

The European Commission's science and knowledge service

Joint Research Centre



Innovation and sustainability

—

an updated EU BioEconomy Strategy

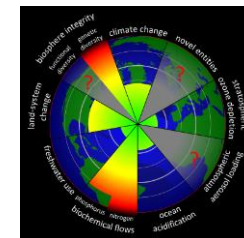
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Tallinn 28-02-2019

The EU BioEconomy Strategy: BioEconomy the European Way

A sustainable BioEconomy

- **Within the planetary boundaries**
 - We have only this one planet
- **Good for all citizens**
 - Healthy products and environment
 - Rural and urban prosperity
- **Good for our economy**
 - Globally competitive
 - Jobs and income



Rethinking
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What is **Bio** in our Economy?

The **EU BioEconomy Strategy** includes all economic sectors & systems that use / produce / process / or are are driven by biological resources

What is **Bio** in our Economy?

- **Primary production:** sustainable biomass & ecosystem services
- **Secondary production:** food and non-food uses of biomass, incl. bio-energy
- **Second generation of biomass uses:** use of bio-waste and bio-by-products, for food and non-food, incl. bio-energy
- **Tertiary production:** bio-based tourism
- **Bio-processing of abiotic materials:** gold leaching

EU BioEconomy in figures

Primary production:

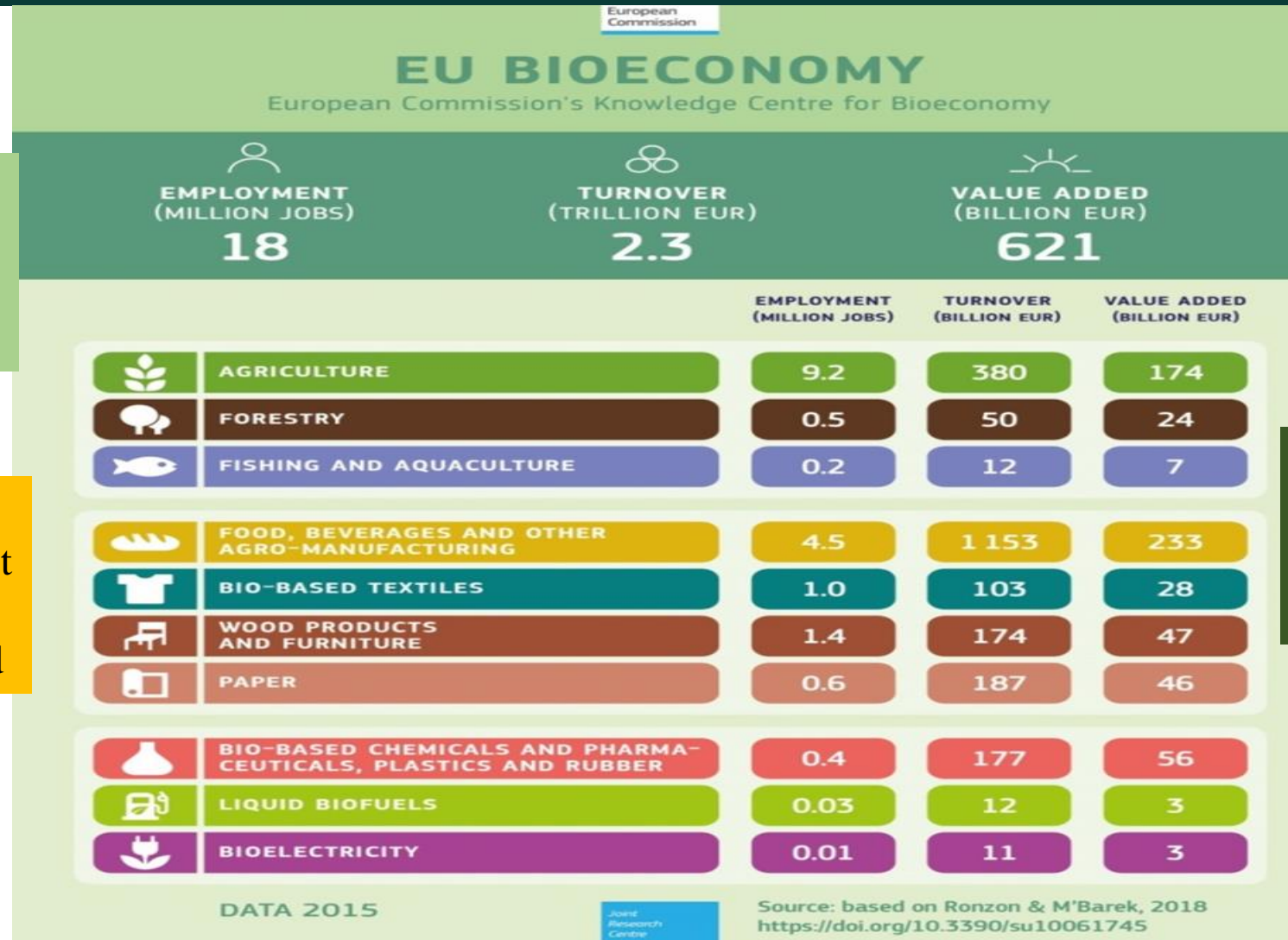
55.0 % employment
19.2 % turnover
33.0% value added

Agri-Food:

77.2% employment
66.7 % turnover
65.5 % value added

Forest & F-industries:

13.9 % employment
17.9 % turnover
18.8 % value added



BioEconomy in Estonia

1/3 of the Estonian economy is BioEconomy

(The BioEconomy.DE)

"The purpose of the development of the field is to mitigate the impact of **climate change** on the agricultural sector and help the sector to adapt to climate change, increase the share of renewable energy in energy supply, implement **energy-saving** measures and **reduce the environmental impact of energy production.**"

(Website: Rep. of Estonia, Min Rural Affaires, 2017)

- **Underused BE-potential;** high primary production capacity
- Potential to develop value chain principles
- "the main interest in bioeconomy deployment in Estonia lies in increasing **resource efficiency** and generating **higher value added from biomass.**" (Case Study Report Estonia, RTD, 2015)

What is new?

- **Not** the economic sectors
- **Not** the fact that together they are a significant part of the economy
but
- **The growing need to unleash its potential**

How to reach a BioEconomy the European Way ?

Sustainability

- **Environmental**
 - Increased (bio-)diversity of primary production
 - Promote and value environmental services
 - Think global, act local
- **Social**
 - Involve stakeholders in change management
 - Enhance the well-being of all
 - Reduce inequality (rural/urban)
- **Economic and financial**
 - Account for long term cost & benefits
 - Green financing

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How to reach a BioEconomy the **European** Way ?

Multi-dimensional innovation

- **Technology**
- **Organisation**
- **Economic & financial**
- **Social**

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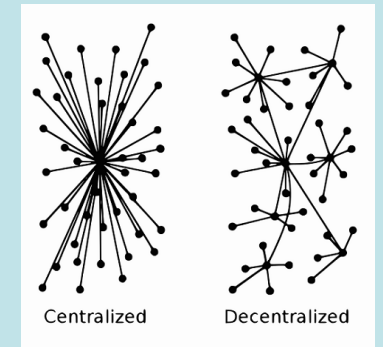
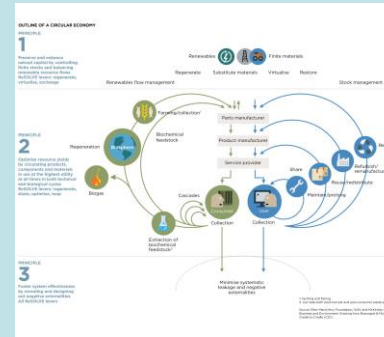
Technological innovation

- Digitisation at all levels
- Higher efficiency/less waste and pollution
- Bio-based products/processes
- From scale-up to scale-down
- Biotechnology



Organisational innovation

- Circular and cascade systems
- From central to de-central
- Bio-prosumer and new market structures
- Value networks: synergies from cooperation
- Linking rural and urban areas



Economic and financial innovation

- Sustainability pays, environmental costs are accounted for
- Collaboration trumps competition
- Long term effects are better accounted of
- Financing for new sustainable products and processes
- Financing for long term investments

Social innovation

- Producer, prosumer, and consumer networks
- Collaboration trumps competition
- Higher social appreciation of serving the common good
- Consumer behavior: sustainability is cool
- Towards a sharing economy

Action plan

1. Unlock investment and markets

- Mobilise stakeholders
- 100 million Euro Investment platform for circular BE
- Analyse enablers and bottlenecks for bio-based innovations
- Standards, labels and markets for bio-based products
- Facilitate new bio-refineries
- Develop bio-degradable products

Action plan

2. Deploy local BioEconomies

- Strategic deployment for sustainable food and farming systems, forestry and bio-based products
- Pilot action for rural BioEconomies
- Support MS and regions to develop BE-Strategies
- Education, training and skills development

Action plan

3. Understand the ecological boundaries of BE

- Enhance knowledge of biodiversity and ecosystems
- Monitor progress towards a sustainable BioEconomy
- Promote good practices
- Enhance the benefits of biodiversity in primary production

The EU is committed to the **SDGs** and
the **Paris agreement**.



A sustainable, circular BioEconomy is
central for reaching this aim.

**The BioEconomy concept can provide
win-win solutions.**

**We must focus on these,
and minimise trade offs wherever possible.**

Further reading

List of hyperlinks:

https://ec.europa.eu/knowledge4policy/bioeconomy_en

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018DC0673>

https://ec.europa.eu/research/bioeconomy/pdf/ec_bioeconomy_actions_2018.pdf#view=fit&pagemode=none

https://ec.europa.eu/research/bioeconomy/pdf/ec_bioeconomy_booklet_2018.pdf

The biggest part of the BioEconomy:

The Agri-FOOD sector !

**Food is not everything
but
everything is nothing without food**