



Circulair Congres:
Agrifood, chemie en
energie samen naar een
circulaire economie

RWE
TKI•BBE



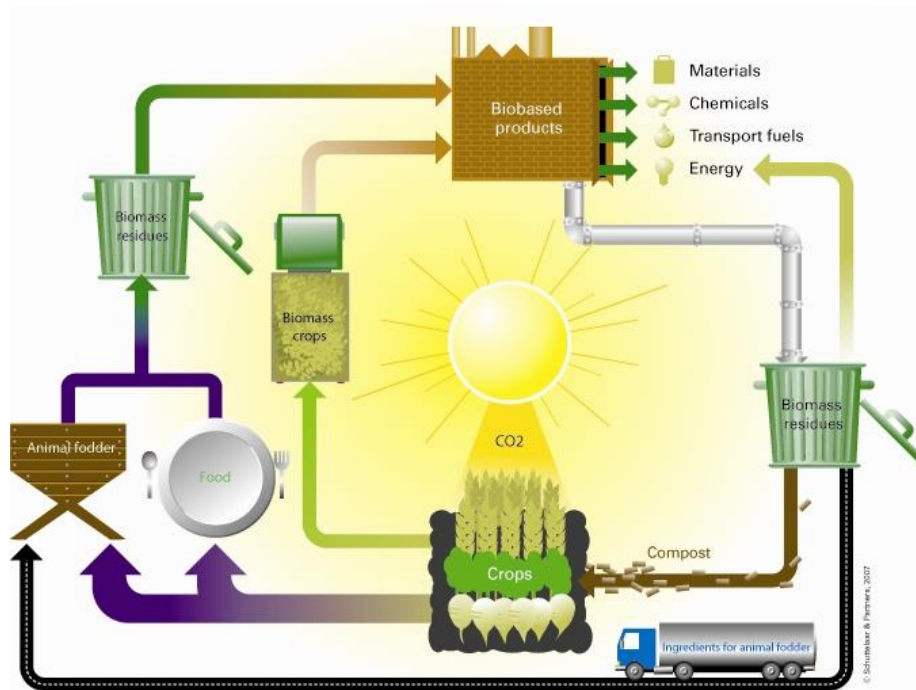
BCB Platform en BioBased Delta

What are the plans for Biomass in the Netherlands?

Willem Sederel

- Boardmember Biobased Delta
- Biobased Circular Business Platform
- Transition Team Biomass & Food

14 March 2018



BioBased
Economy



Biobased Delta eco system



Biobased Delta is a 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 (program clusters)

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



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Ministry of Economic Affairs

Biobased Circular Business Platform

Increase Perspectives BBE in **The Netherlands**

With support from

RVO

VNCI

DBC



Vereniging Afvalbedrijven
Partner in de circulaire economie



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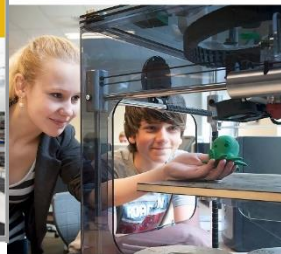


A Circular Economy
in the Netherlands
by 2050

Biomassa 2030
Strategische visie voor de inzet
van biomassa op weg naar 2050



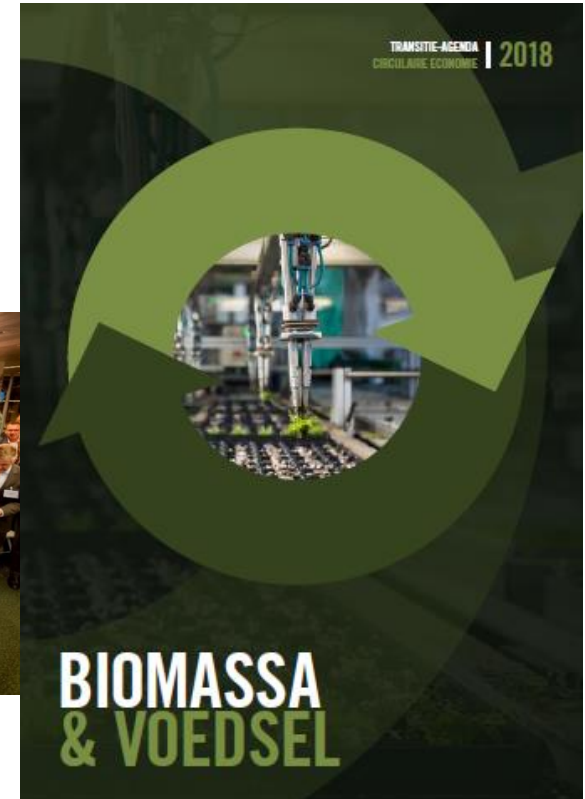
Biomass 2030



Point on Horizon



National Agreement CE



Transition Agenda

2014





2015

2016

2017

2018

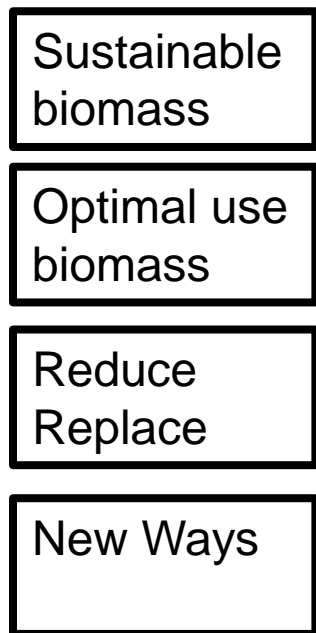


- Biomass contributes to NL needs for: food, feed, energy, transport, feedstock chemicals and materials 
- Potentially sufficient biomass available, if: 
 - effort to grow the amount of biomass
 - optimal use of biomass (**no waste & cascading**)
- Biomass makes important contribution to CO₂-reduction, energy transition and circular economy 
- Longer term focus on areas where cost effective, sustainable alternatives lack: 
 - food/feed
 - feedstock for chemicals and materials
 - high temperature heat for industry
 - biofuels for aviation, long distance sea and road transport

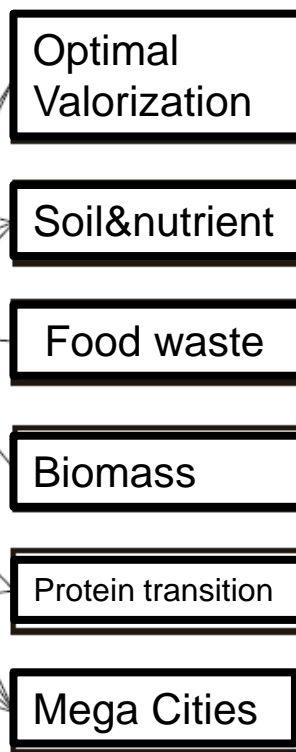




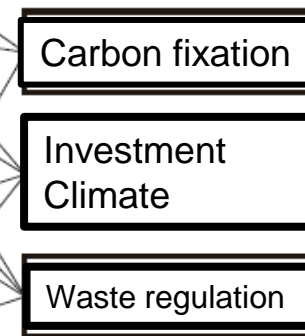
4 STRATEGIC GOALS



6 LINES FOR ACTION



3 LINES FOR BOUNDARY CONDITIONS



Public
Private
Partner
ship
Value
Chain



Figuur 4 Overzicht strategische doelen en inhoudelijke/randvoorwaardelijke actielijnen



1. Sustainable and renewable production of sufficient biomass

- far reaching closure of nutrient cycle and sufficient carbon in soil
- scale is as small as possible and as large as needed
- local, regional, national, European, Global

2. Optimal use of biomass and food.

- all feedstock and intermediates remain as long and as high in the cycle,
 - high end use of biomass and recycling of side streams and residues.
 - cascading and multiple valorization contributes to efficient biomass use
 - complete use of feedstock
 - counteracting food spillage and waste
 - prevention of waste
- Diagram illustrating the flow of biomass and food use:
- Cascade (indicated by a blue vertical bar and a bracket on the right side of the list)
 - No Waste (indicated by a blue vertical bar and a bracket on the right side of the list)

3. Reducing the use and replacement of non-renewable by renewable feedstock

- Recycling
- sustainable produced biomass

4. New ways of production and consumption for biomass and food

- improvements
- structural change in trend



Action lines with goals, interventions and instruments

- ☐ Increase supply of sustainably produced biomass
- ☐ Circular and renewable use of soil and nutrients
- ☐ Optimal valorization of biomass, residues and co-streams into circular, biobased products
- ☐ Reduction in food waste
- ☐ Promotion of protein transition towards more vegetable protein
- ☐ Feeding and greening megacities as Dutch business model





- Biomass refers to biological fraction from:
 - crops, products from agri- and horticulture
 - rest- and waste products
 - residues of agriculture – incl. plant and animal substances-
 - forest industry
 - fisheries
 - aqua culture and related sectors
 - biogenic fraction of industrial and municipal solid waste
- In scope is the valorization of crops, residues and rest streams that are created during production and conversion in the value chain
- It concerns biogenic streams available during production, conversion, storage, transport, consumption en waste treatment.



2017- 2020

End EU sugar quatum
20% more production:
70 → 85,000 ha
White sugar 16 to 18%
90 t /ha biomass
16,2 t/ha white sugar
6 t/ha sugar beet pulp
And next leaves ??







Biomass in Netherlands



Examples residues







Scale:

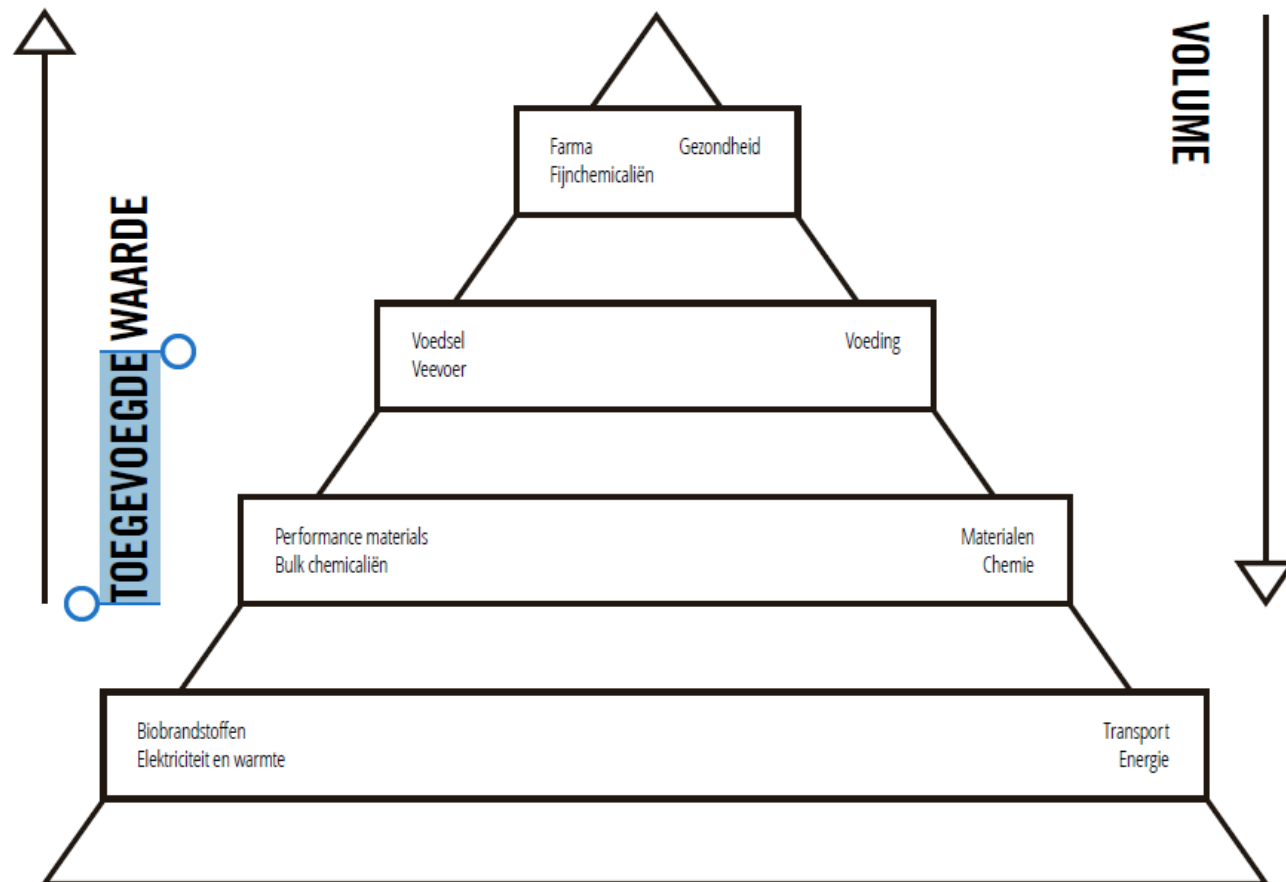
As
small
As
Possible

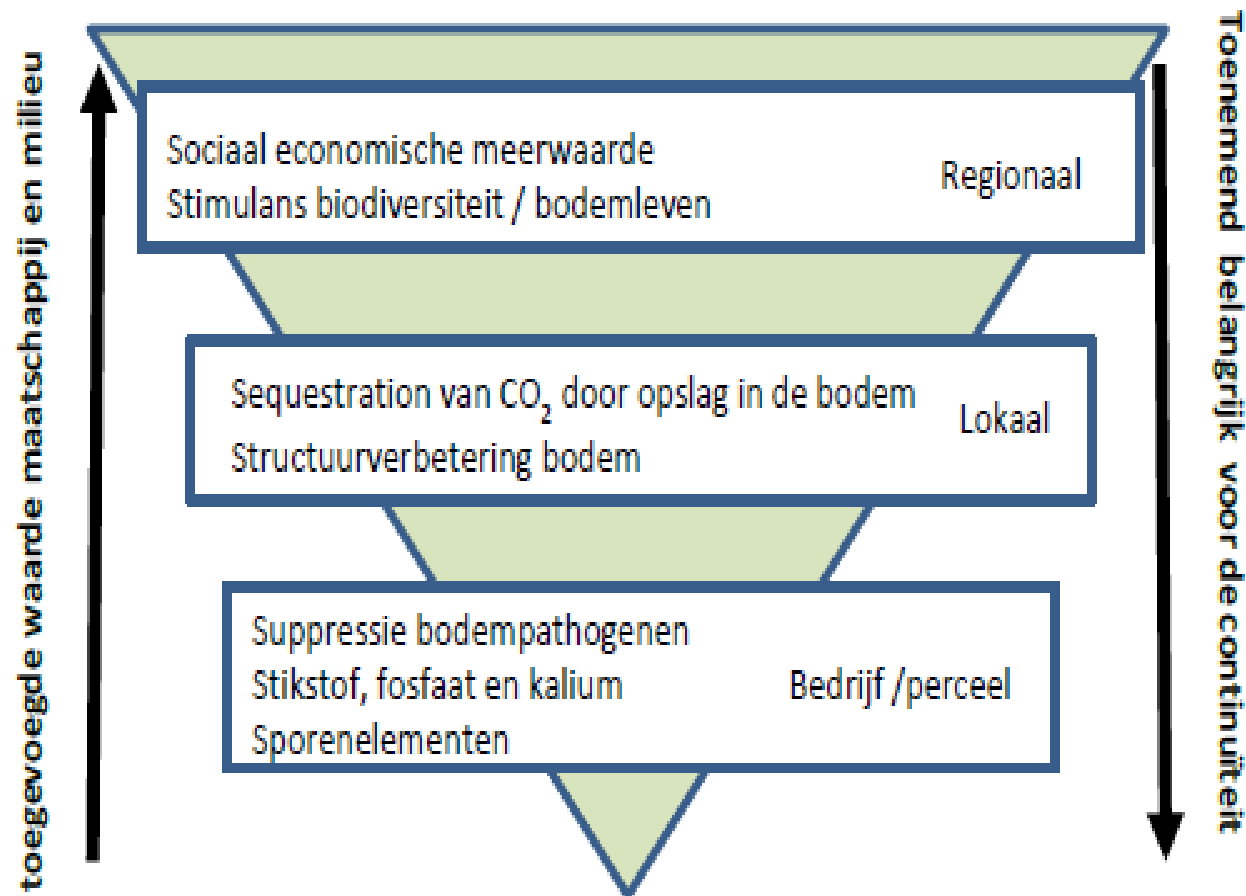
As
Large
As
Needed

Figuur 1. Kritische kringlopen bij toepassingen van biomassa.



TRANSITIE-AGENDA
CIRCULAIRE ECONOMIE | 2018





Figuur 3: De ondergrondse waarde piramide



DNV·GL

Biomassapotentieel in Nederland

Verkennde studie naar vrij beschikbaar biomassapotentieel
voor energieopwekking in Nederland

gasunie
crossing borders in energy



Paula Schulze, Johan Holstein, Harm Vlap



- ***NLcontext-well positioned–urgent need–limited biomass increase***
- Cosun, wood & forest sector, RWS (public domain) execute plans
- Innovation in production (modification & selection), and efficiency (yield)
- Stimulation novel non-soil based crops (aquatic, containerized, vertical)
- No waste & cascading of biomass needed: Food>Feed>Materials>Energy
- Slow↑market demand for more biobased products perceived as hurdle
- Outlook till 2030 looks reasonably balanced, questions > 2030-2050
- Organic waste, incl. sludge & manure (Feedstock of future, **W2V, W2A**)
- Emancipation laws and regulations urgently required, NL and EU
- Closing the loop, @ right scale: small as possible, large as needed
- ***EU&global context- import–production outside NL-influence(GBL)***
- Opportunities in marginal and degraded land, particular in EU
- Sustainable production biomass defined -food supply,soil,water,air,social
- Dutch science, knowhow and track record important value abroad