



GO-GRASS

Recommendations for technology development and skills



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Grass-based circular business models
for rural agri-food value chains



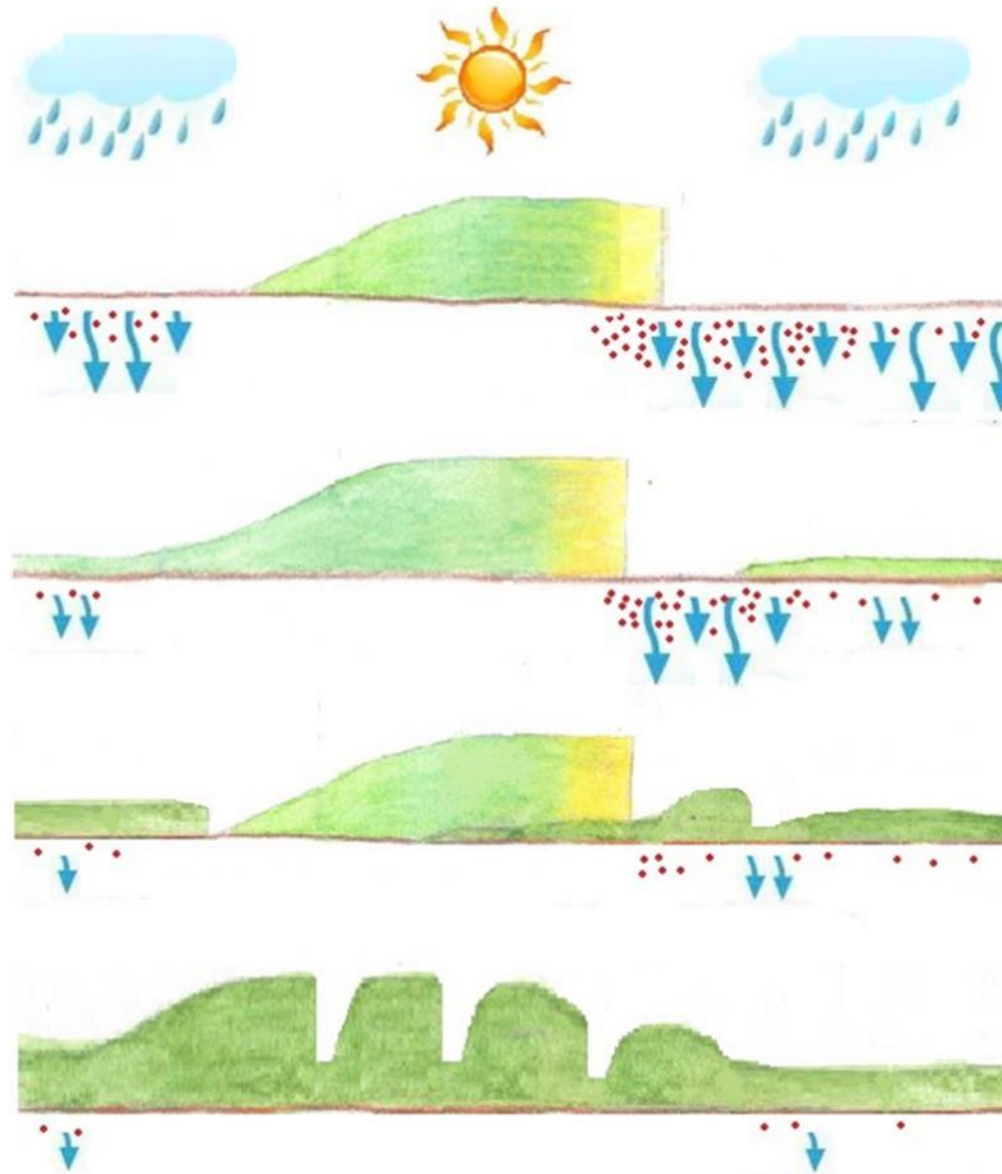
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 862674

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We need to tighten the nitrogen cycle (more with less)



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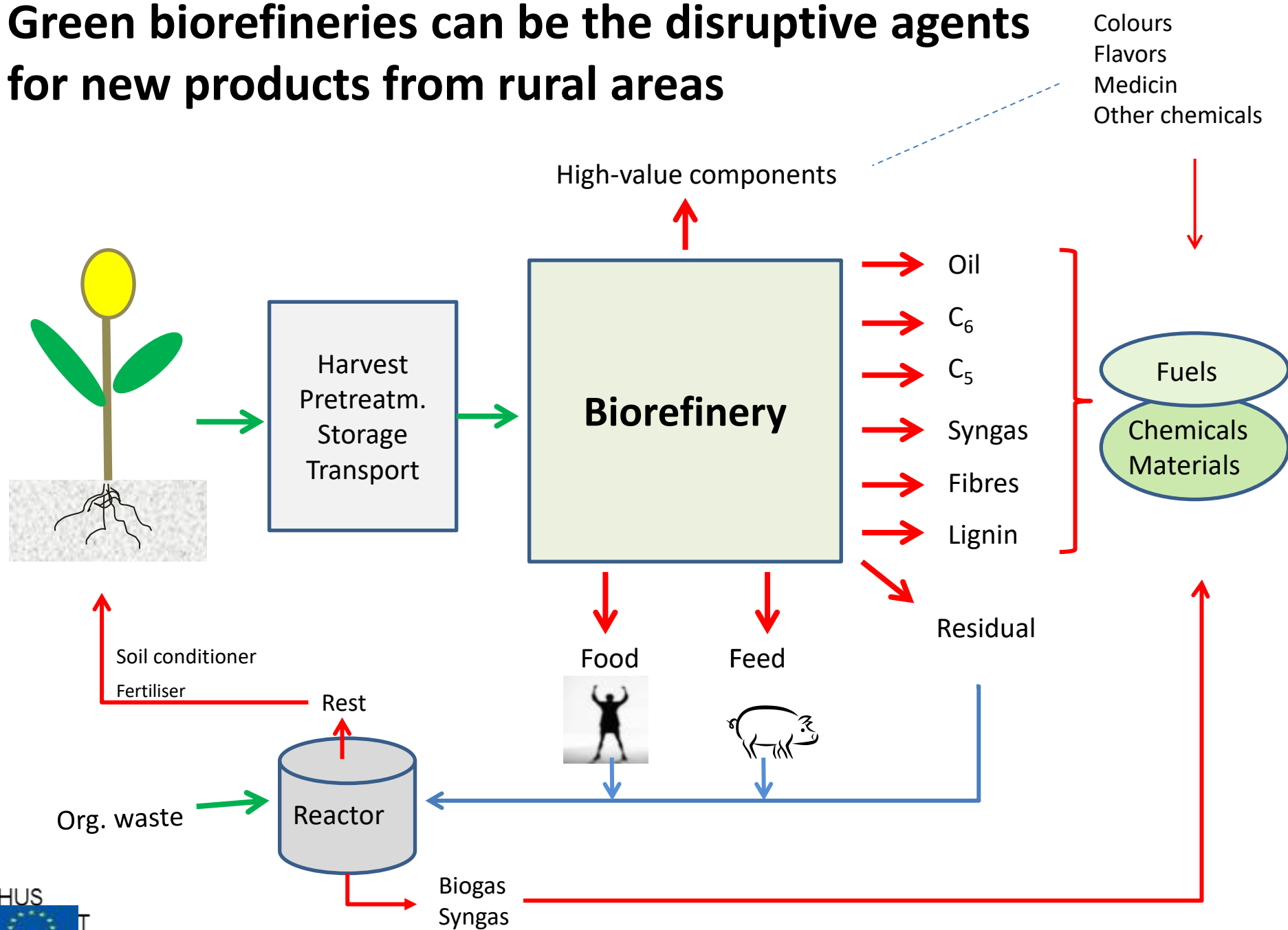


- Soil water (drainage)
- Soil nitrate (leaching)

Figure adapted from E.M. Hansen, Aarhus University.

Green biorefineries can be the disruptive agents for new products from rural areas

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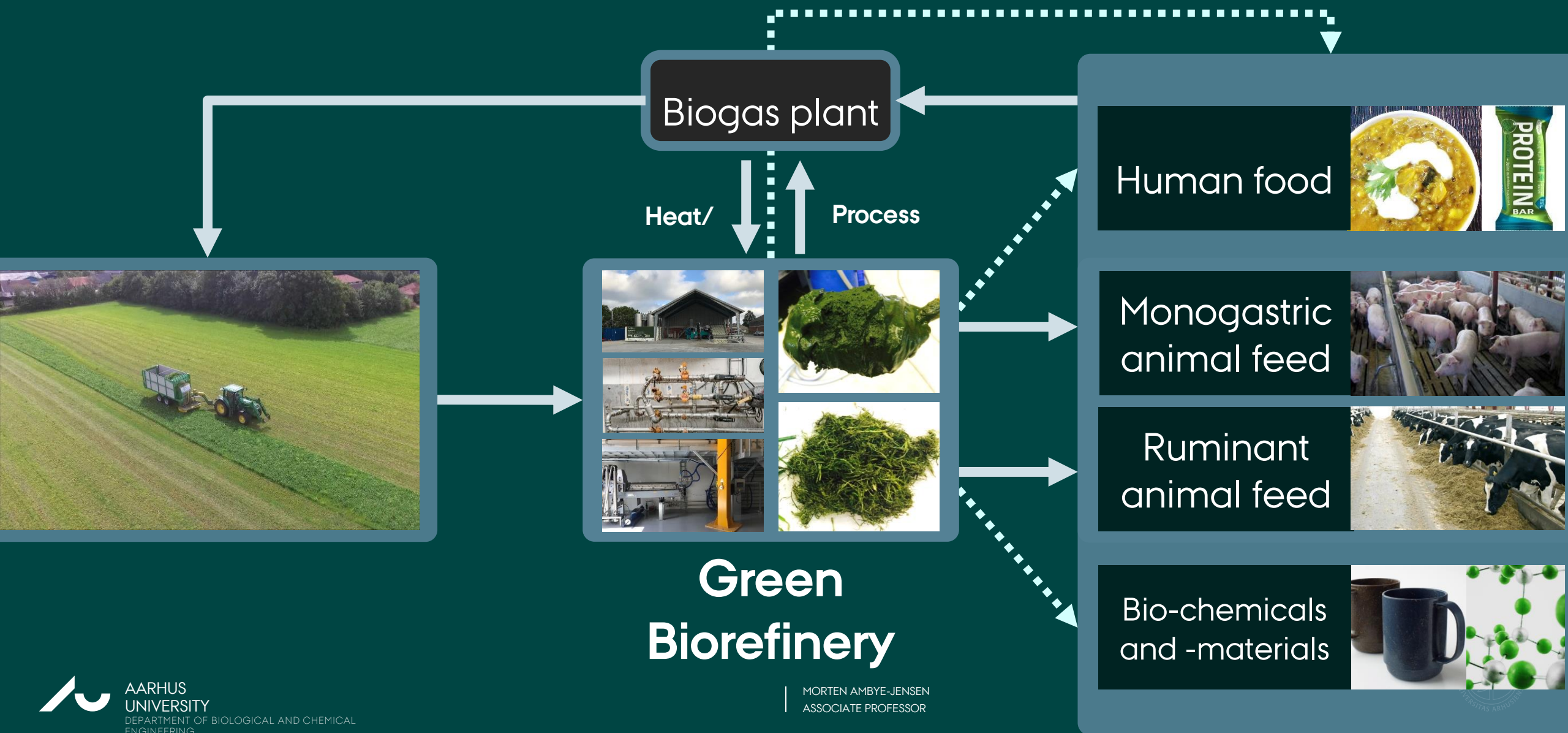
GO-GRASS green biorefinery demo has paved the way for market introduction – two commercial plants and many in pipeline

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Status of grass biorefining development

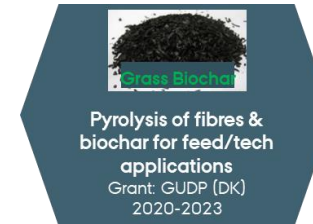


INCREASED VALUE OF THE FIBRE

Basic scenario: **Feed for ruminants or substrate to biomethane (ca 0.13 EUR/kg)**

Thermal conversion, e.g. Pyrolysis

- Supply of internal energy needs for heating and drying
- Biochar production
- Biooil production



Further conversion of the fibre fraction.

- Lignocellulosic biorefinery (LCF-Biorefinery)

Applications in Biomaterials

- Insulation materials
- Bio-composites
- Packaging
- Biobased textiles
- Horticulture substrates

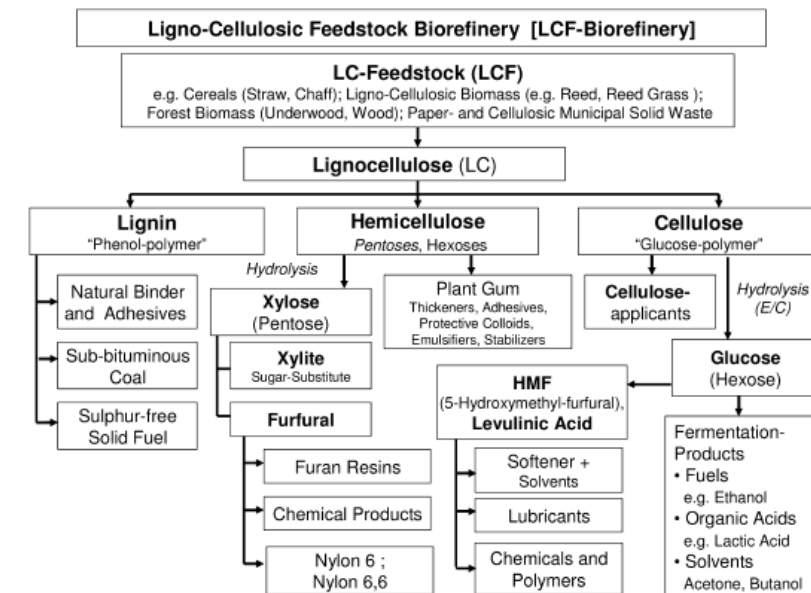


Fig. 1.11 Products of a lignocellulosic feedstock biorefinery (LCF-biorefinery, Phase III) [78, 79, 95].

First commercial examples can be found, e.g. grass-based insulation boards – www.Gramitherm.Eu



SHIFTING FROM THE FOSSIL ERA TO THE BIOECONOMIC ERA IS NOT USUAL BUSINESS

To establish a new industry to substitute the fossil –

AND to disrupt agriculture

are enormous tasks demanding for mega-investments and new partnerships

What skills are required & how can business models in rural areas be replicated?

