

REGIONAL BIOECONOMY PROFILE

FLANDERS (BE)



POLICY

Structure of the Bioeconomy Institutional system

Info source: Region

Responsible Regional
Authorities / Agencies

Department Economie, Wetenschap en Innovatie
Department Economy, Science and Innovation -
www.ewi-vlaanderen.be

List of " bioeconomy-relevant" regional policy initiatives

Regional Bioeconomy Smart Specialisation Strategy	The vision and strategy of the Government of Flanders for a sustainable and competitive bioeconomy in 2030 http://www.flanders.be/en/publications/detail/bioeconomy-in-flanders
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REGIONAL BIOECONOMY RELATED POLICY INITIATIVES

BIOMASS PRODUCTION

- ✓ Biomass inventory 2011-2012: OVAM (no EN ref)
- ✓ Duurzaam Materialenbeheer: sustainable materials management including the bio-economy
<http://www.vlaamsmaterialenprogramma.be/documents/19/c3fb688b-77a1-4d9a-825d-f1aff24f5d67>

BIOMASS CONVERSION

- ✓ FISCH – Flanders Innovation Hub for Sustainable Chemistry www.fisch.be/en
- ✓ KET roadmap Industrial Biotechnology (October 2014)
- ✓ Biobase Europe pilot plant (www.bbeu.org)
- ✓ Flemish action plan renewable energy 2020

ADDITIONAL REGIONAL POLICY INFORMATION

- ✓ Study on value creation from biobased industry:
<http://www.vlaanderen.be/nl/publicaties/detail/duurzaam-gebruik-van-en-waardecreatie-uit-hernieuwbare-grondstoffen-voor-de-biogebaseerde-industrie-productie-zoals-1>



RESEARCH

R&D Investments (public and private sector)

REGIONAL PUBLIC R&D INVESTMENT in Bioeconomy (year 2011)

Info source: Eurostat/Region

Data were used from the R&D-survey on spendings in the year 2011, performed in the public sectors Higher Education Sector (HES) and Government Sector (GOV). Data were then refined to Field of Science "agricultural sciences". This is one of the 6 Fields of Sciences used in the survey and considered to be most appropriate to serve as a rough first proxy for R&D in bio-economy. Further breakdowns to the themes of biomass production or conversion was not possible with these data.

The result in Flanders in 2011 is the following: public research actors (HES and GOV) spent 140 million euro in the Field of Science "agricultural sciences". This represents 8,8% of the total spending in these sectors (in all Fields of Science).

GBOARD data are not used here as it is difficult to make a breakdown to the themes of biomass production or conversion.

R&D investment related to :

Biomass production	N.A. M EUR
Agriculture	
Forestry	
Marine	
Waste	
Biomass conversion	N.A. M EUR
Food/feed use	
Energy use	
Industry uses	

PRIVATE R&D INVESTMENT in Bioeconomy (year 2011)

Info source: Eurostat + Industry

Data were used from the R&D-survey on spendings in the year 2011 performed in the private sector Business Enterprise Sector (BES). Data were then refined to NACE divisions related to biomass production codes (A-D01,D02,D03), biomass use codes in biobased sectors (C-D10, D11, D12, D15, D16, D17), and biomass use codes in hybrid sectors (C-D13, D14, D20, D21, D22, D31, D32, D35, D38).

Private research actors' (BES) spending on R&D in 2011 could only be very roughly estimated:

✓ **In Biomass production sectors:**

There is not enough detailed data to differentiate between D01, D02 and D03, so an estimate was made for the three combined and also including D38 (waste):

about 0,6 to 1,7% of the R&D-spending in the private sector was made by companies in biomass production sectors. This represents a budget of roughly 30 million euro.

✓ **In Biomass use sectors – 100% bio-based:**

The selection of sectors does not match the one that is proposed here, but a rough estimate is that maximum 10% of the R&D-spending in the private sector was made by companies in biomass use sectors – 100% bio-based. This represents a budget of roughly 300 million euro, but reality will probably be lower.

✓ **In Biomass use sectors – hybrid sectors:**

The selection of sectors does not match the one that is proposed here, but a rough estimate is that maximum 43% of the R&D-spending in the private sector was made by companies in biomass use sectors which are hybrid. This represents a budget of roughly 1.300 million euro, but this is definitely not solely related to bio-economy. If the sectors of chemistry and pharmacy are left out of this selection, the spending drops to about 10%, or 300 million euro.

For instance R&D investment related to:

Biomass production	N.A. M EUR
Agriculture	
Forestry	
Marine	
Waste	
Biomass conversion	N.A. M EUR
Food/feed use	
Energy use	
Industry uses	

R&D Programmes in Bioeconomy

EUROPEAN R&D ACTIVITIES in Bioeconomy

Info: Regional Participation in FP6, FP7, KBBE, H2020 projects in Bioeconomy or related

Listing of Regional Participation in EU bioeconomy R&D projects:

In FP7-KBBE (till February 2014 on cordis) 71 Flemish institutions (universities, research organizations, industry, KMO, NGO) took part 232 times in 147 projects.

Examples of EU bioeconomy R&D projects for the Region:

Biobase Europe (pilot plant in Flanders and education centre in the NL) was the most important Interreg project with 21 M EUR dotation. Other Interreg projects are : ARBOR, Bi-obase NWE, etc.

Participation in other EU bioeconomy R&D projects:

EU R&D funding projects (FP7/KBBE)	EC Contribution	70.9 M EUR
EU regional development funding (ERDF)	EC Contribution	xx M EUR
EU rural development funding (Tot. 2012)	EC Contribution	98.5 M EUR



NATIONAL/REGIONAL R&D Activities in Bioeconomy (year xxxx)

Info: Regional Activities funded by MS or Region (no EC funds)

Listing of Regional Bioeconomy Research Pogrammes:

- ✓ In the frame of Flanders' New Industrial Policy (which works towards defining the factory of the future, more sustainability and a greener economy in Flanders – FISCH (Innovation Hub for Sustainable Chemistry) was founded. FISCH – call for proposals: more than 60 % of projects are related to the BE: microalgae, biopolymers, renewable chemicals, valorization of side streams, etc.
<http://www.fi-sch.be/en/programs/program-overview/>
- ✓ There are no other specific research programmes for the bio-economy but support is given by governmental funding agencies in open calls and by VIB (Institute for Biotechnology, www.vib.be), MIP (Environmental Innovation programme), and VITO (Institution for Technological Research: energy, environment, industrial innovation, www.vito.be); also GBEV (Ghent Bio-economy Valley, www.gbev.org), a public-private partnership, promotes the bi-based economy through collaborative programs and joint initiatives.

Examples of Regional Bioeconomy Research Projects:

- ✓ Visions (<http://www.bbeu.org/visions>)
 - ✓ Biocluster (<http://www.bbeu.org/biocluster>)
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MARKETS

References to existing Market Studies/Forecasts about Bioeconomy

Figures Sectors for the Flanders Region		Enterprises Number*	Employment Number (fte)	Value added M EUR
<i>Date Source</i>		01/01/2014 (ADS/SVR)	31/12/2011 (INR)	31/12/2011 (INR)
Biomass production		31270	16776	1397.40
A- D01	Crop and animal production, hunting and related service activities	30713	16186	1325.60
A- D02	Forestry and Logging	386	222	24.80
A- D03	Fishing and Aquaculture	171	368	47.00
Biomass use – 100% bio-based		7261	103303	7329.40
C-D10-12	Manufacture of food products, beverages and tobacco products	5344	63086	4726.80
C-D13-15**	Manufacture of textile, clothing, leather, and related products	112	24428	1254.20
C-D16	Manufacture of wood and cork, except furniture	1567	7194	526.00
C-D17	Manufacture of paper and paper products	238	8595	732.40
Biomass use - hybrid		6609	99840	13946.20
C-D20	Manufacture of chemicals and chemicals products	467	34487	5427.90
C-D21	Manufacture of basic pharmaceutical products and preparations	84	9376	1348.80
C-D22	Manufacture of rubber and plastic products	641	18460	1471.30
C-D31-32	Manufacture of furniture; other manufacturing	4098	16634	1100.30
C-D35	Electricity, Gas, Steam and Air Conditioning supply	433	10094	3398.30
C-D37-39	Waste collection, treatment and disposal activities; material recovery	886	10789	1199.60
Total Sectors above		45140	219919	22583
Total all sectors		497546	2173700	189805.20

* Underestimated: the figure only includes enterprises that have to declare TVA

** Textiles and clothing belong to the hybrid sectors, but could not be separated from the available data, except for enterprises number

Sources: INR (Institution for National Accounts in Belgium); ADS (Statistics Belgium); SVR (Statistics Office Flemish Government)

i GENERAL INFORMATION

Main/Regional economic and social indicators (source Eurostat/DG REGIO)

Info source: Eurostat

REGIONAL DEMOGRAPHY (2013)

Number of inhabitants	people	6 404 726 p
Population by age group	Share of total population (%)	27.9 % (<25)
		53.4 % (25-64)
		33.6% (>64)

REGIONAL ECONOMY (2011)

GDP	M EUR	212 354 M EUR
GDP per head	Euro per inhabitant	33 600
GDP per head	Euro per inhabitant in percentage of the EU average	134
GDP PPS	Euro per inhabitant	30 100
GDP PPS	Euro per inhabitant in percentage of the EU average	120

REGIONAL ECONOMY STRUCTURE

Agriculture weight in the economy	% of GVA % of employment	N.A. % N.A. %
Industry & construction weight in the economy	% of GVA % of employment	N.A. % N.A. %
Services weight in the economy	% of GVA % of employment	N.A. % N.A. %

REGIONAL SOCIAL (2013)

Employment rate, aged 20-64	% of population, aged 20-64	71.9 %
Unemployment rate	% of the active population	16.6 %
Unemployment rate of young people	% of the active population less than 25 years	4.9 %

Symbols, Units, Acronyms used

%	Percentage
N.A.	Not Available
T.B.C.	To Be Confirmed
p	People
EUR	Euro
Bn	Billion
M EUR	Million Euros
FP6	Sixth Framework Programme
FP7	Seventh Framework Programme
H2020	Horizon 2020
R&D	Research and Development
KBBE	
ERDF	EU regional development funding
GDP	Gross Domestic Product
GDP PPS	Gross Domestic Product in Purchasing Power Standards
GVA	Gross Value Added

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