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Boosting European Citizens' Knowledge and Awareness of Bio-Economy Research and Innovation

Funded by the European Commission under the Horizon 2020 Framework Programme Grant Agreement n. 773983

BLOOM – Strengthening the public awareness of bioeconomy in EU regions

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Harriette Bos (WR, Netherlands)

European Week of Regions and Cities
7-10 October 2019, Brussels

Funded by the European Commission under the Horizon 2020 Framework Programme Grant Agreement n. 773983

What to expect from this session?

About BLOOM

Bioeconomy

BLOOM hubs

Interaction

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 773983

About BLOOM

Objective: Raising awareness and enhancing knowledge on bioeconomy research and innovation

Duration: 3 years, starting in Nov 2017

Funding: Horizon 2020 (CSA), 2,4 million €

Partners: 12 partners from 8 European countries

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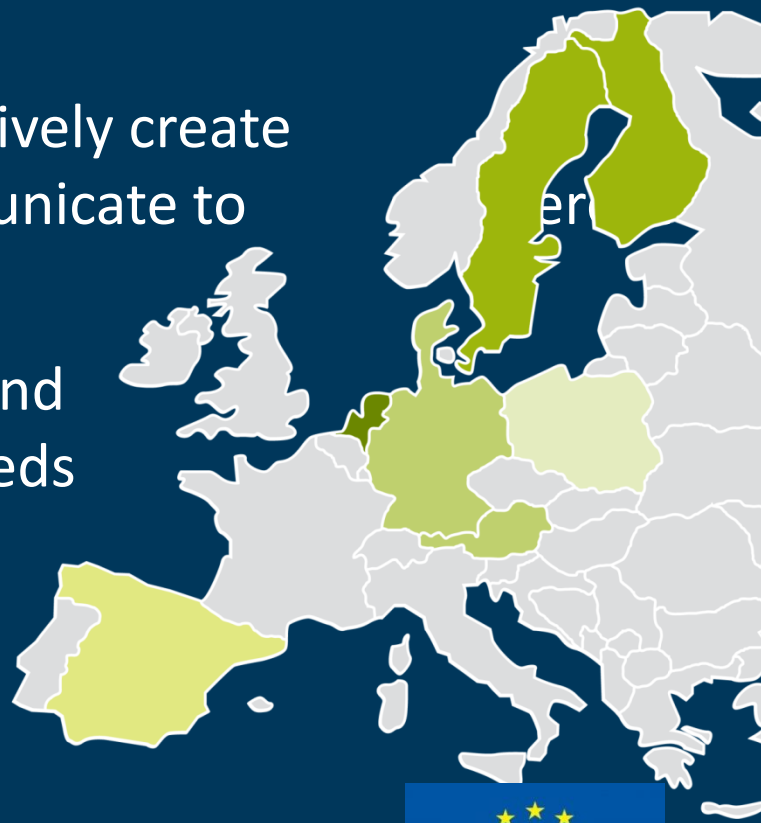
About BLOOM

BLOOM hubs

Five regional hubs foster public engagement in the bioeconomy

Co-creation: collaboratively create ideas on how to communicate to target groups

Outreach: co-created and adapted to regional needs



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About BLOOM

BLOOM school network

BLOOM School Box: new bioeconomy teaching resources for STEM classes, online available: http://www.scientix.eu/resources

BLOOM MOOC: "Boosting bioeconomy knowledge in schools" in spring 2019. The course gave educators a fresh perspective into the bioeconomy field and its application in STEM subjects. The course content is online available: https://bit.ly/BLOOM-MOOC

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Dr Harriëtte Bos
Wageningen Research

Bioeconomy

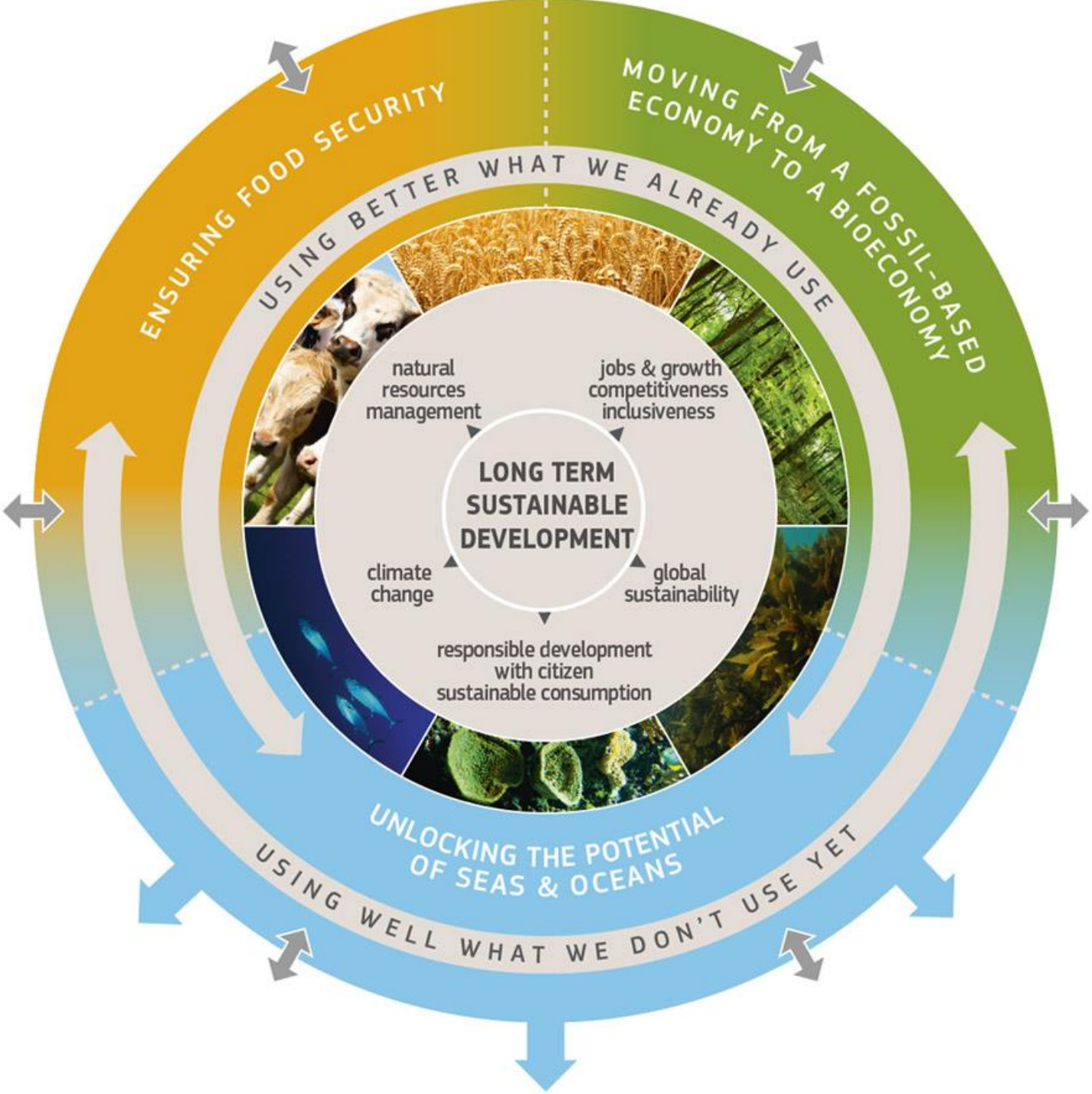
EUWRC

Brussels 8-10-2019

What is bioeconomy?

EU definition:

- Bioeconomy is the production of renewable biological resources and the conversion of these resources and waste streams into value added products, such as food, feed, bio-based products and bioenergy.


ENSURING FOOD SECURITY
MOVING FROM A FOSSIL-BASED ECONOMY TO A BIOECONOMY
USING BETTER WHAT WE ALREADY USE
natural resources management
jobs & growth competitiveness inclusiveness
LONG TERM SUSTAINABLE DEVELOPMENT
climate change
global sustainability
responsible development with citizen sustainable consumption
UNLOCKING THE POTENTIAL OF SEAS & OCEANS
USING WELL WHAT WE DON'T USE YET

Why a bio(based) economy?

- 30 years ago: agricultural overproduction in EU
- 20 years ago: environmental issues
- 10 years ago: oil supply, climate change, geopolitics, economic potential
- Now: circular economy and climate change

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Bio(based) Economy

- What are the present drivers for a Bio(based) Economy?

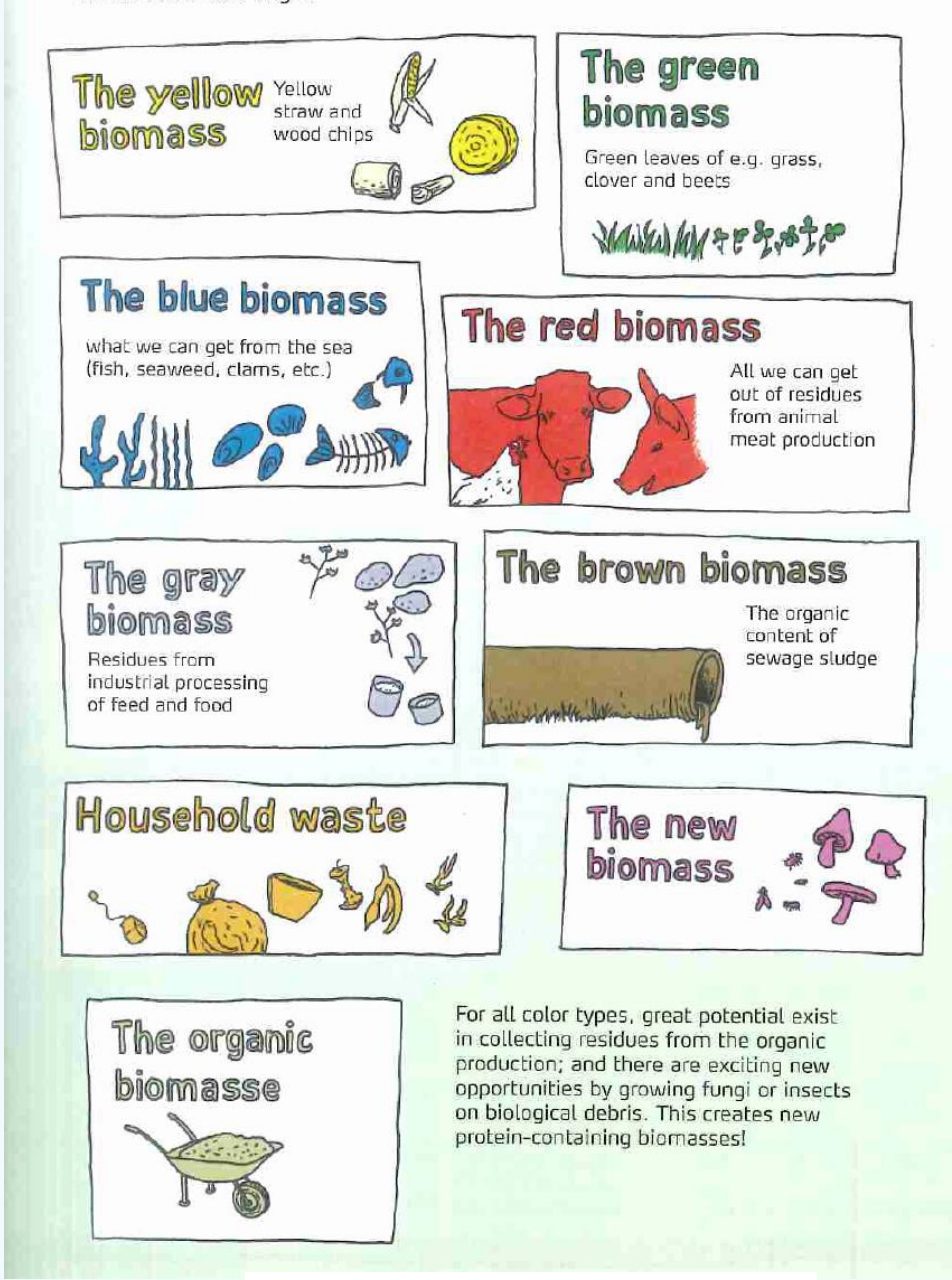
  - Sustainable prosperity and employment: strong and green economy
  - Positioning of our (EU) position in the world market

  - Geo-politics, independency of other countries
  - Reduction of energy, global warming, green house effect

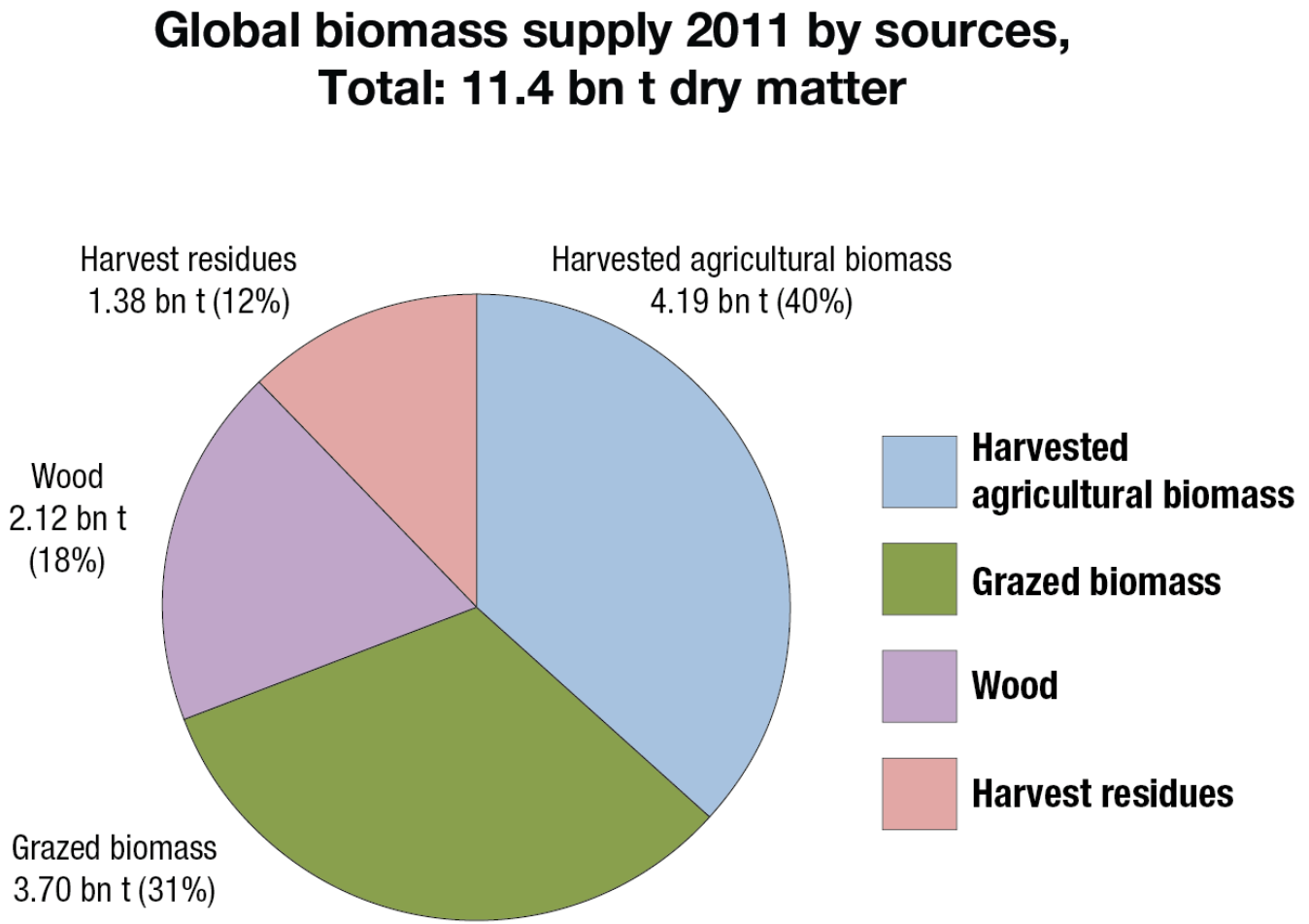
  - Innovation for a strong (sustainable) competitive position
  - Flexibility of biomass resources and cost reduction in the future
  - Efficient use of biomass resources

Biomass

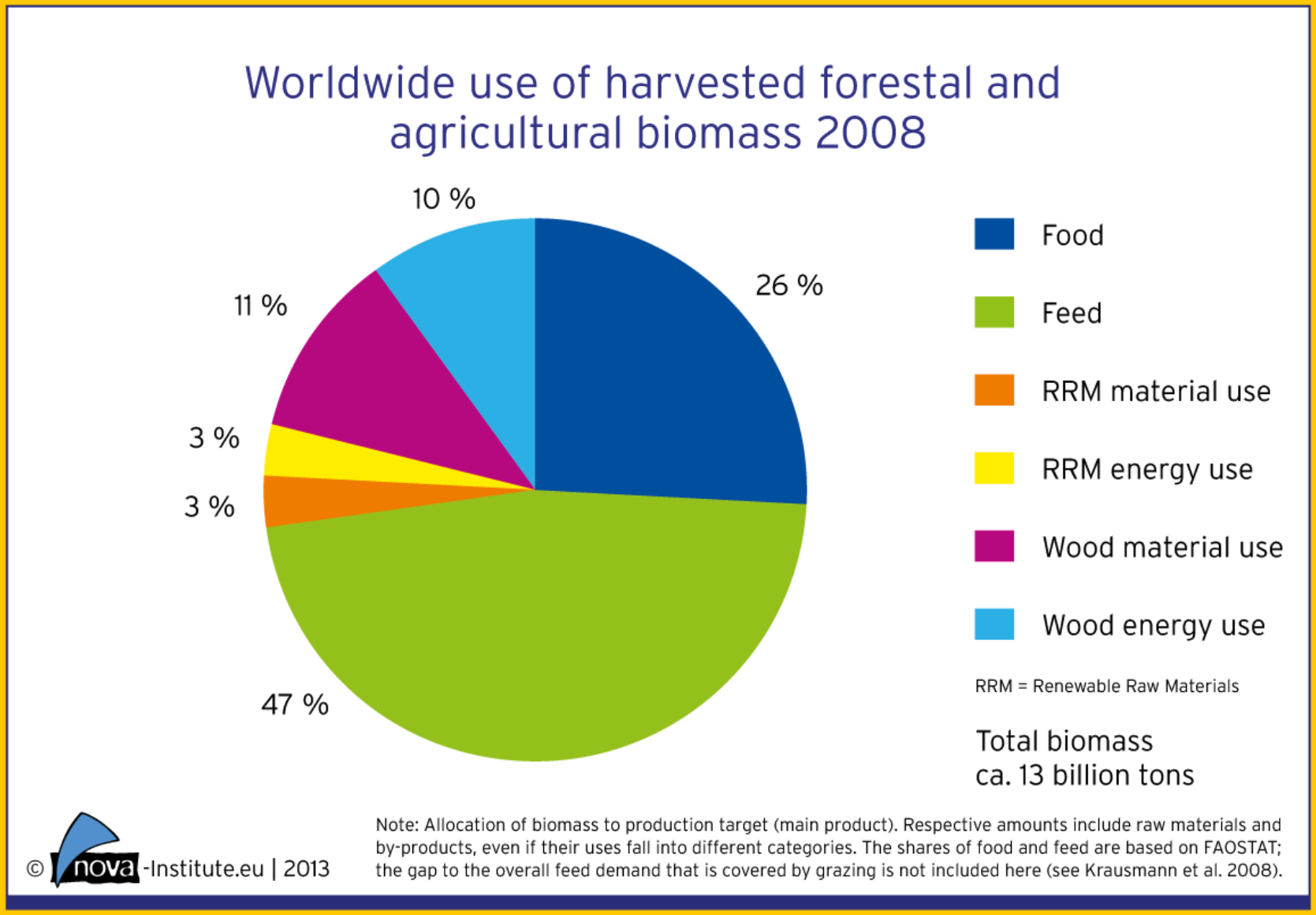
- The basis of Bioeconomy
- Crops, side streams wood, marine, etc



Global biomass supply 2011

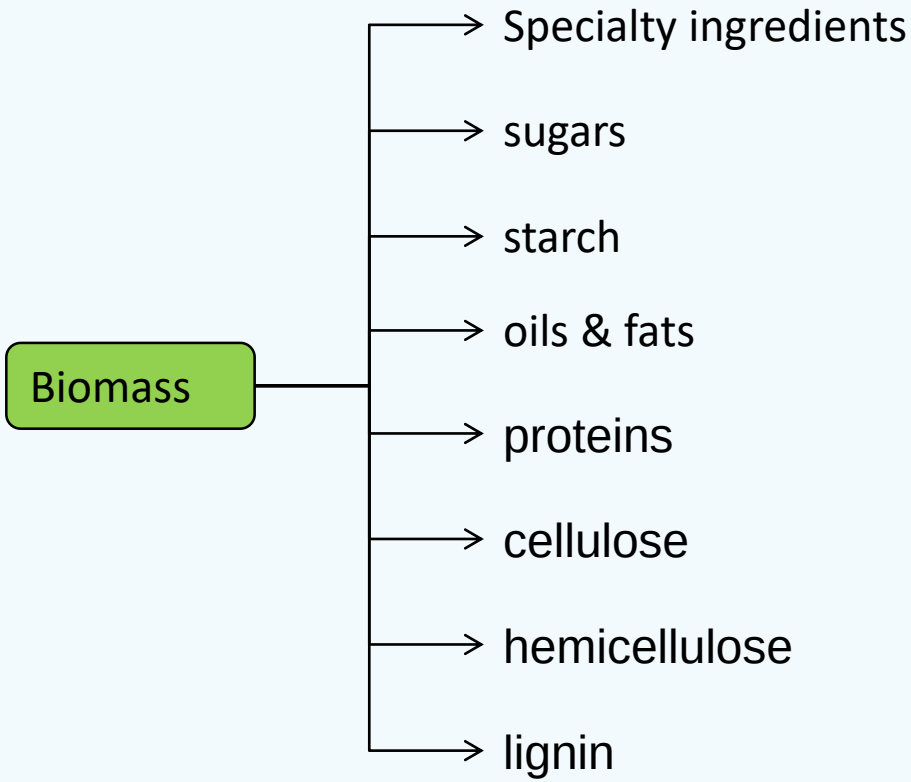


Application of harvested biomass worldwide



What can we do with biomass

Composition:



Application:

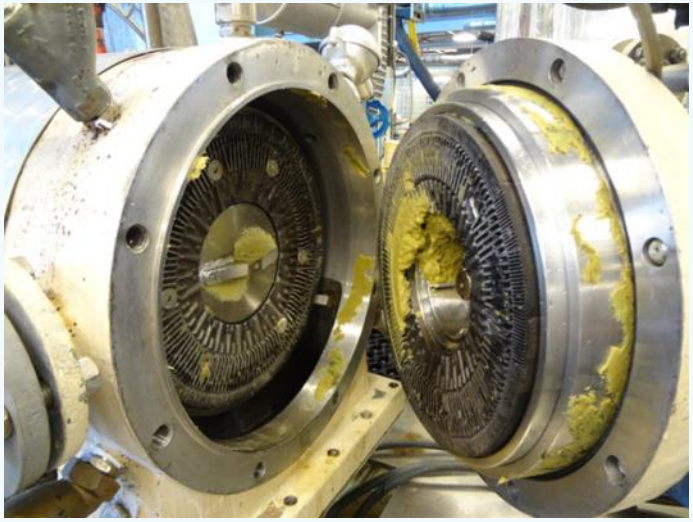
- food
- feed
- energy
- materials
- chemical building blocks

Classification non-food applications

Green resources supply us with:

- Materials:
  - *fibres* for paper, fabrics and composites
  - *wood* for timber and energy
- Substances:
  - *starch* for plastics, glues and additives
  - *bio-oil* for paints, inks and transport fuels
- Chemical building blocks:
  - *lactic acid* for additives and polymers
  - *ethanol* for fuel and plastics
  - *furans* for resins and fuels

Tomato stems for cardboard



Dia: Edwin Keijsers

What can we do with biomass

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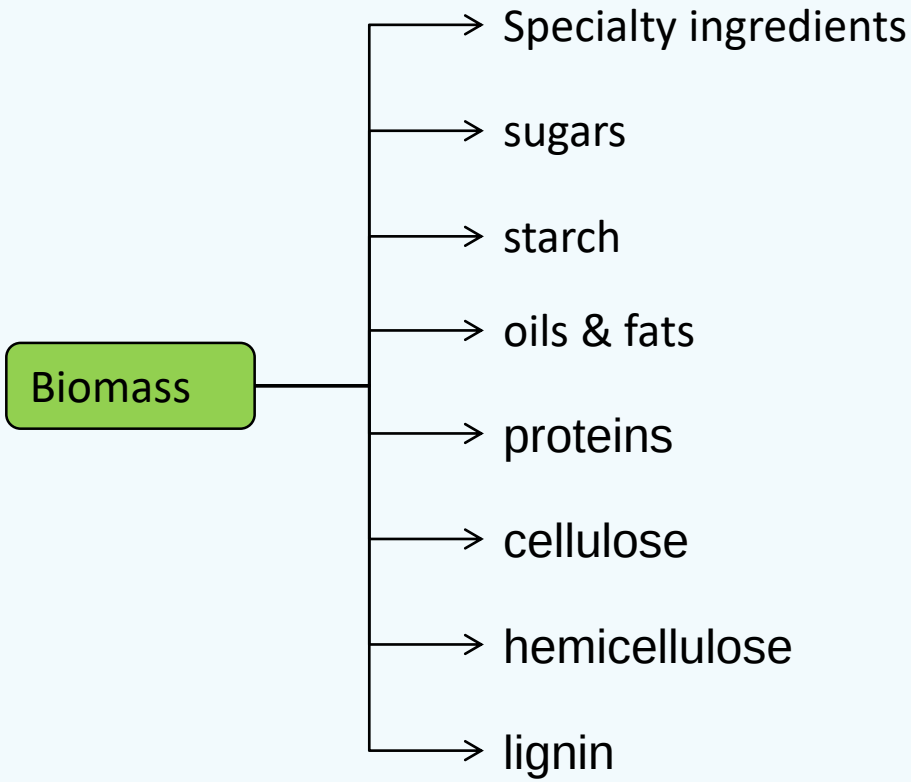

Application:

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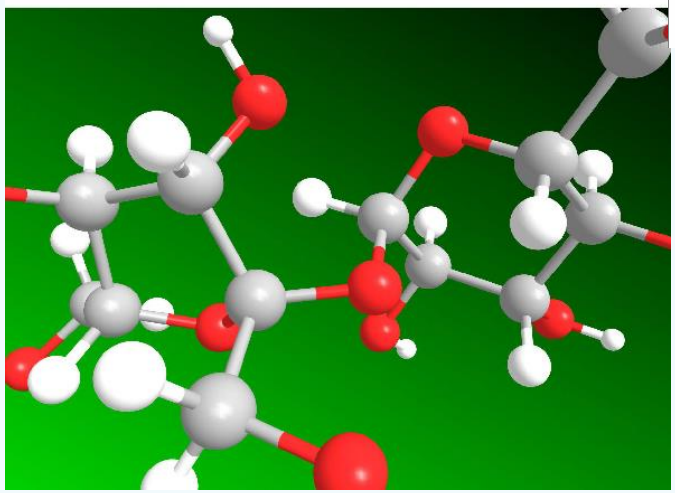
C*an* we replace all petrochemical products

Green building blocks for biobased plastics

PAULIEN HARMSEN AND MARTIJN HACKMANN

WAGENINGEN UR
For quality of life



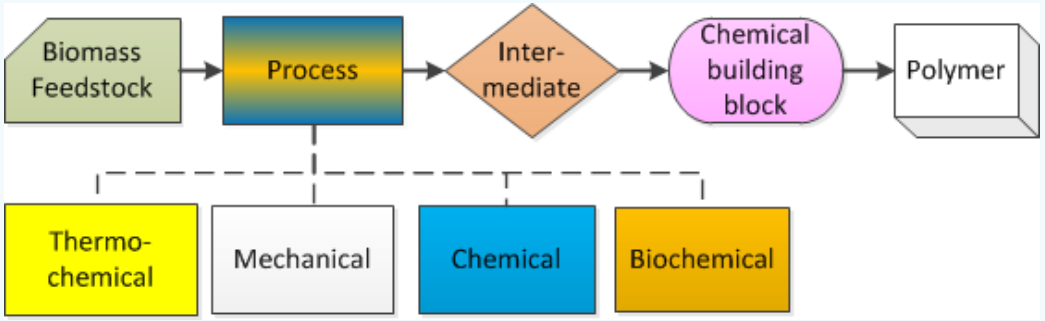
Perspective

Biofpr
Biofuels Bioproducts & Biorefining

Green building blocks for bio-based plastics

Paulien F. H. Harmsen, Martijn M. Hackmann and Harriëtte L. Bos, Wageningen UR-FBR, the Netherlands

Received August 5, 2013; revised November 25, 2013 and accepted November 29, 2013
View online at Wiley Online Library (wileyonlinelibrary.com); DOI: 10.1002/bbb.1468;
***Biofuels Bioprod Bioref* (2014)**



Yes, we can

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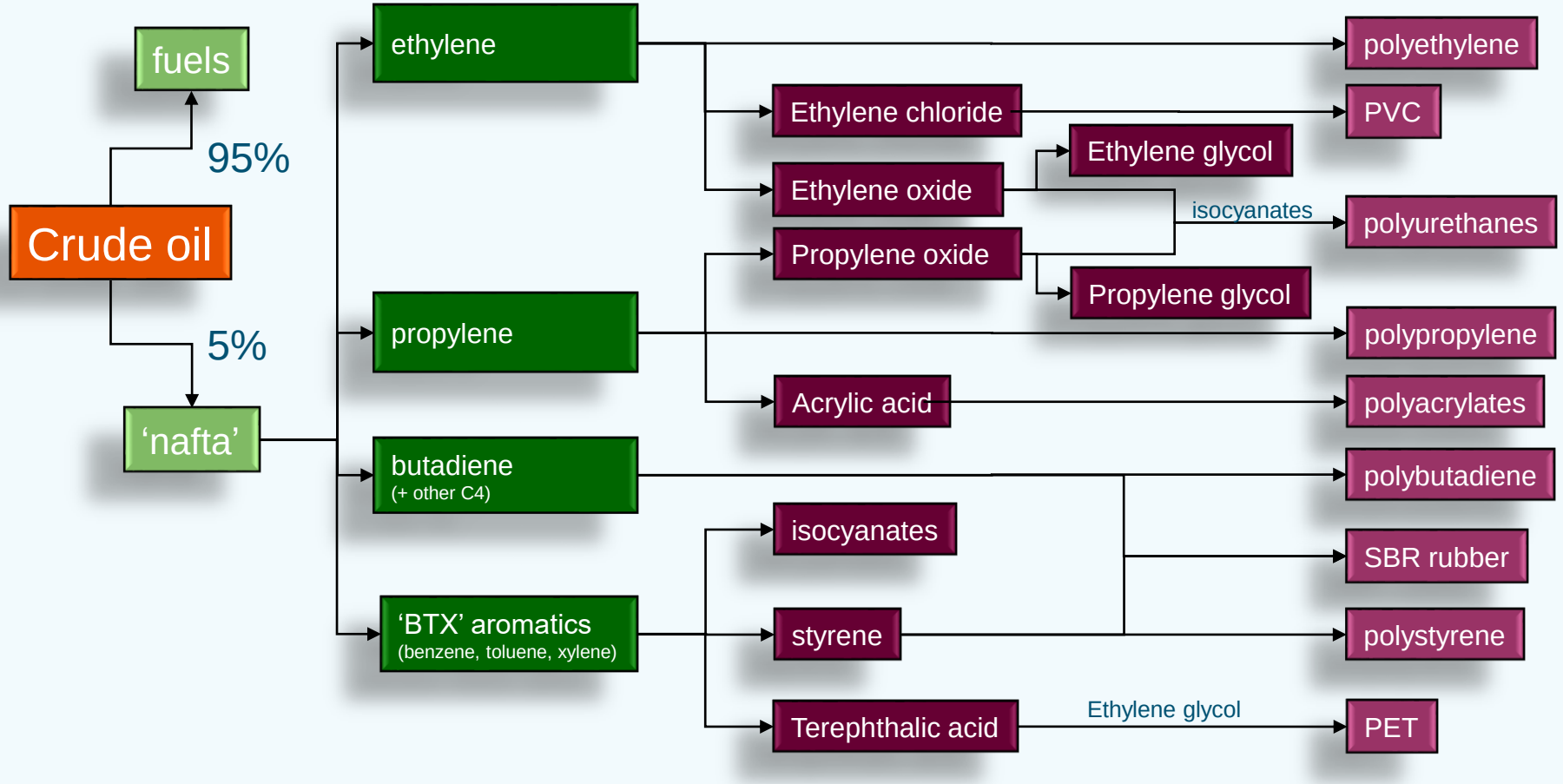
Present petrochemical industry

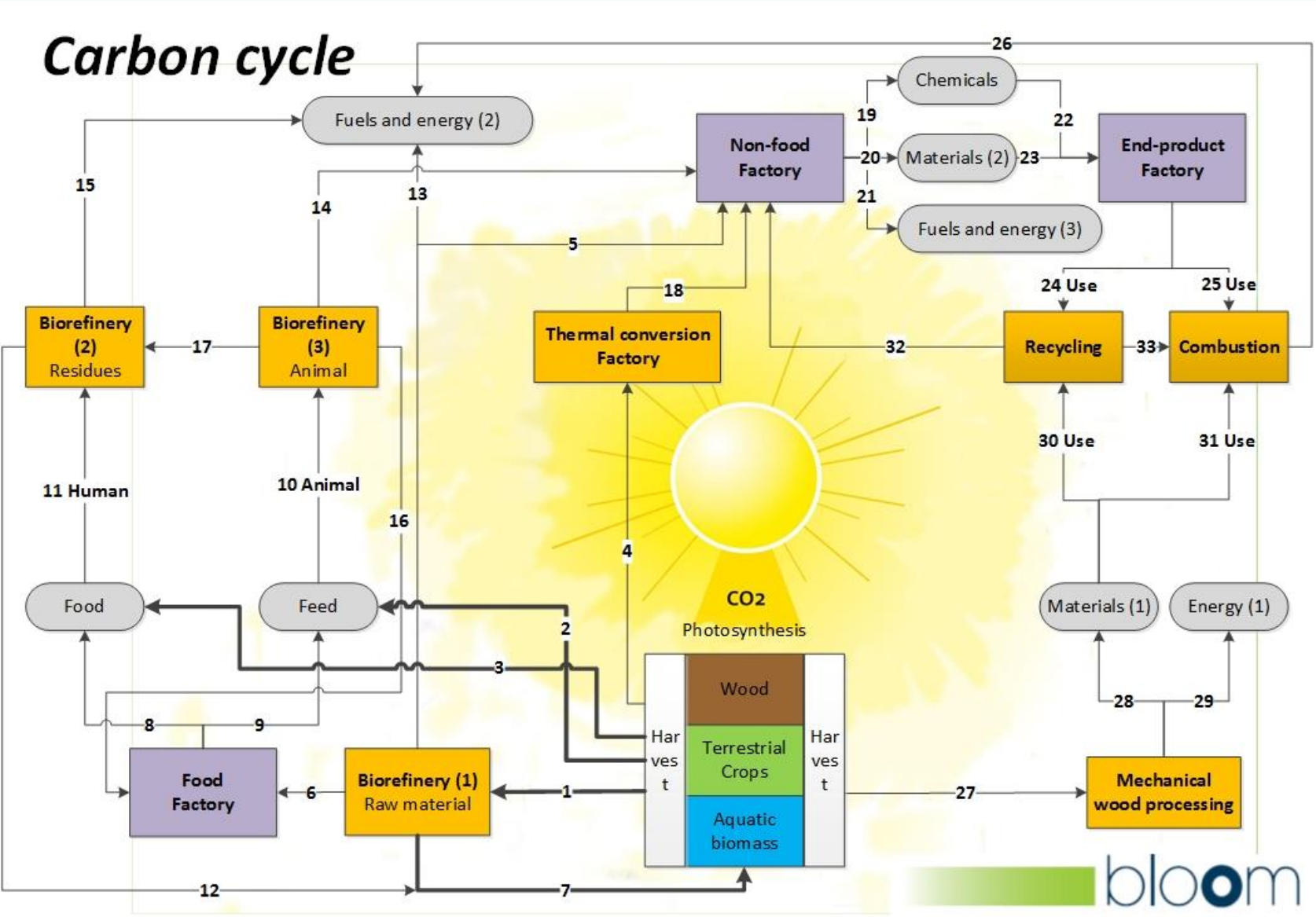
- Based on only few ‘platform chemicals’



Drop-in versus new products

- **Drop-in** chemicals presently mainly based on sugars or vegetable oils.
  - Drop-in chemicals: current industrial infrastructure
  - Bio-based plastics:
    - Same processing characteristics and properties
    - Established market
    - Recycling in current separation process
- **New** bio-based chemicals:
  - New building blocks (difficult/impossible from fossil)
  - New biobased plastic with unique characteristics
  - New market

General overview of the bioeconomy



Paulien Harmsen, Jelle van Leeuwen, Harriette Bos, WFBR

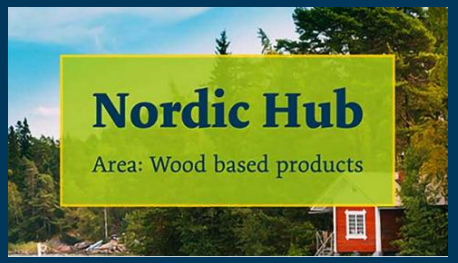
BLOOM Hubs

- Bloom hubs focus on different parts of the bioeconomy scheme

- Bloom hubs relate to the regions by focusing on subjects within bioeconomy that are relevant for that region

BLOOM hubs

Five **BLOOM hubs** form communities of practice. They are led by consortium partners who invite and involve network partners, such as regional triple helix partners and other bioeconomy stakeholders.



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BLOOM hubs

Interview with

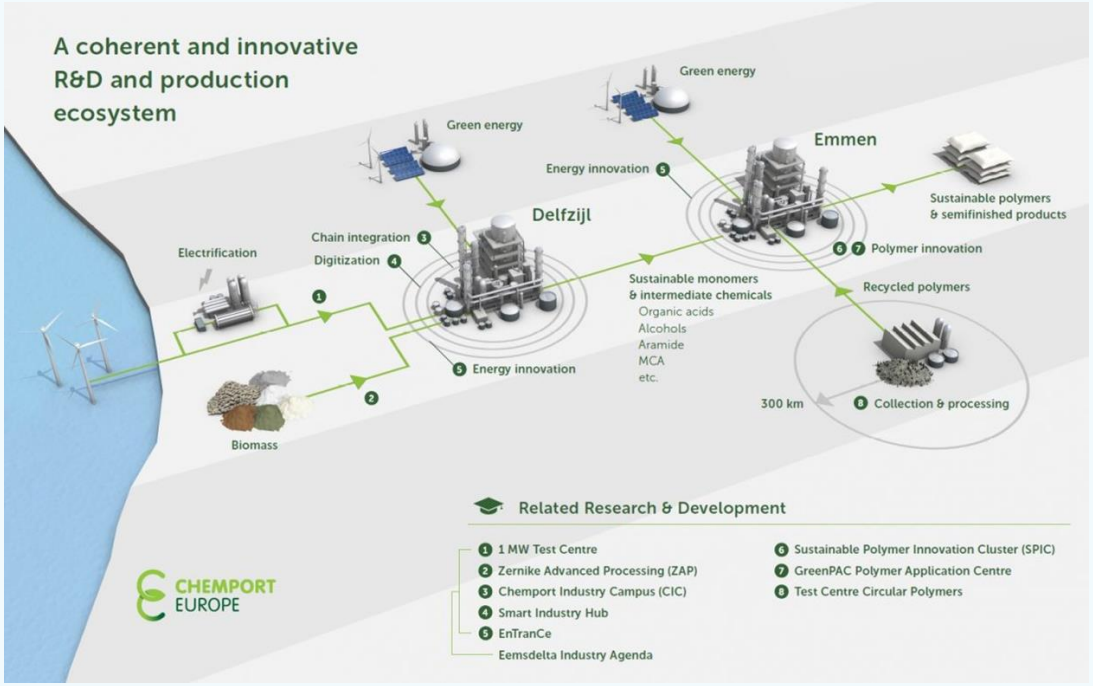
Remco Kranendonk (Dutch hub, WR)

Norbert Steinhaus (German hub, WILAB)

Regional Hub North of the Netherlands

Regional Innovation Strategy

- Bioplastics – focus on yarn production
- Wood and sunflower oil – BioBTX – Glycerine – Terephthalic acid – Aramide yarn
- Recycling: rPet
- Potentials on valorisation of sugars (beets)



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WAGENINGEN UNIVERSITY & RESEARCH

Regional Strategy

Facilities:

- Emmtec Industry & Business Park
- Chemport Industry Campus Emmen
- BERNN – cluster of research and education partners
- NHL Stenden Biobased Lab facility

Sustainable Fibers and products:

- bioPET30 and bioPET100 (EFRO project bioBTX)
- PLA yarns (compostable tie up yarn)
- PBS bio degradable yarns
- rPET industrial fibers (ropes, nets, small fabrics)
- rPET carpet yarn (BCF)
- rPET textile Yarns (fine titer)
- rPET flame out yarns



Stakeholders

Who is active in BLOOM – from triple helix to quadruple helix

- Government (Municipality of Emmen, Provinces of Drenthe and Groningen)
- Research and educational institutions: NHL Stenden HEI, vocational training
- CSO: IVN, NMF, SBB environmental
- Business: Emmtech Campus
- Intermediates: organizers of sustainable events
- Communication specialists

Identified Barriers and Needs

- Reach out to general public
- Biobased economy school modules
- Scale up business activities
- Attract talent, investments
- Enhance the regional profile

Co-Creation and Outreach

- Educational materials for schools and students in Emmen region
- Masterclass for different target groups
- Gallery Walks: exhibition with information panels about bioeconomy in general and bioeonomy in Emmen Region
- Biobased cups at events and festivals
- Dutch Design Week: www.ddw.nl

Contact - Links

Hub Coordinator

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Remco.Kranendonk@wur.nl

https://www.chemport.eu/
www.greenpac.eu/en/

Stay tuned – Join – Participate!

Interview questions

BLOOM hubs

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Interaction

Questions and answers

Interact with BLOOM

Visit our Stand Green 04

Thank you and stay connected!

Stay updated how BLOOM is engaging EU citizens and civil society in the bioeconomy via the project website, our newsletter and social media:

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Podcasts on Spotify

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