

Training Webinar: Supporting policies for bioeconomy - focus on biomaterials

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Berien Elbersen

Training Material based on Task 4.2



Overview

1. Overview of bio-based economy (BBE) and policy instruments
2. EU policy instruments supporting biomaterial sector and link to national and regional policy implementation
3. Good policy examples
4. Conclusions and recommendations

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- 1. Overview of bio-based economy (BBE) and policy instruments**
2. EU policy instruments supporting biomaterial sector and link to national and regional policy implementation
3. Barriers and opportunities related to policy development and implementation
4. Good policy examples
5. Conclusions and recommendations

Bio-economy system overview

Socio-economic drivers

Markets



Policies



Science & technology



Social organisations



Individual actors



Bioeconomy activities

Enabling environment (transport infrastructure, R & D, Regulations,

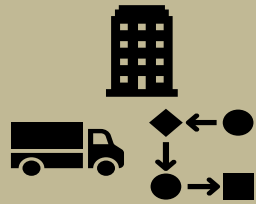


Food environment (food labelling & promotion, quality & taste, access to food)

Industrial environment (product quality, labelling, promotion, standards)



Biomass



Logistics, pre-treatment, storage & trade



Processing & conversion



Market, retail & distribution



End products/uses

Business services



Consumer characteristics/ preferences



Environmental drivers

Minerals



Climate



Water



Biodiversity



Fossil fuels



Land Soils



Example of Policies in the bioenergy chain

Regulations (Law)	Economic instruments	Other 'soft instruments'
<ul style="list-style-type: none">• Waste regulations (waste management, waste separation, classification, landfill restrictions, recycling rules, end-of-waste criteria, waste hierarchy).• Green procurement rules• Product norms & fuel standards• Requirements/restrictions for the use of co-products & residues• Product quality requirements• Product safety requirements	<ul style="list-style-type: none">• Waste fees, return fees e.g. bottles• R&D support for process development, demo and scale-up installations• Research programmes/Support to R&D for sustainable innovations• Soft loans• Support knowledge/advice in adaptation processes towards more bio-based, circular, climate and/or energy efficiency in businesses/buildings/industrial production processes	<ul style="list-style-type: none">• Voluntary standards• Product labels• Bioeconomy action plans & roadmaps• Circular economy action plans and road maps• SMART specialisation clusters/platforms• Creating standards for commodities

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Bioeconomy & circularity introduced in EU policy

- ▶ **Bioeconomy Action plans (2012):** bioeconomy is defined as *‘the production of renewable biological resources and their conversion into food, feed, bio-based products and bioenergy. It includes agriculture, forestry, fisheries, food, and pulp and paper production, as well as parts of [the] chemical, biotechnological and energy industries’*.
- ▶ **Main actions in bioeconomy sectors:**
 1. investments in research, innovation and skills;
 2. reinforced policy interaction and stakeholder engagement; and
 3. enhancement of markets and competitiveness

Bioeconomy & circularity introduced in EU policy

- ▶ The central bioeconomy perspective in EU policy was further widened in 2013 in the **7th Environment Action Plan** (EC 2013) in which circularity was incorporated in the main vision of the EU:

‘In 2050, we live well, within the planet’s ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society’s resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society’.

- ▶ In 2015 the **Circular Economy Package** (EC, 2015a) was introduced which was the basis of our current EC ambitions regarding bio-economy and circular economy further worked out in:
 - 1) **2018 update of the Bioeconomy Strategy**
 - 2) **EU Green Deal**
 - 3) **Circular Economy Action Plan**

EU Bioeconomy Strategy 2018

- 1) maximise its contribution towards the Paris Agreement & the 2030 Agenda and the Sustainable Development Goals (SDGs).
 - 2) Sustainability and circularity are now integrated with the bioeconomy objectives
 - 3) Central is the need to reconcile the competition of different sectors (food, feed and industrial uses) for biomass.
 - 4) 14 measures to be launched in 2019, based on three key priorities:
 - ▶ Strengthen and scale up the bio-based sectors, unlock investments and markets
 - ▶ Deploy local bioeconomies rapidly across the whole of Europe
 - ▶ Understand the ecological boundaries of the bioeconomy
- ▶ Actions for countries and regions:
- ▶ Member States to develop own **bioeconomy strategies**
 - ▶ At region level: research and innovation strategies for **SMART specialisation**

Green Deal: Bioeconomy

A new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of GHG in 2050 and where economic growth is decoupled from resource use (EC, 2019).

Climate Law: 2050 climate neutrality is anchored in legislation also at national level

Decarbonisation of the energy system: 75% of EU's GHG emissions come from production and use of energy

Carbon pricing instrument introduced throughout the economy: a carbon border adjustment mechanism, to reduce 'carbon leakage' risk

Zero pollution ambition



Green Deal: Biomaterials

Circular Economy Action plan (March 2020) *‘For a Cleaner and more competitive Europe’*

- ▶ Decarbonize and modernise energy intensive sectors (e.g. steel, chemicals, cement)
- ▶ Focus on resource-intensive sectors; textiles, plastics, packaging, construction)
- ▶ Sustainable product policy legislative initiative proposed: widening the Ecodesign Directive from energy related products to broad range of products to deliver on circularity
- ▶ Prevent waste from being created & stimulate circularity in waste: waste reduction and recycled content targets, extended producer responsibility, modernize current Waste law, create EU market for secondary raw materials
- ▶ Global Circular Economy Alliance: discussion on a possible international agreement on the management of natural resources
- ▶ Reinforce monitoring of circular economy national plans, National Energy and Climate action plans and national measures in relation to ambitions for GHG mitigation & circularity

Circular Economy Action plan (I)

Widening the Ecodesign Directive:

- ▶ improving product durability, reusability, upgradability and reparability,
- ▶ addressing the presence of hazardous chemicals in products, and increasing their energy and resource efficiency;
- ▶ increasing recycled content in products, while ensuring their performance and safety;
- ▶ enabling remanufacturing and high-quality recycling;
- ▶ reducing carbon and environmental footprints;
- ▶ restricting single-use and countering premature obsolescence;
- ▶ introducing a ban on the destruction of unsold durable goods;
- ▶ incentivising product-as-a-service or other models where producers keep the ownership of the product or the responsibility for its performance throughout its lifecycle;
- ▶ mobilising the potential of digitalisation of product information, including solutions such as digital passports, tagging and watermarks;
- ▶ rewarding products based on their different sustainability performance, including by linking high performance levels to incentives.
- ▶ Standard methodologies to assess impacts of products on environment (avoid false ‘green-washing’)

Circular Economy Action plan (II)

Focus on resource-intensive sectors

- ▶ Textiles: future strategy will boost the market for sustainable and circular textiles, including the market for textile reuse. It will support new consumption patterns and business models. The Commission will also provide guidance on separate collection of textile waste, which Member States have to ensure by 2025.
- ▶ Plastics: New Action Plan announced (builds on 2018 Plastics strategy); focuses on increasing recycled plastic content. Mandatory requirements on recycled content will be suggested in e.g. packaging, construction materials and vehicles. Also more attention to solving challenges with microplastics and sourcing and use of bio-based plastics bio-based and biodegradable plastics.
- ▶ Construction: Strategy for a Sustainable Built Environment to promote circularity principles throughout the whole lifecycle of buildings
- ▶ Packaging: EC will set additional targets for reducing packaging material use, recycle and reuse packaging material, reinforce mandatory requirements

Circular Economy Action plan (III)

More circularity in industrial production processes:

- ▶ Review how to update the **Industrial Emissions Directive**,
- ▶ Develop an **industry-led reporting and certification system**, enabling the implementation of industrial symbiosis;
- ▶ Supporting the sustainable and circular bio-based sector through the **further implementation of the Bioeconomy Action Plan**;
- ▶ Promoting the use of **digital technologies for tracking, tracing and mapping of resources**;
- ▶ Promoting the uptake of green technologies through a system of solid verification by registering the **EU Environmental Technology Verification scheme (EU certification)**
- ▶ Regulatory framework for **certification of carbon removals**

Circular Economy Action plan (IV)

Innovation, investments, financing:

- ▶ EU funds will be mobilised to support the transition to a circular economy -
 - ▶ EU Cohesion funds,
 - ▶ European Regional Development Fund
 - ▶ LIFE programme
- ▶ Actions to mobilise private financing in support of the circular economy through EU financial instruments such as **InvestEU**

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2 good policy examples

Title	Country/ region	Sector	Purpose of the instrument with regard to the biomass value chain	Other policies described in same fact sheet
Bioeconomy Technological Platform Piemonte (Smart Specialisation Strategy)	Italy Piemonte	- Agriculture, Industry (chemistry), R&D	Enabling environment: Fostering industry - research collaboration particularly in bio-materials and chemicals	There are many smart specialisation cluster initiatives in EU such as the other example presented as good example policy in Bavaria, Bio-based Delta in the Netherlands, BioVale in the UK, IAR in France.
Cluster Initiative Bavaria	Germany Bavaria	- Industries, R&D	Enabling environment: Fostering research collaboration	

Policy integration of 2 good policy examples

- ▶ EU SMART Specialisation - regional policies: Smart specialization promotes regional economic transformation particularly in innovation and investment through innovative activities in selected domains (e.g. BBE).
- ▶ Link to EU research and development framework programmes (e.g. FP7, BBI, H2020)
- ▶ For Bavaria cluster (2006): EU SMART specialisation framework helpful to get better access to EU, national and regional R&D and funds.
- ▶ For Piemonte (2018): direct follow-up of the EU SMART specialisation policy and facilitation of funding sources. Funded specifically through European Regional Development Fund (ERDF)

Impact and evaluation of 2 good policy examples

Cluster Bavaria	Initiative	<ul style="list-style-type: none">• Since 2006 the government has invested 63 million euro in the cluster initiative. Furthermore, more than 248 million euro federal funds were acquired and this was added with over 39 million euro of EU funding.• By April 2017, over 10,000 events were organized, in which 562,000 participants• 1,500 projects were initiated and 9,900 participants collaborated• The clusters have proven to be effective in national cluster competitions and received Bronze, Silver or Gold Label (European Cluster Excellence initiative).
Bioeconomy Technological Platform (Smart Specialisation Strategy) Piemonte	<p>The impact between 2018 and spring 2019 is :</p> <ul style="list-style-type: none">- 9 projects approved (out of 11 submitted)- 2/3 of approved projects (6 out of 9) focused on Circular Economy- 46,6m€ total value of approved CE projects (out of 66m€)- 20,2m€ ERDF contribution granted to CE projects (out of 29,2 m€)- 112 partners involved in approved CE projects: 87 companies (both large, leading companies and SMEs), 33 Research Organizations	

What makes these 2 good policy examples?

Cluster Bavaria	Initiative	<ul style="list-style-type: none">• Proved effective in boosting the bioeconomy: tremendous increase in clusters and collaboration projects in region• High quality of clusters confirmed by several awards (European Cluster Excellence initiative).• Supports the marketing and branding of a region, therefore attracting new companies to the regions and setting up international collaborations.• Driver to more mature bio-based development stages, create additional income and employment opportunities in innovate sectors of the bioeconomy.
Bioeconomy Technological Platform (Smart Specialisation Strategy) Piemonte		<ul style="list-style-type: none">• New explorative collaboration projects between research and industry resulted in new products and technologies• Platforms are arenas where experimentation for new products and technologies take place, level of technological readiness.• Motors to bioeconomy development and play a major role in improving regional competitiveness and creating new jobs.

Barriers in 2 good policy examples?

- Combining funds from ERDF, due to different rules and procedures, with EAFRD (that would have been useful in order to involve farmers) proved very difficult.
- Different State Aids rules applicable to industrial and agricultural activities make it almost impossible to fund a complete regional value chain with a single fund.
- The private funds were difficult to secure particularly during the initial stage as the cross sector transfers, respective methods and products were not yet developed.
- Challenge to engage farmers and forestry sector as well as SMEs in the R&D projects
- Lack of training which was particularly an issue among stakeholders from the agricultural and forestry sectors and from SMEs in R&D which do not have the operational, financial, technical and planning capacity to carry-on projects with a mid/long-term vision.

Opportunities for good policy examples

- ▶ Presence of an EU regulation or stimulation framework: SMART specialization, financing from ERDFs, EADR, D,
- ▶ Triggered regional political interest in bio-based development and reaching sustainability goals and/or new business opportunities, which can often be translated in several national and regional strategies
- ▶ Research programs available: EU: H2020, BBI research & innovation support and national & regional research programs

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Conclusions (I)

- ▶ SMART specialisation platforms are good examples in terms of number of clusters and research and innovation actions realised, amount of money spent, but also in rewards received.
- ▶ In SMART specialisation clusters collaboration challenges occur particularly in the first phase of the development
- ▶ Lack of training and knowledge among the crucial stakeholders is barrier
- ▶ The European policies that are mentioned to contribute to bioeconomy development at regional level are especially:
 - ▶ Rural development policies,
 - ▶ Climate and energy policies,
 - ▶ Cohesion policies: SMART specialisation policy,
 - ▶ Waste management policies
 - ▶ Specific bioeconomy policies

Conclusions (II)

- ▶ Market barriers:
 - ▶ Complications with securing private funds during the initial stage of innovation development
 - ▶ Commercialization of new bio-based products is a slow process which requires secure policy and financing conditions to minimize the investment risk,
 - ▶ Highly innovative products or components require long and consistent efforts for training, education and knowledge transfer to entrepreneurs prior to commercialization.
- ▶ In the bioenergy policies strong competition between bioenergy and fossil-based alternatives was a barrier, but not the only and main barrier overall.

Recommendations

- ▶ Policy instruments for all stages of maturity are:
 - ▶ Instruments to mobilize and regulate biomass,
 - ▶ Instruments for waste management,
 - ▶ Regulation and support instruments to safeguard the environment and prevent environmental impact,
 - ▶ Financing instruments for pilots,
 - ▶ Loans to help companies to finance bio-based investments,
 - ▶ Funding for research and research agenda,
 - ▶ Strategy for further bioeconomy and circular economy development
 - ▶ Instruments for monitoring progress of bioeconomy and circularity

Recommendations

- ▶ Regions that have the ambition to transform their economy to a more biobased and circular economy need to develop regional strategies and road maps
- ▶ How? See D4.2 (Recommendations in chapter 7):

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Thank you for your attention!

Berien Elbersen

berien.Elbersen@wur.nl



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