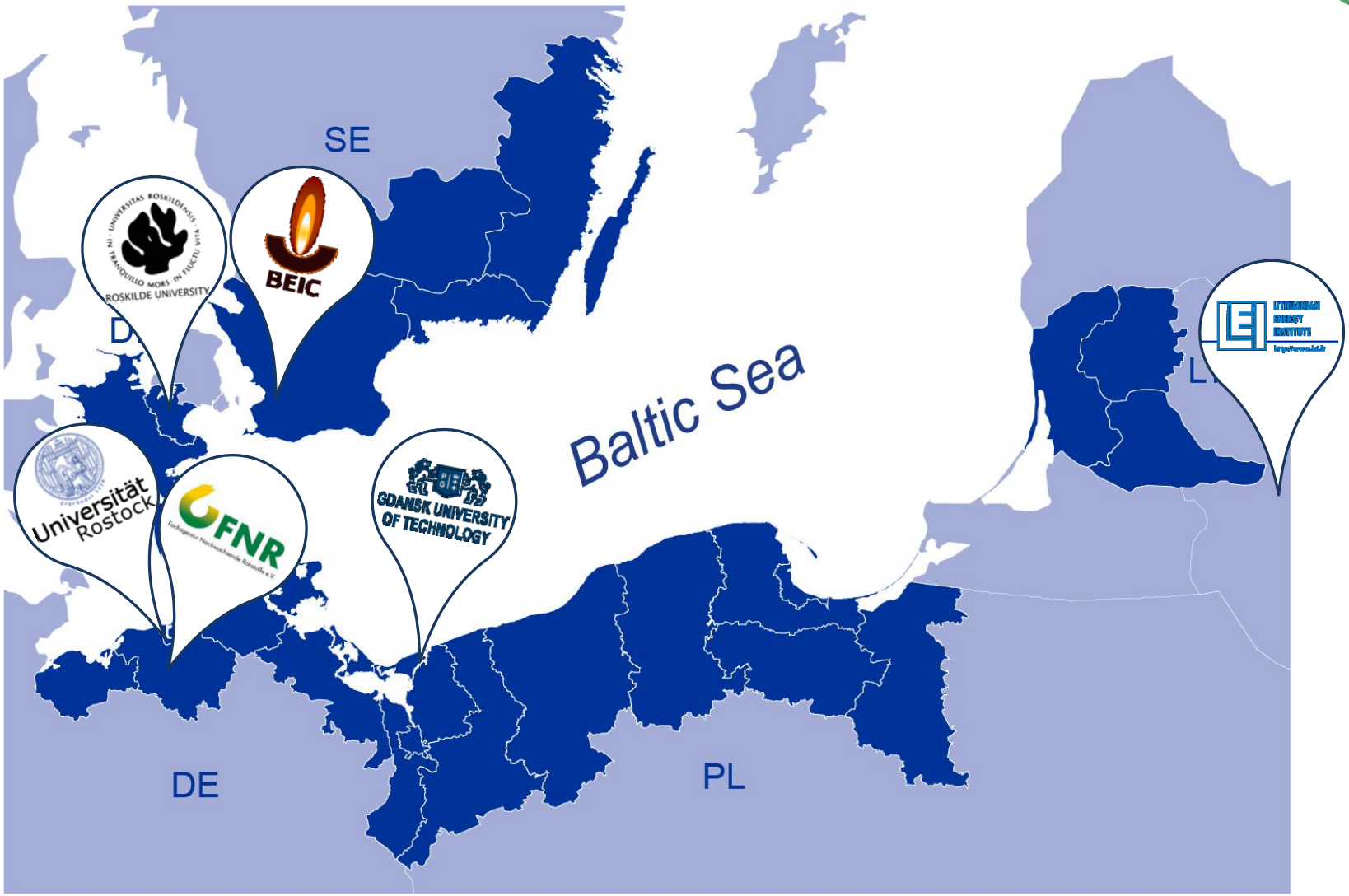
Project Partners



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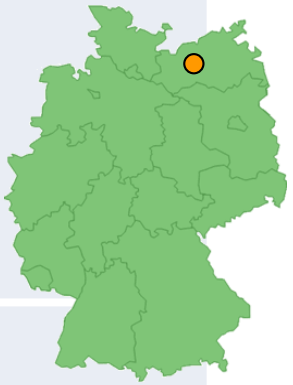
FNR – who we are

Foundation:	October 1993
Main office:	18276 Gülzow-Prüzen
Support:	Federal Ministry of Food and Agriculture (BMEL) and State of Mecklenburg-Western Pomerania
Employees:	111
Legal status:	Registered association with 78 members (5 voting members)
Tasks:	• Promotion of research, development and demonstration (project management) • Information & advice • Public relations • International and EU activities
Target groups:	Industry, SME, public and private research institutes, universities, government agencies



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FNR – what we do

Fachagentur Nachwachsende Rohstoffe e.V.

- Is a competent partner for renewable resources on European and international level on behalf of Federal Ministry of Food and Agriculture
  - Analysis of political developments and framework conditions in the European Union
  - Information and advice about European funding opportunities for German applicants
  - Development of EU projects (Interreg, H2020, BBI-JU, ERA-NET)
  - Coordinator/partner of around 15 ongoing EU projects
  - Member of international and EU expert panels

www.international.fnr.de

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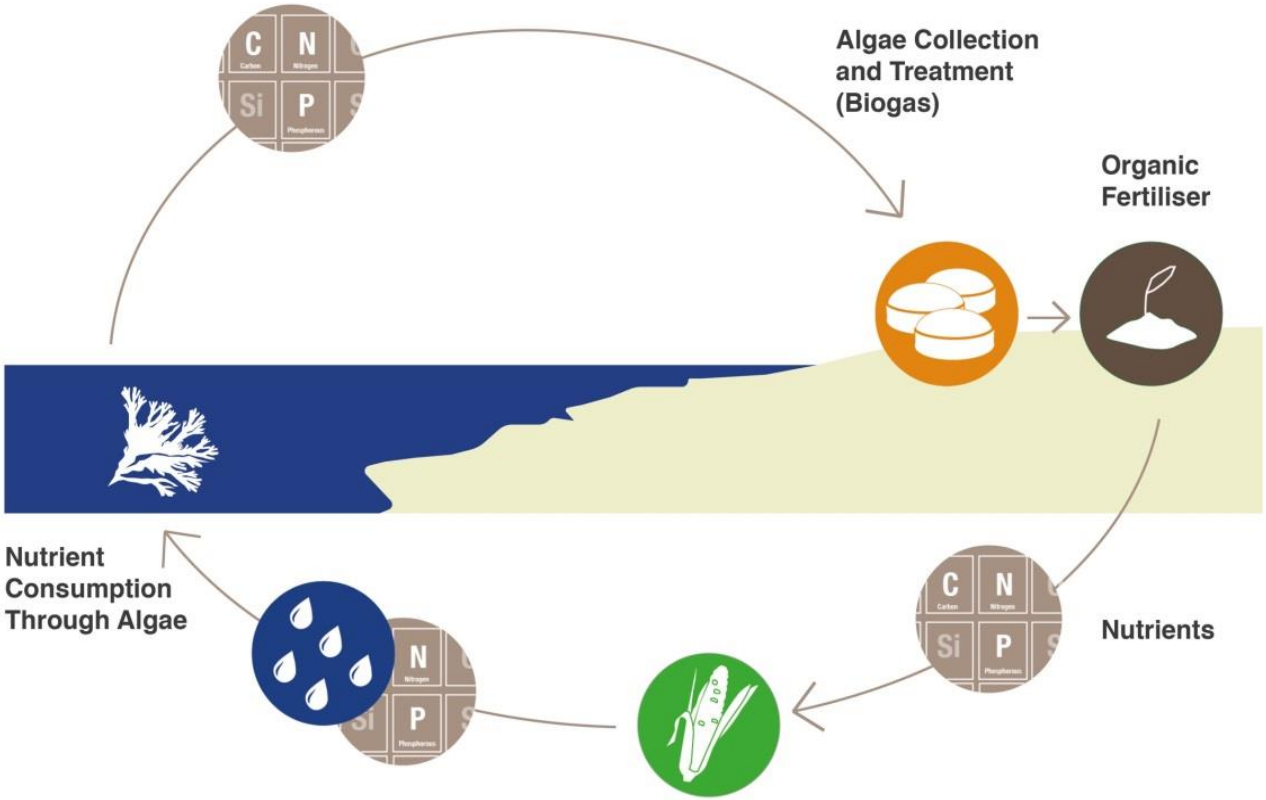
What the project is about…

COASTAL BIOGAS



Angela Clinkscales, UROS

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Objectives

- Removing nutrients from the Baltic Sea by collecting cast seaweed and using it as co-substrate for anaerobic digestion to counteract eutrophication
- Closing nutrient cycles by utilising the digestate as alternative to artificial fertilisers and therefore, contribute to the transition to a circular bio-economy
- Supporting cross border technology guidance and transfer in seaweed co-digestion
- Developing a decision support tool and training kit

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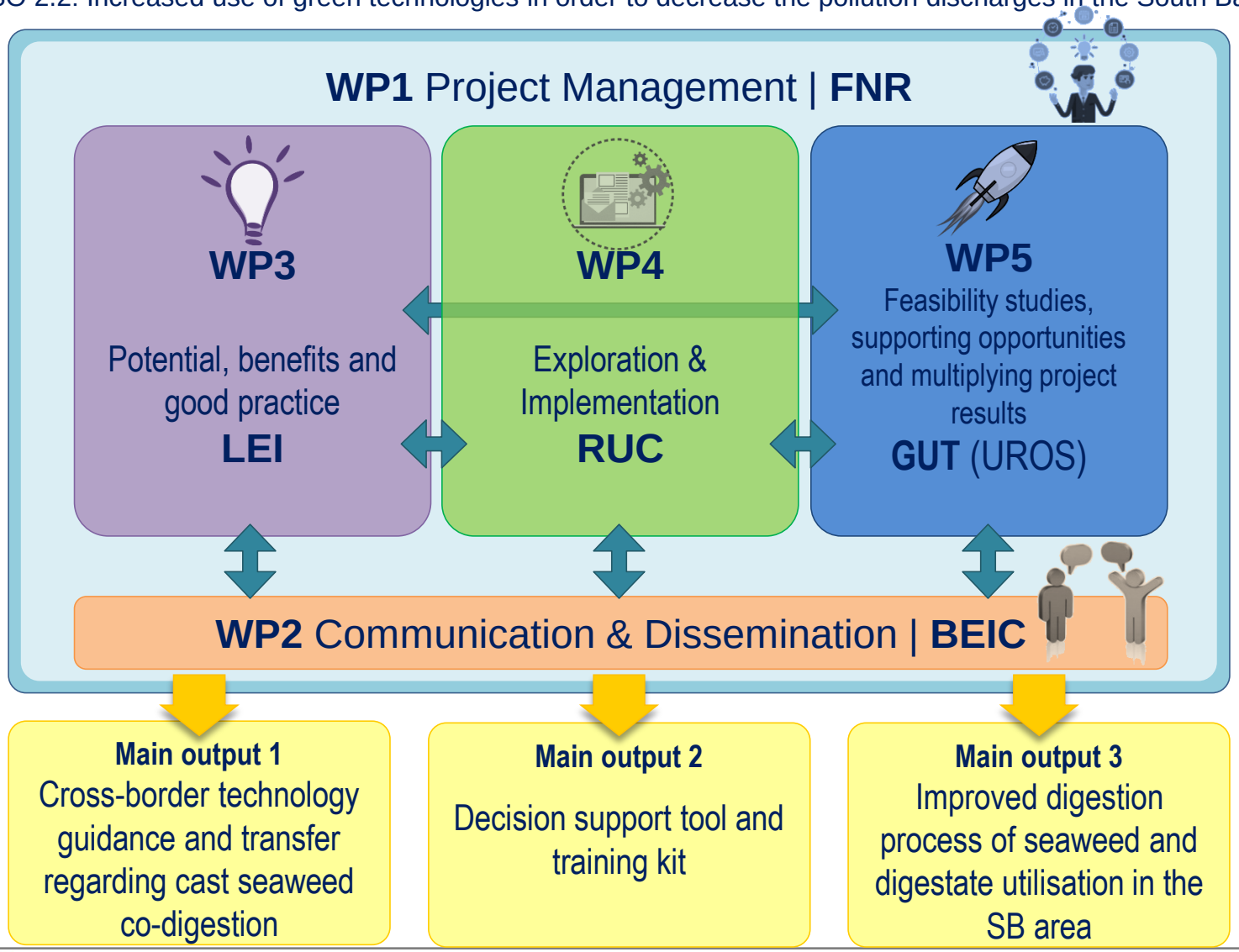
Overall structure

SO 2.2: Increased use of green technologies in order to decrease the pollution discharges in the South Baltic area



adapted from Wibke Baumgarten, FNR

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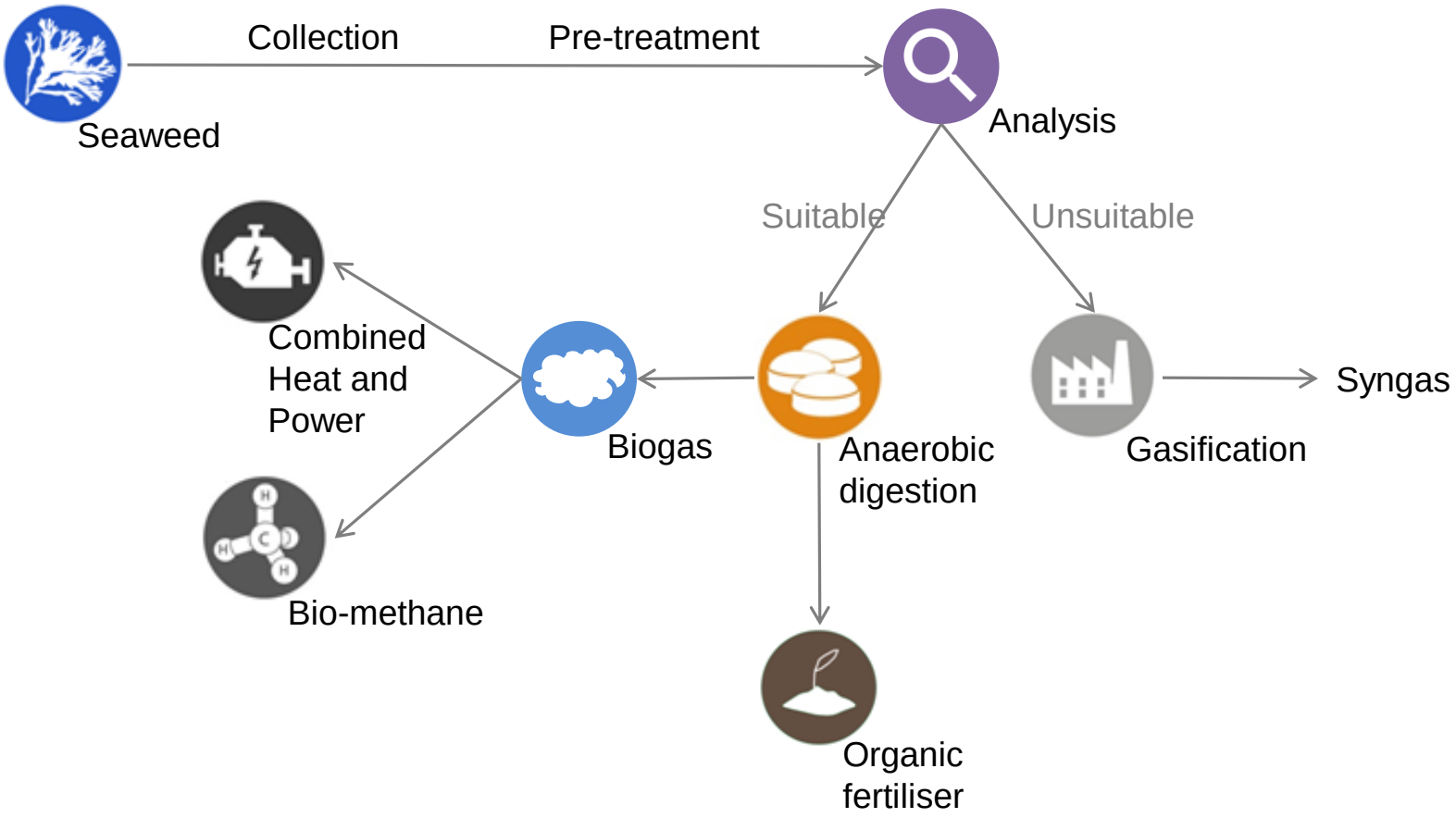
Technological chain



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Collection techniques

- Different seaweed collection techniques will be tested and evaluated by LEI and RUC regarding sand content and environmental impact

Solrød Strandrens, Facebook post (23.06.2016)

Collection on the beach

Fredenslund et al. (2012)

Collection in shallow water

http://www.aquarius-systems.com/Pages/53/aquatic_weed_harvesters.aspx

Collection in deep water

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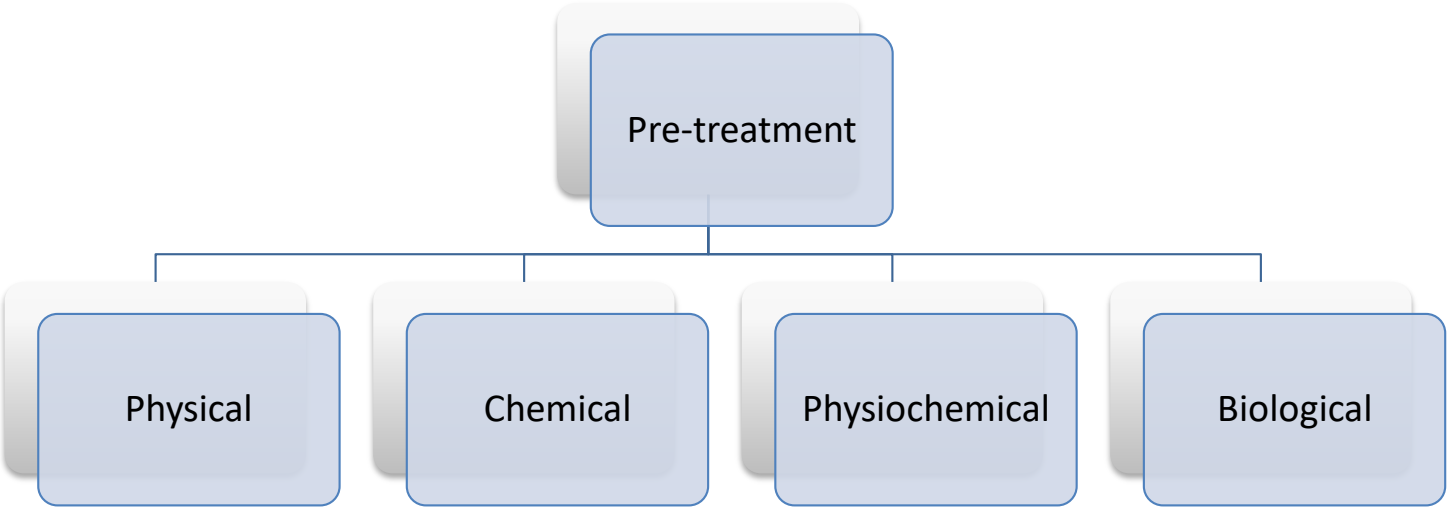
Pre-treatment

- Technologies of biomass pre-treatment are tested by GUT to improve anaerobic digestion process and methane yield



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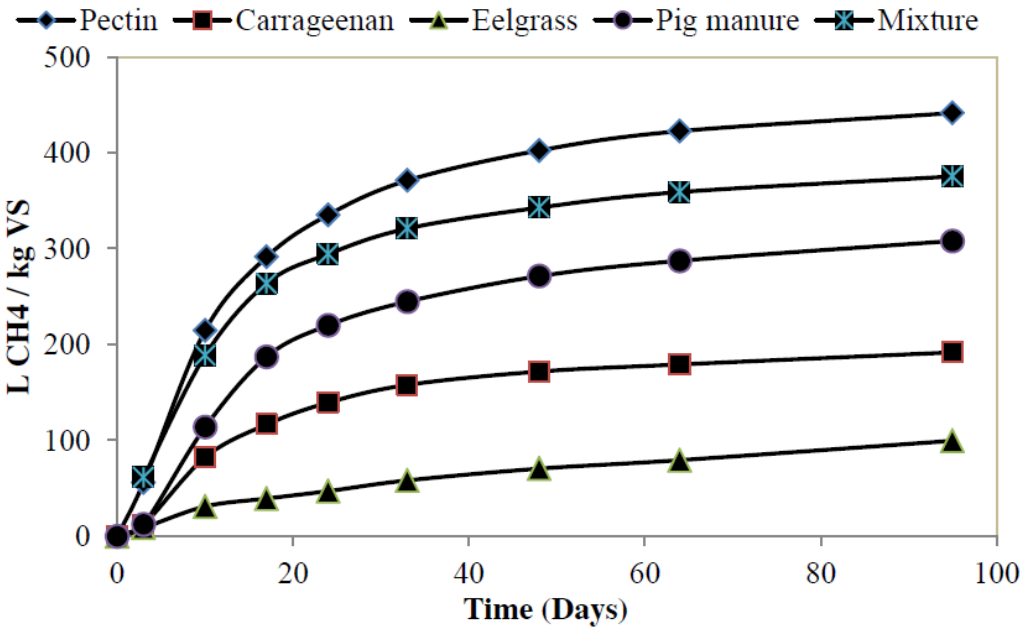
Methane production potential

- Investigations on co-digestion of cast seaweed



Methane production observed for the materials and a mix of materials tested in batch experiments

Fredenslund et al. (2012)

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Seaweed potential and policy frameworks

- The potential of cast seaweed in the South Baltic area will be assessed
- Policy frameworks in the partner countries regarding the collection and utilisation of cast seaweed will be reviewed and evaluated

How much seaweed is being washed ashore each year?

How long is the coast line that has to be cleaned from seaweed and are those beaches accessible?

Which regulations apply for using seaweed for AD?

Which regulations apply for the utilisation of digestate as fertilisers?

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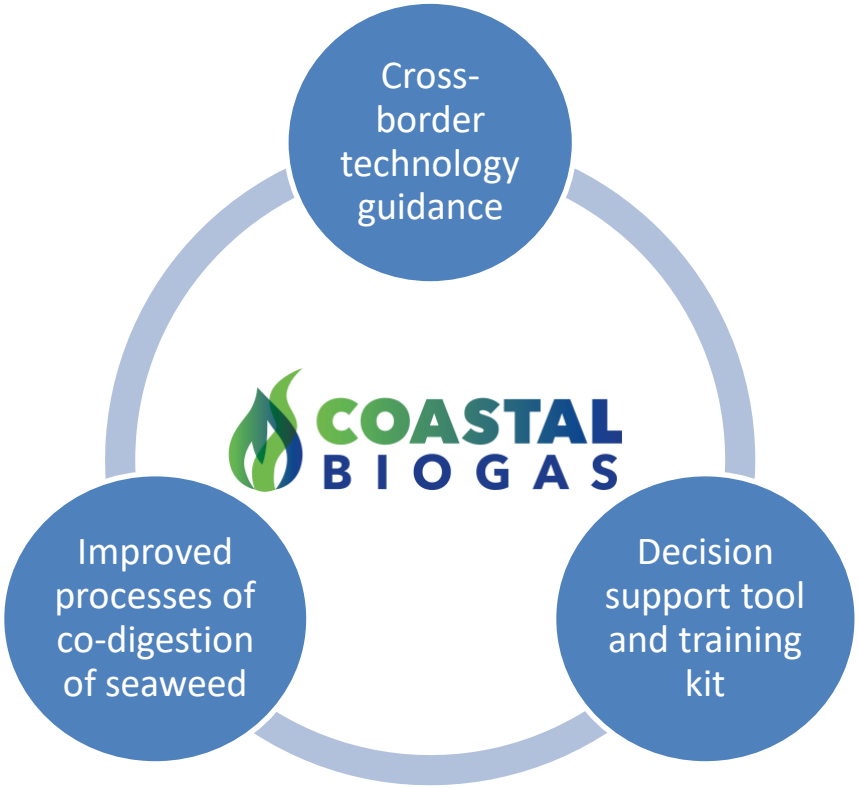
Project outputs



Target Groups

- Biogas plant operators
- Municipalities
- Local authorities
- Waste management companies
- Farmers
- Cleaning companies

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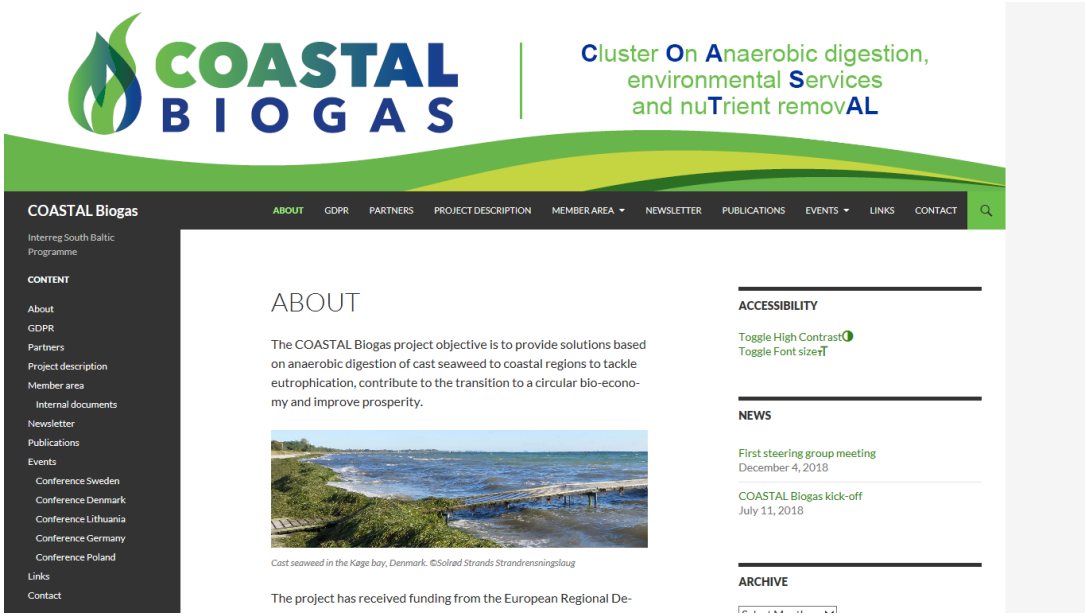
www.coastal-biogas.eu



- Information
- Events
- Newsletter

Contact:
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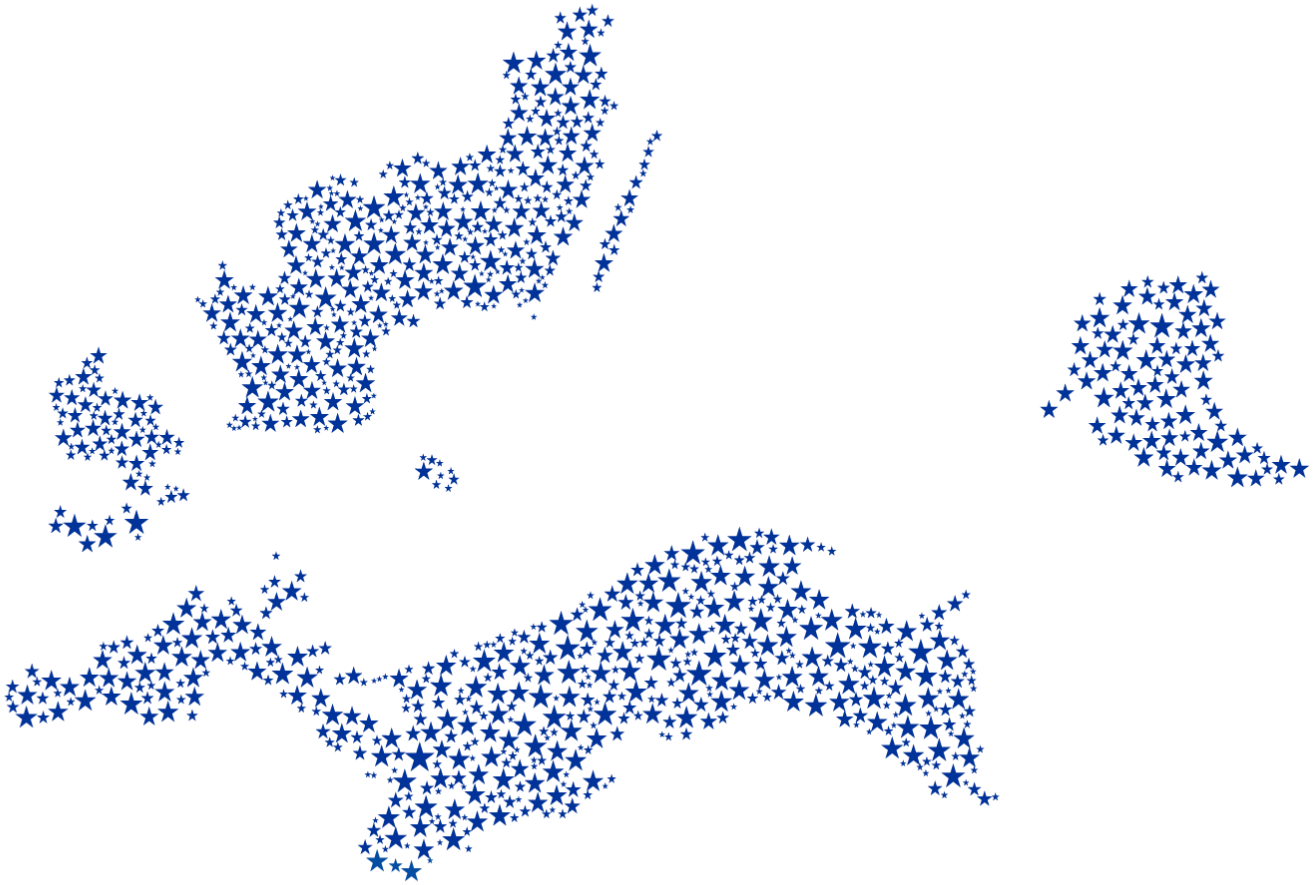
Thank you!



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References

- Fredenslund, A. M.; Møller, H. B.; Christensen, T. B.; Kjær, T. (2012): Environmental perspectives on using cast seaweed for biogas production. Paper presented at Fourth International Symposium on Energy from Biomass and Waste, Venice, Italy

- Pictures:
- [1] Solrød Strandrens, Facebook post (23.06.2016)
- [2] Fredenslund, A. M.; Møller, H. B.; Christensen, T. B.; Tyge, T. (2012): Environmental perspectives on using cast seaweed for biogas production. Paper presented at Fourth International Symposium on Energy from Biomass and Waste, Venice, Italy
- [3] Technological Solutions for the Collection and Removal of Algae from the Beach, Sea and Coastal Strip in Trelleborg Municipality (wabproject)

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Project Partners

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DE	PL	SE	DK	DE	LT

What the project is about…

Excess of nutrients (N & P) on farmland

Enrichment of nutrients (N & P) in the Baltic Sea (eutrophication)

Removal of nutrients by collection of cast seaweed

Usage of seaweed as co-substrate for anaerobic digestion

Digestate can replace synthetic fertilisers

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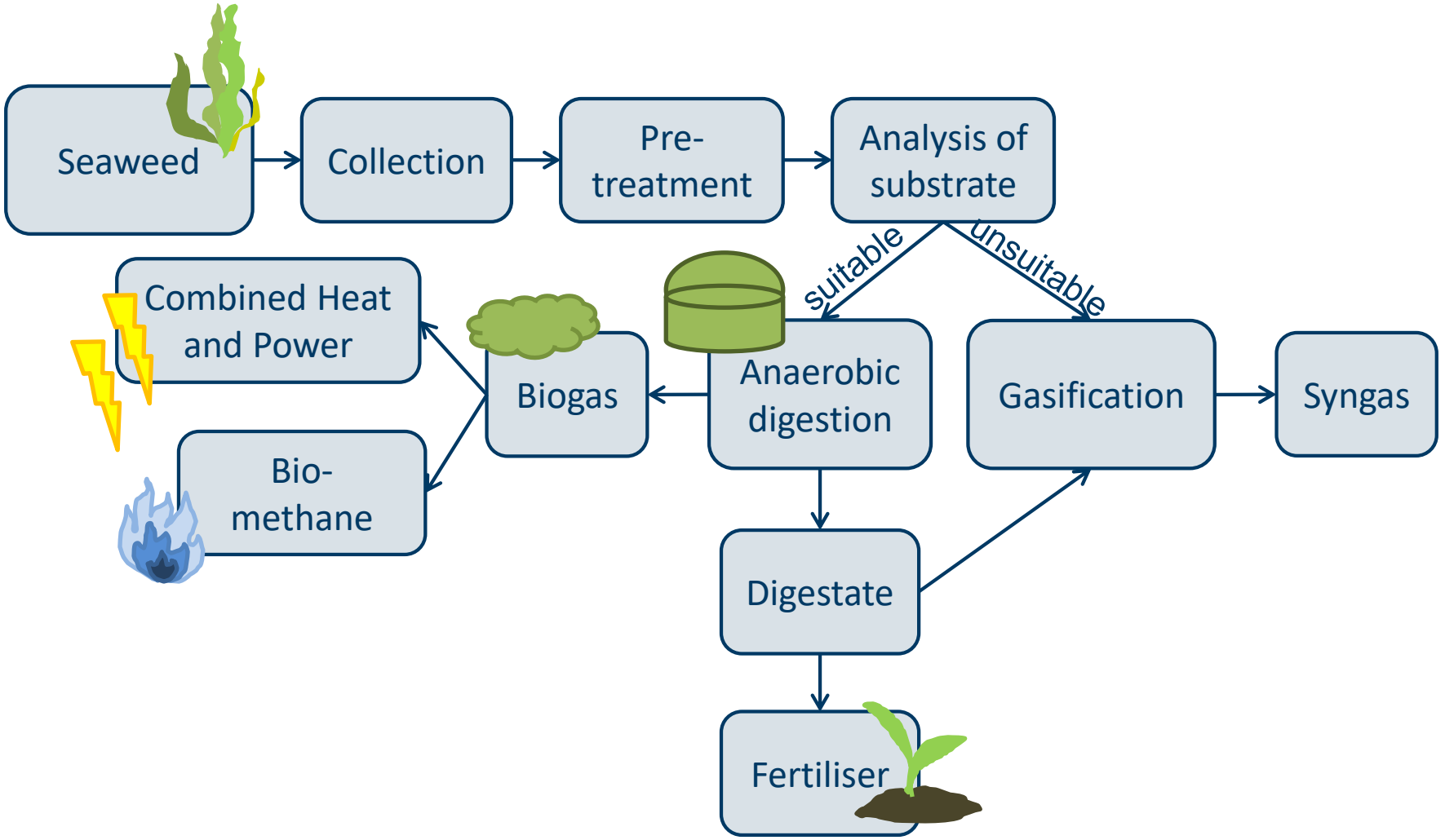
Technological chain



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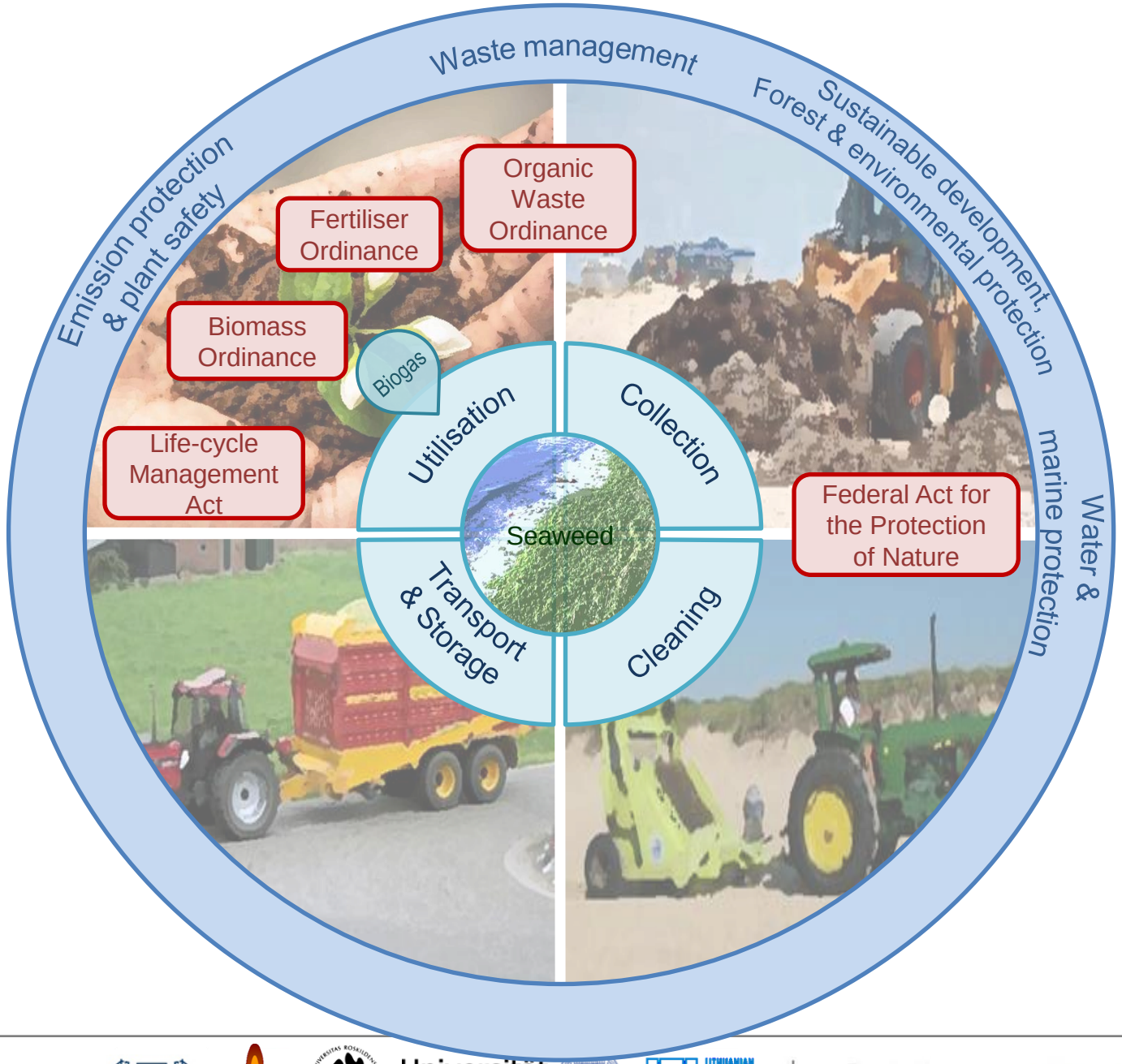

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Title (Arial, 44 pt.)

Please, use preferably Arial 18 for normal text;
you may choose between these text colours:

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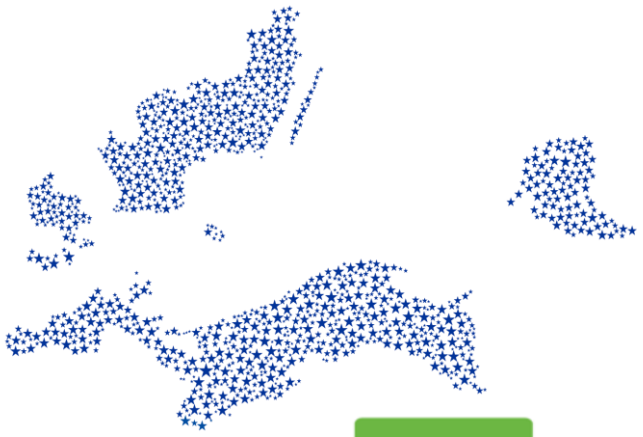
Try to avoid using too many animations
→ Scientific, clear ppt, no ‚special effect show', please ;-)
Use graphics with high resolution (good quality → contrast, colour)
Be aware of data protection and always indicate authors/sources

Don't make changes to the slides in the master, please



Environment

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360 C

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