9° Bioeconomy in Europe Report

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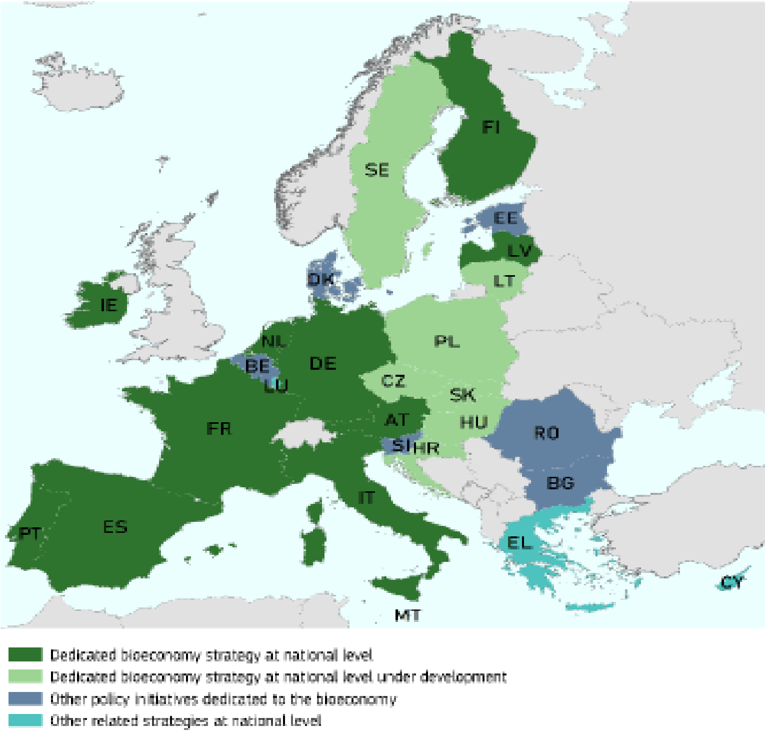
Bioeconomy in Europe

The bioeconomy covers ***all sectors and systems that rely on biological resources*** *(animals, plants, micro-organisms and derived biomass, including organic waste), their functions and principles. It includes and interlinks: land and marine ecosystems and the services they provide; all primary production sectors that use and produce biological resources (agriculture, forestry, fisheries and aquaculture); and all economic and industrial sectors that use biological resources and processes* ***to produce food, feed, bio-based products, energy and services*****.**

National bioeconomy strategies in the EU in February 2022



Source: EU Bioeconomy Strategy Progress Report, 2022

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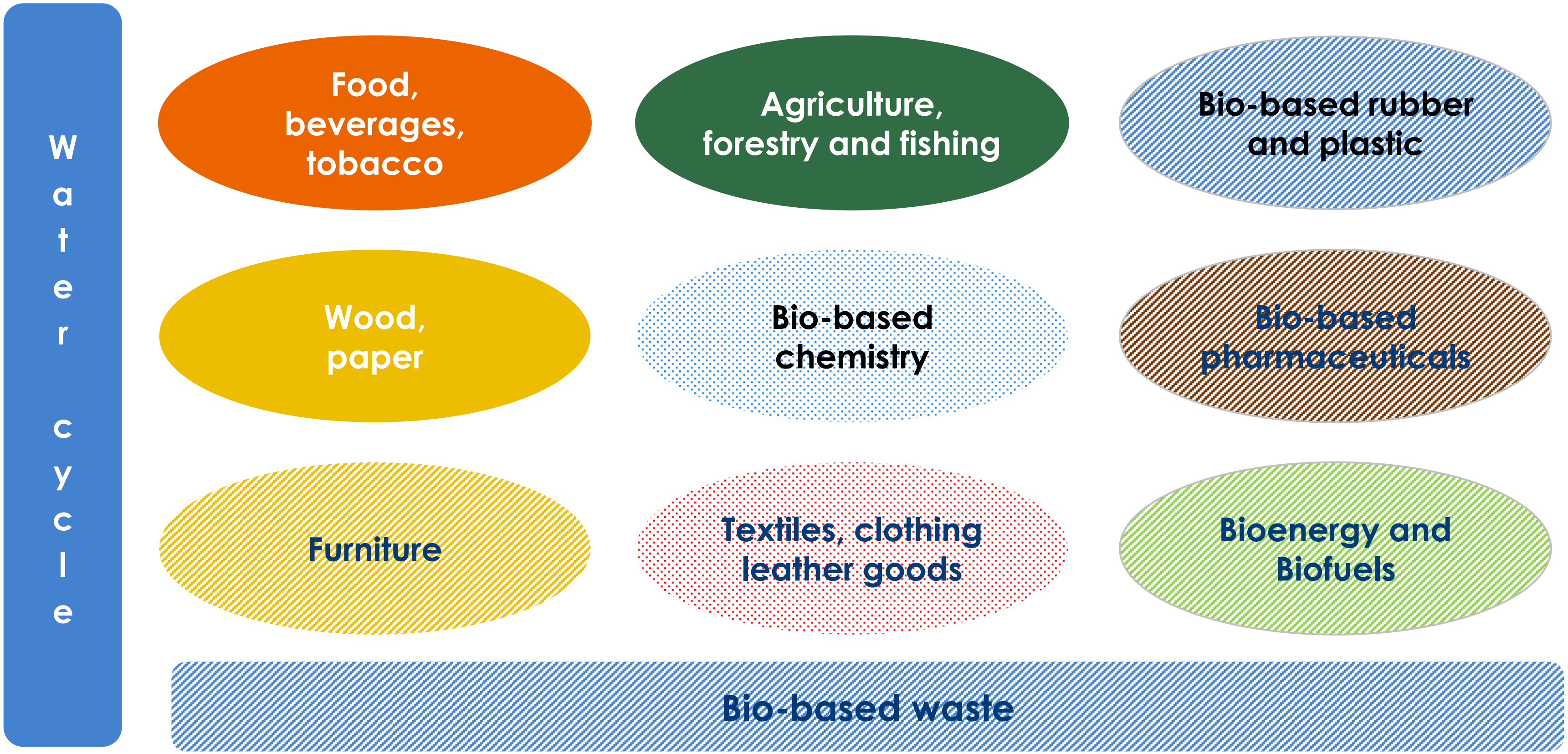
Measuring the Bioeconomy

- In order to design a well-targeted economic policy, it is very important to **describe and measure Bioeconomy**.
- Since 2014, our goal has been to offer a **quantification of bioeconomy**:
  - Based on official data;
  - Applicable at international level;
  - Updateable over time.

Official nomenclatures do not allow clear identification of productions based on the raw materials they use, as they refer to the type of product/process and service, without distinguishing the nature and origin of the inputs

- For those sectors in which not all production is bio-based, it is necessary to **estimate its weight.**

A broad definition of the Bioeconomy



Why water and waste in the Bioeconomy? A circular approach

- Why **water**:
  - Water as an **input** for standard bioeconomic industries (agriculture, food, paper etc…)and a precious **output**, if depurated, in terms of sewage sludge, an important source of biomass, energy and bio-based products;
  - Water as a **source of food and biomass** (fish, fish discards, seaweeds and other aquatic organisms).

- Why **waste**:
  - Bio-Waste management is a crucial activity in the bioeconomy system: recycling and recovering allow the generation of **biomass** that otherwise will be lost
  - New biochemicals allow a more efficient and correct management of waste in a truly **circular** cycle

The ISP- Cluster Spring - Assobiotec report

2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

- **2012** – **European Commission adopts Strategy for sustainable bioeconomy**
- **2014** – **1st Bioeconomy in Europe Report**
- **2016** – **2nd Bioeconomy in Europe Report.** *Same methodology, new data for 2013*
- **2017** – **3rd Bioeconomy in Europe Report** *New methodology for estimating bio-based chemistry. Bio-based component of waste included in estimation.*
- **2018** – **4th Bioeconomy in Europe Report.** *Including the water cycle, focus on Innovation and marine bioeconomy*
- **2019** – **5th Bioeconomy in Europe Report** *New estimation methodology (use of JRC database). Focus on wood and paper supply chain.*
- **2020** – **6th Bioeconomy in Europe Report.** *Focus on Innovation and Agribusiness.*
- **2021** – **7th Bioeconomy in Europe Report.** *New estimation methodology to 2020. Focus on land and bio-based chemistry*
- **2022** – **8th Bioeconomy in Europe Report** *Updated estimates to 2021 and impact of Russian-Ukrainian war. Focus on start-ups*
- **2023** – **9th Bioeconomy in Europe Report.** *Estimates updated to 2022. Focus on textiles and clothing*

The contents of the 2023 Report

- The Bioeconomy in Italy and Europe to 2022
- The role of alternative fuels and biofuels in the Mediterranean for the decarbonization goal
- The Bioeconomy in the textile-clothing industry: results of the Tagliacarne Survey, Unioncamere, Cluster Spring
- The textile-clothing sector
- Closing the loop in the textile-clothing industry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Italian Circular Bioeconomy Cluster

Bioeconomy in Europe

9th Report

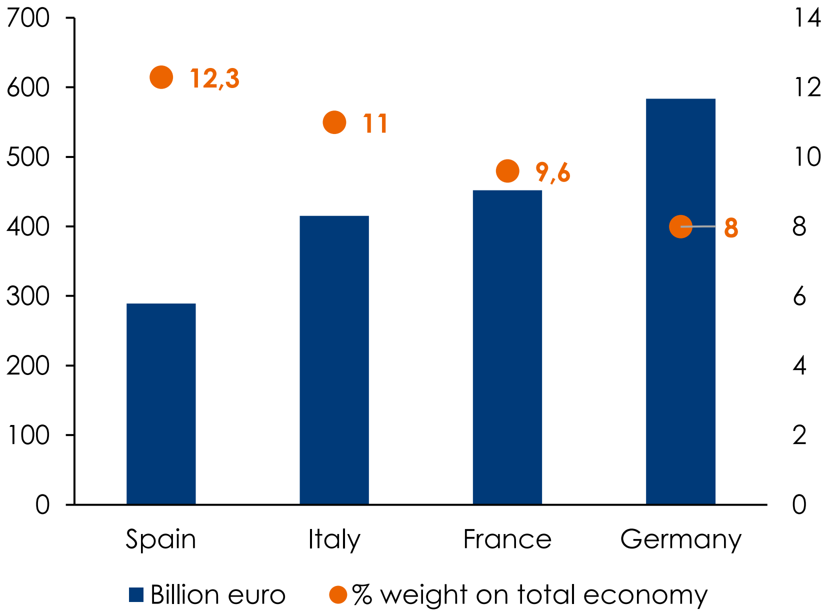
Research Department

June 2023

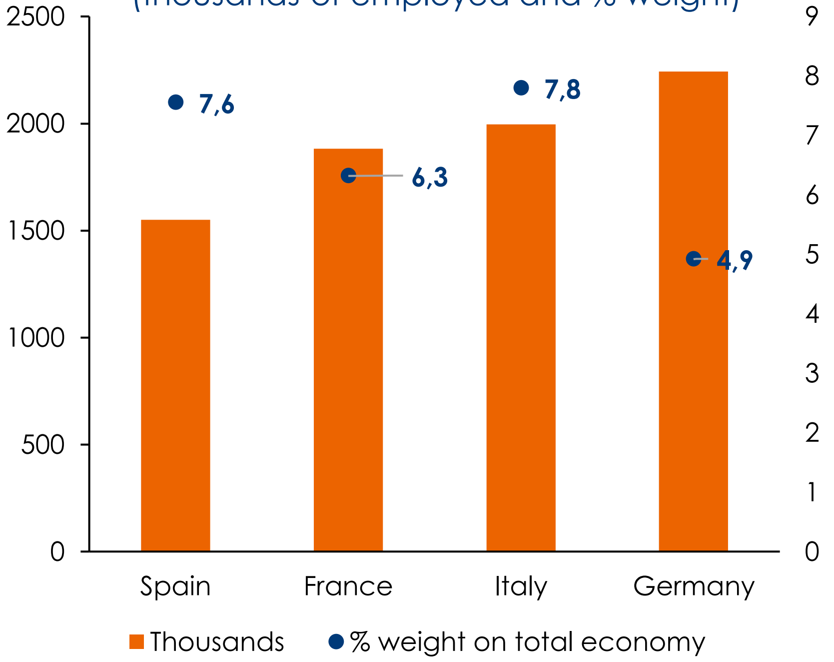
The relevance of the Bioeconomy in Europe

Overall, the value of the Bioeconomy of the 4 countries analyzed reaches **1.740 billion euros**, employing about **7.6 million people**.

Bioeconomy: value of production 2022
(billion euros and % weight)



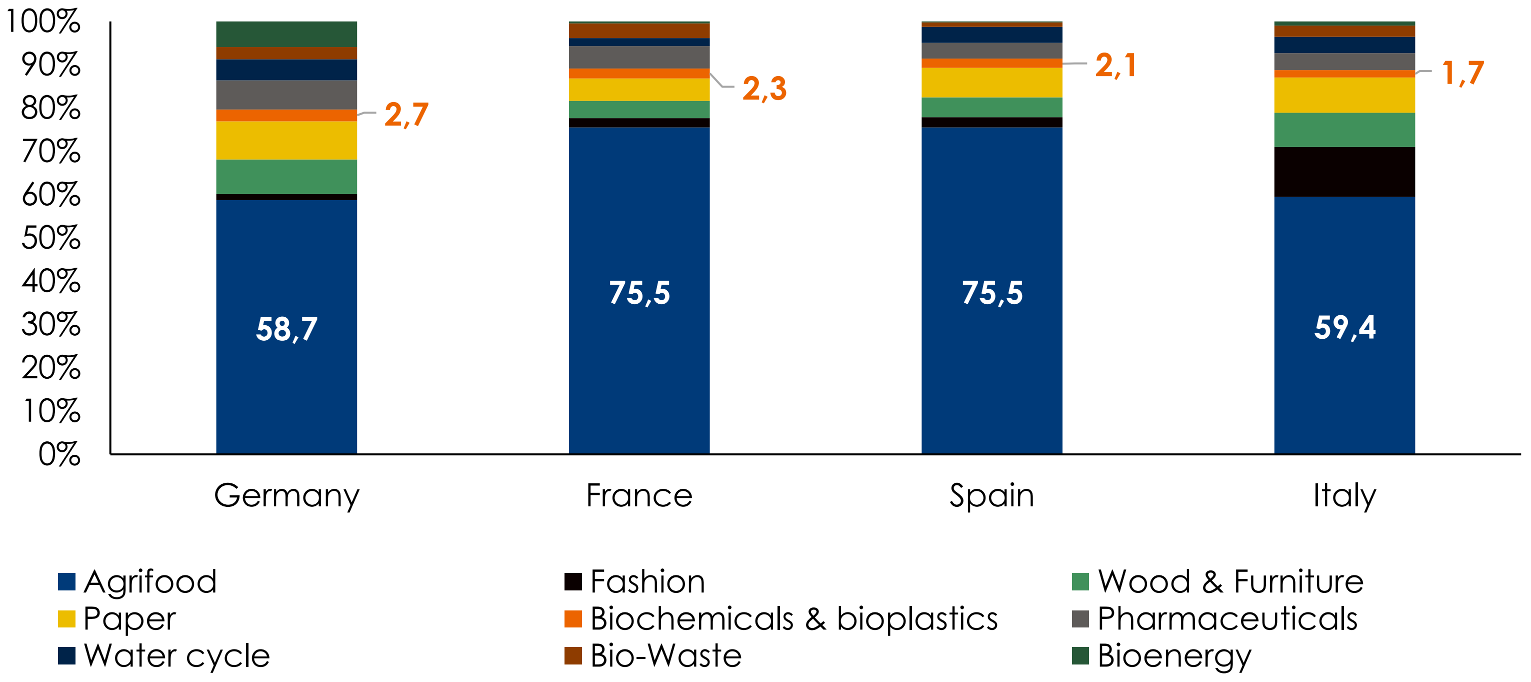
Bioeconomy: employment 2022
(thousands of employed and % weight)



Source: Intesa Sanpaolo elaborations on various sources

A prevailing role for the agribusiness supply chain in all European countries

The composition of the Bioeconomy by sector
(%, value of production, 2022)



Source: Intesa Sanpaolo elaborations on various sources

Bio-based chemistry and its crucial role for the circular Bioeconomy

- **Bio-based chemistry** is based on biologic and renewable raw materials instead of fossils and plays a central role in the circular economy.
- **Biorefineries** use waste and by-products coming from any sector of the Bioeconomy to produce new materials, many of which are compostable and can have several final applications.

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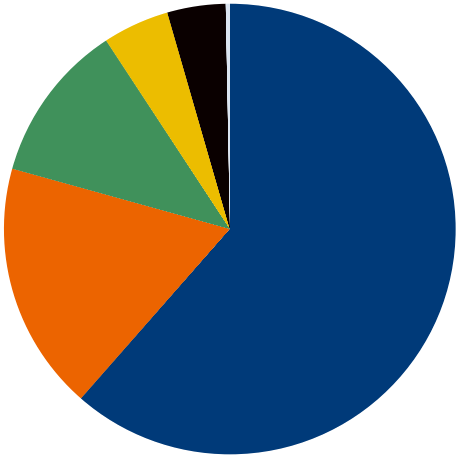
A steady increase in biobased chemical plants…

- According to JRC data, in 2020 there are **528** plants producing (exclusively or not) biochemicals in Europe (a steady increase from the 300 plants counted by the previous JRC survey of 2017).

Biochemicals produced in Europe by source of feedstock (%)



Source: JRC Dashboard (2023)

Location of biobased chemical plants in Europe

Source: JRC Dashboard (2023)

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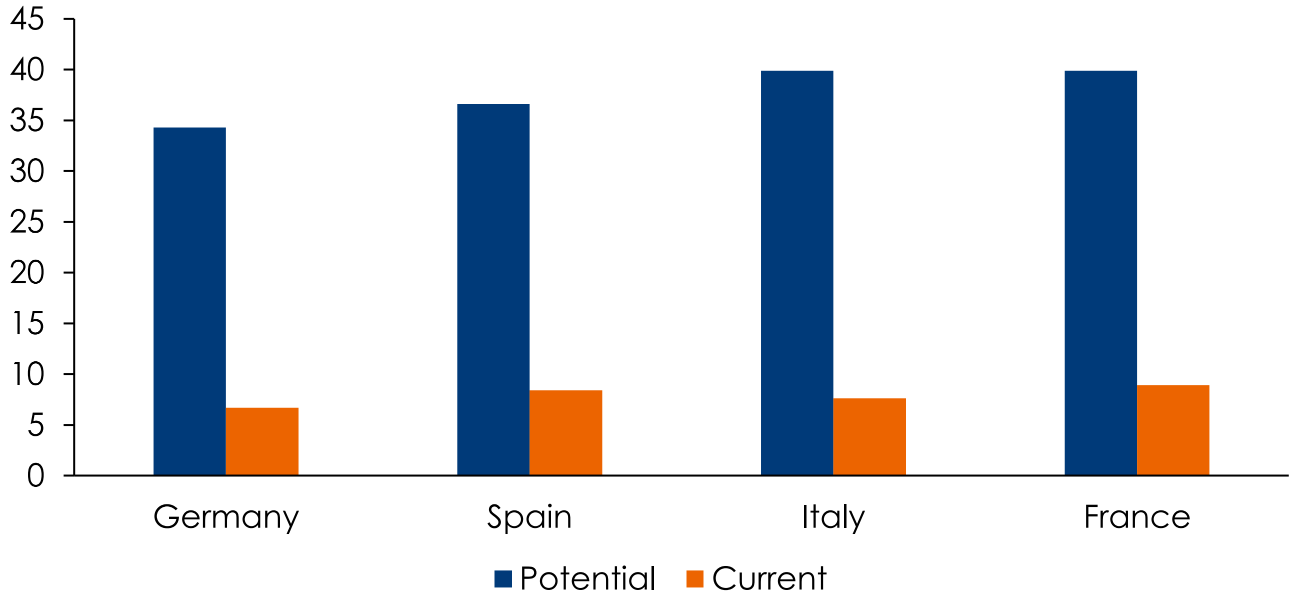
…but we are still very far from the potential

Chemicals that can be or are currently produced with renewable resources
(% on total chemical production)



The potential weight derives from an expert assessment based only on technological feasibility, see Intesa Sanpaolo-Assobiotec «La bioeconomia in Europa», n.1, 2014. Current weight based on JRC Bioeconomics Database

Support from regional, national and European policies is crucial

- Sustain **innovation**:
  - R&D funds also for applied research and demo plants
  - R&D on environmental and health impact along the entire value chain (including soil regeneration e fertility)
  - Talent attraction in key fields and multidisciplinary approach in education
- Create **new markets** through regulation, standard and **consumer** sensibilization:
  - Mulching films
  - Packaging
  - Public procurement
- Increase the **degree of circularity** to overcome **biomass constrains:**
  - Increase information and data on available biomass resources
  - Facilitate the closure of cycle, identifying bottlenecks and introducing coherent regulation at different level of governance
  - Develop pathways to help Secondary Raw Material markets (SRM) work more smoothly

Coherent and systemic approach

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NACE classification will help in better targeting policy effort

- It will be of crucial importance to identify Bioeconomy-related activities within the **NACE classification**, used as a reference in many European policies (e.g. The European Taxonomy for Sustainable Finance).
- The last revision introduces ad hoc codes for the production of electricity from **renewable sources**, **liquid biofuels** and **solid fuels from woody biomass**, but not for the more innovative **bio-based chemical** activities.
- The Expert-level meeting of the European Bioeconomy Policy Forum had a recent meeting on this topic, understanding the importance of an easy e correct classification of firms and activities.

Thank you!

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