



## *Introduction of Biobased Delta*



# Growing a Green Future



Agro meets Chemistry

Rop Zoetemeyer  
15 June 2017

Stichting Biobased Delta  
[www.biobaseddelta.nl](http://www.biobaseddelta.nl)

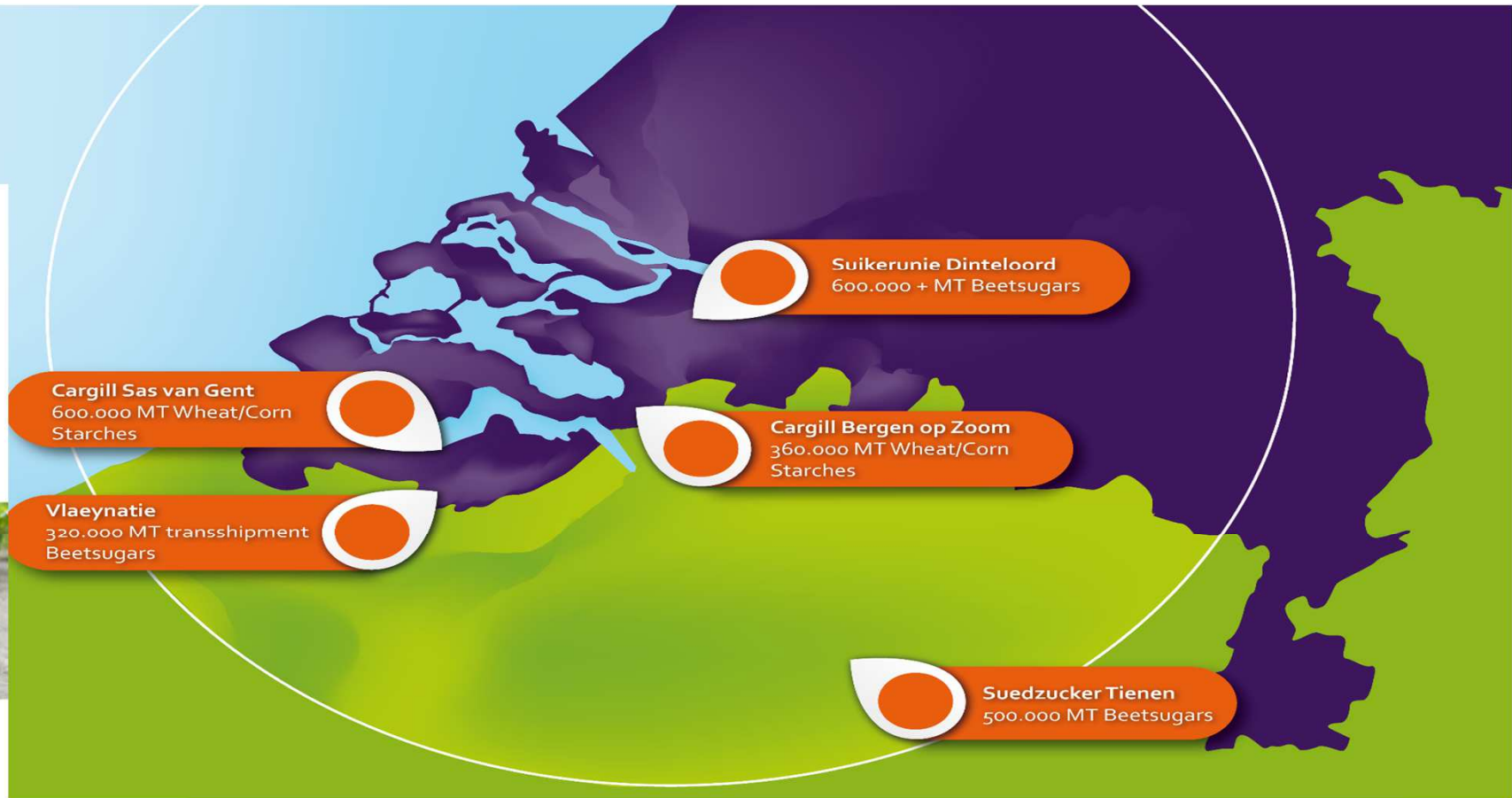
# *Biobased Delta region*



Agro meets Chemistry



# Over 2 million tons of sugars and starches produced within a 100 km radius

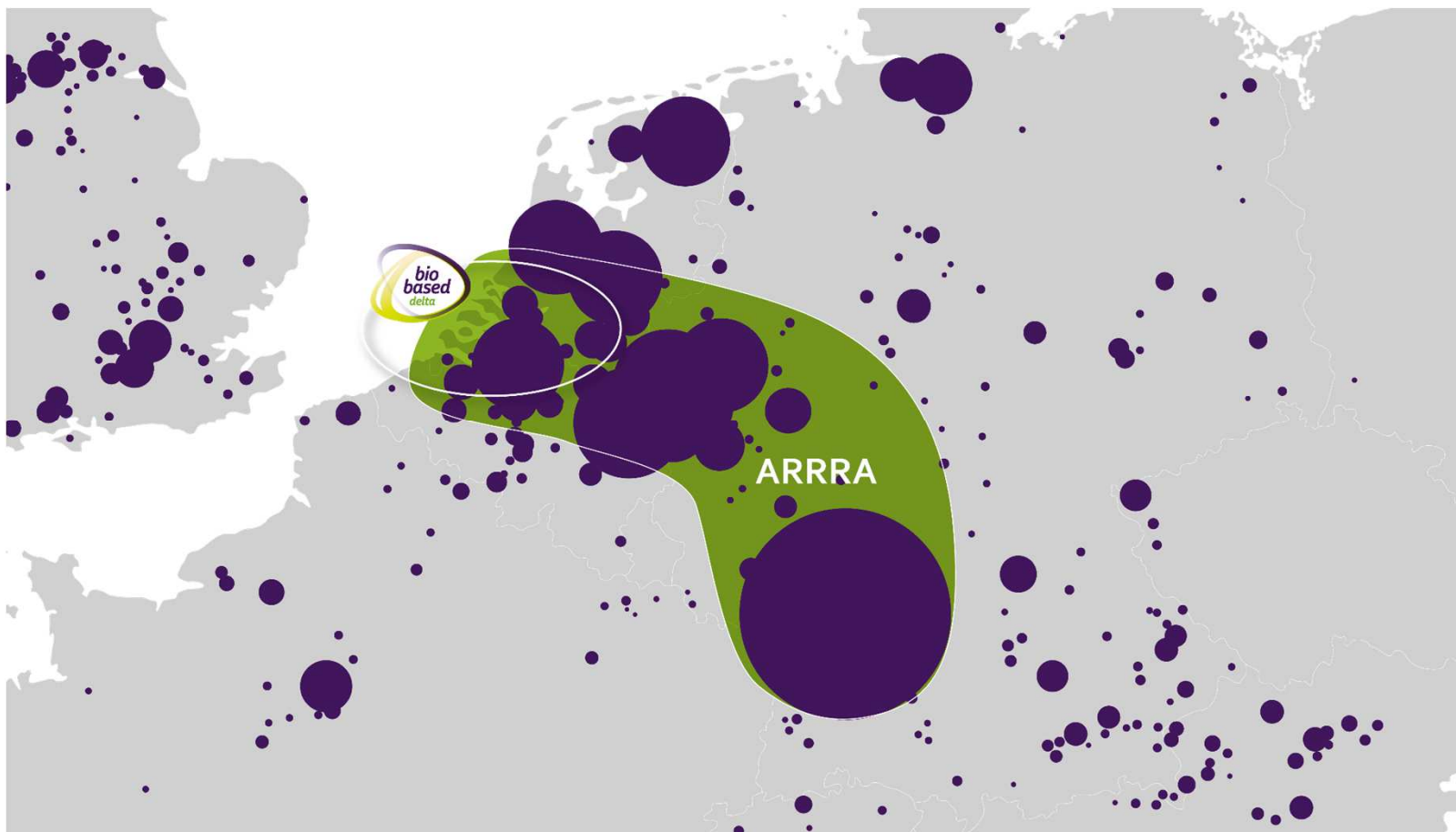


Deloitte.

Opportunities for the fermentation-based chemical industry  
An analysis of the market potential and competitiveness of North-West Europe



Antwerp, Rotterdam, Ruhr, Rhein Area  
covers 40% of Europe Chemical Industry





# Biobased Delta eco system



The Foundation Biobased Delta is a Triple Helix Public-Private Partnership covering all relevant organizations in the area needed to do successful development, innovation leading to investment:

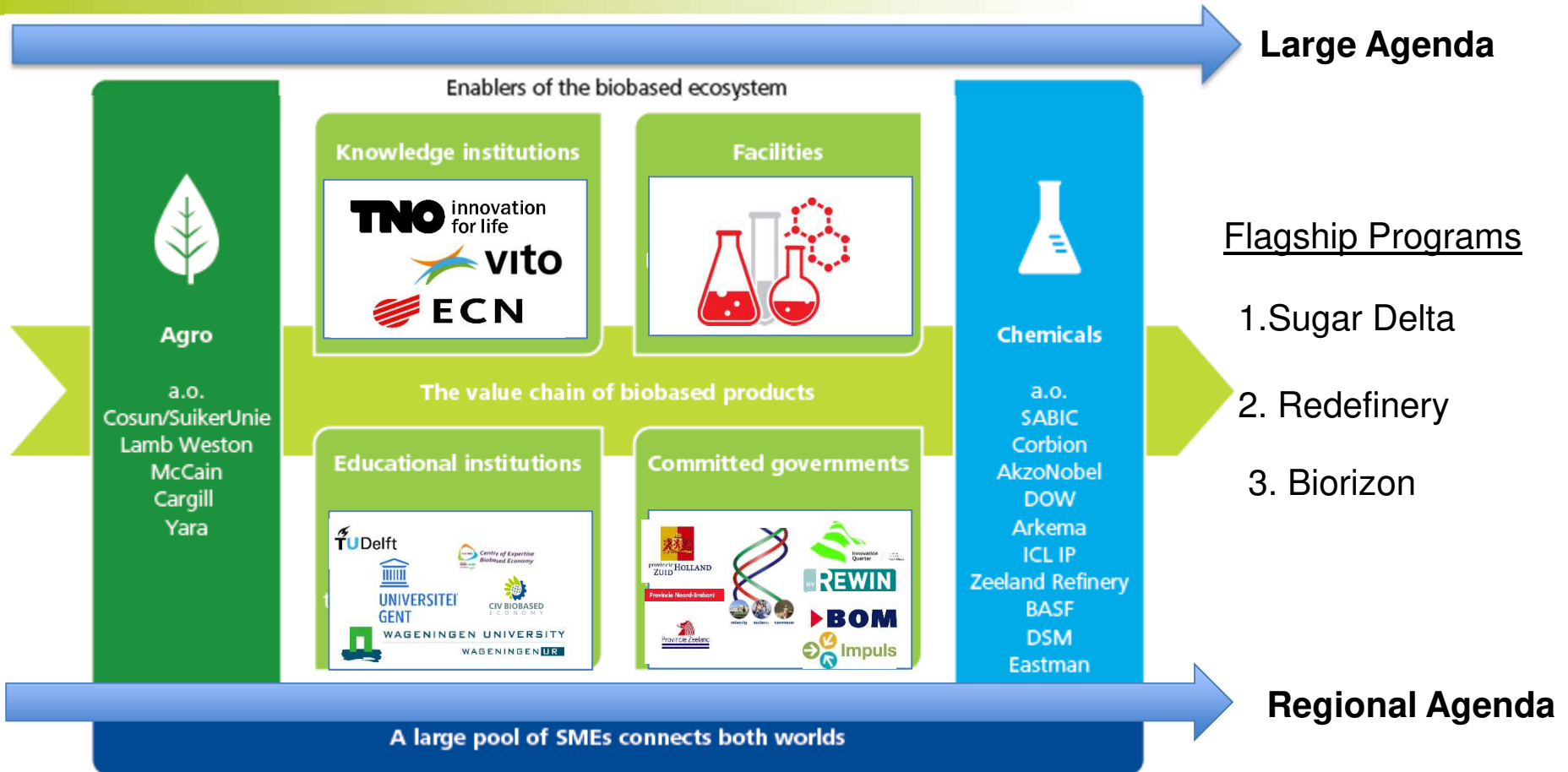
- Local, regional and central government
- Port authorities
- Regional and national development agencies
- SME's and major companies based in the region
- Other PPP's and cooperation projects
- Academia - Applied Sciences
- Industrial sites
- Top locations,

## Key Flagship programs

1. Economic value of carbohydrates (Sugar Delta)
2. Biorefinery wood pellets/chips (Redefinery)
3. Sugar and lignin to Bioaromatics (Biorizon)
4. SME driven regional programs (9 programs, clusters)

**We help companies to recognize the unique biobased opportunity that the Biobased Delta region offers.**

# Agro meets Chemistry : stakeholders, enablers, interactions and agenda



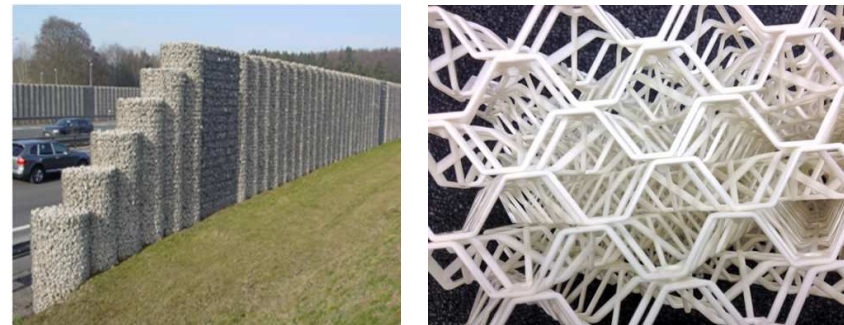
# Regional Agenda's – per province



SME Driven



Practical examples



Clusters / Focus areas:

Packaging, Horticulture, Infrastructure & Construction, Plant Ingredients, Habitat systems, Natural Fibers, Natural Coatings & Coloring Agents, Algae & Seaweed, Biobased Purchasing.

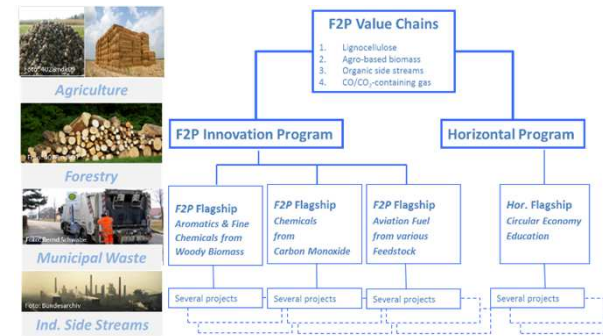
# International Collaboration



- Netherlands- Flanders



- BIG-C



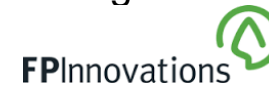
- 3BI Intercluster



- Bio Industrial Innovation Canada



Focus: lignin valorization



- Living Labs Brasil





# Knowledge Infra: Top locations



## Application Centers



Port of Rotterdam



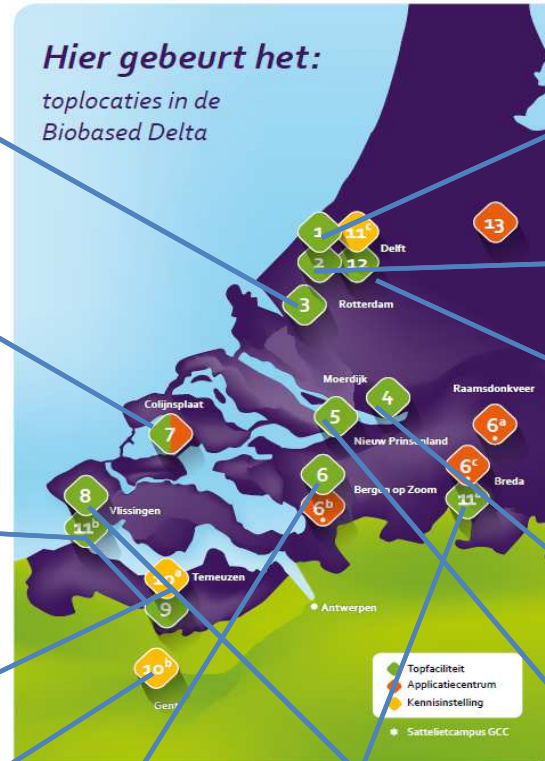
Agri Innovation Center  
Bio Innovation Garden



Zeeland Seaports



Biobase Europe



GCC



CoE BBE



Bio Proces Facility



Campus Delft



Knowledge center  
Plant Ingredients



Port of Moerdijk



Nieuw Prinseland



6a - Natural Fibers



6b - Living Color



6c- Biopolymers



13-Veenweide -Dairy



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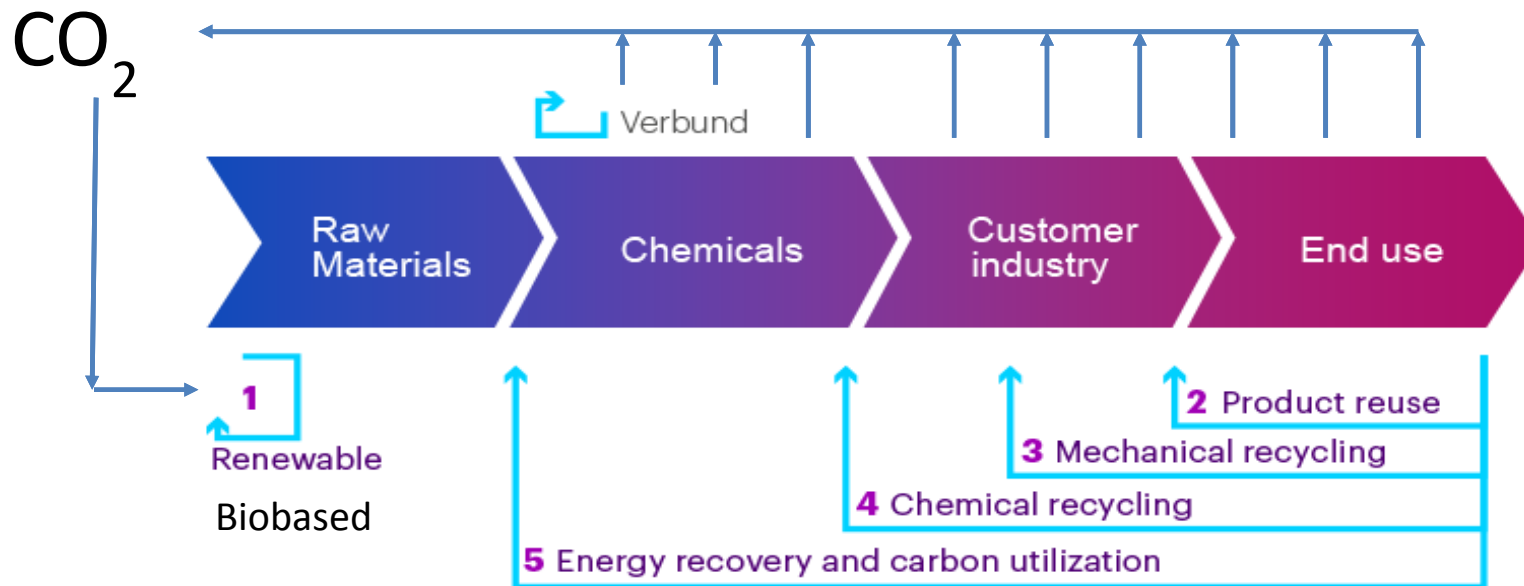


## *Annex: Goals and actions for creating BBE*



- **Netherlands:** 20% biobased feedstock and 10 % circular feedstock (recycle) in 2030 in the Dutch chemical industry (VNCI- Top sector Chemical Industry)
- **Lessons learned:** need operation of scale, smart integration of all streams and optimum product mix with cross-sectorial, cross-market approach
- Just replacement of fossil feedstock by biobased and circular feedstock is not attractive. There needs to be a growth agenda connected to the transition
  - ➔ **Innovative products, new markets, new & extended value chains**
- Growth agenda is typically tied to the **societal mega-trends:** ageing population, urbanisation, low carbon economy, new ways of mobility
- Challenges are so big that **collaboration** is not an option, but a **MUST**

# Annex: Coupling Circular to Biobased Economy



up to **70%** of the European chemical industry molecules provided to customer industries and end-users can be recirculated using all five loops.

Source: Accenture Report 2017 CEFIC