10° Bioeconomy in Europe Report

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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 always 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.**

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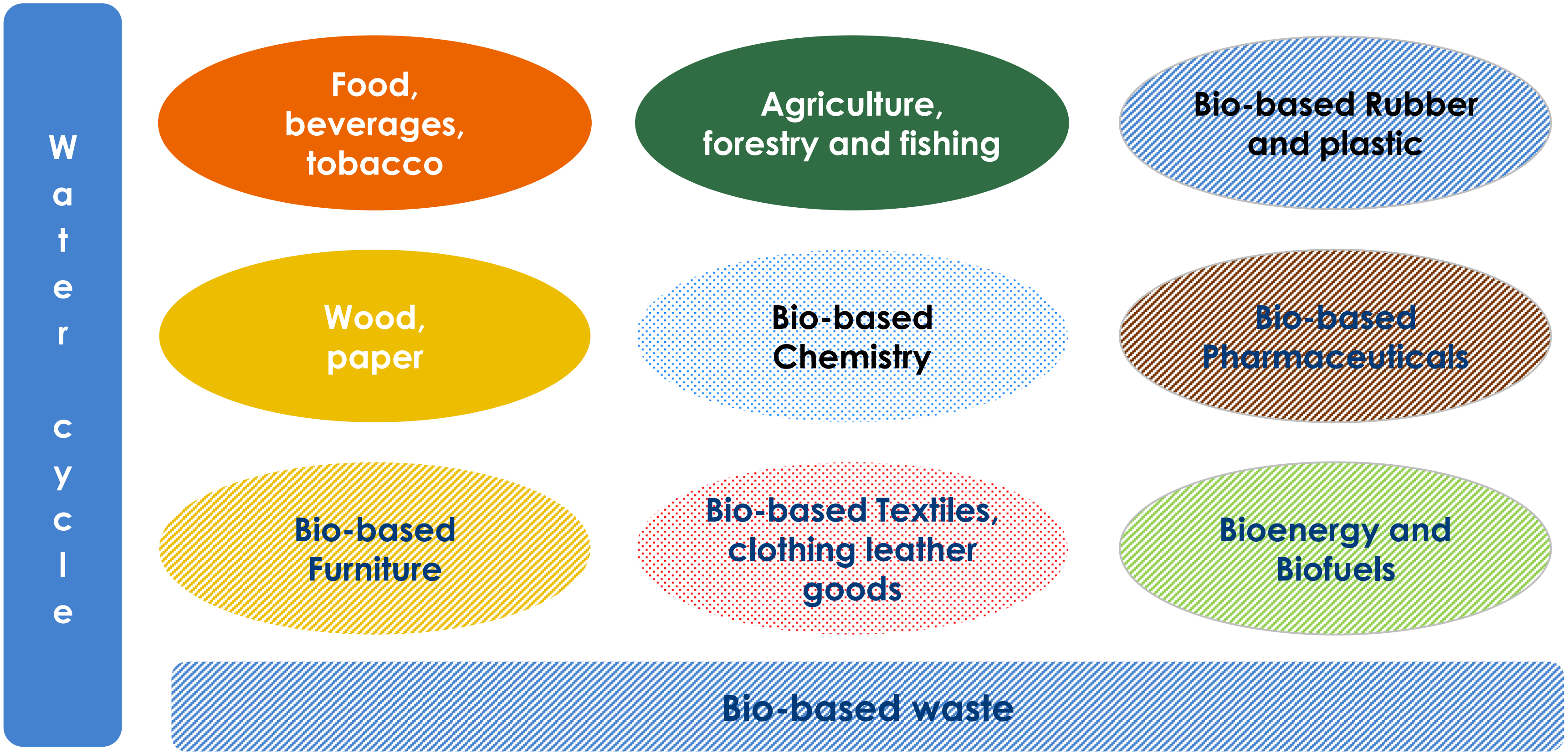
A broad definition of the Bioeconomy



Why water and waste cycles in the Bioeconomy? A circular approach

- Why **water cycle**:
  - Water as an **input** for standard bioeconomic industries (agriculture, food, paper etc…)
  - Water as a precious **output**, if depurated, in terms of biomass, recycled water, energy and bio-based products

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

The Bioeconomy in Europe Report timeline

2012 European Strategy for a Sustainable Bio-Economy

3rd Bioeconomy in Europe Report
New methodology for bio-based chemistry. Including bio-based component of waste.

5th Bioeconomy in Europe Report
New estimation methodology (use of JRC database). Focus on wood and paper supply chain.

7th Bioeconomy in Europe Report
New estimation methodology. Focus on land and bio-based chemistry

9th Bioeconomy in Europe Report
Estimates up to 2022. Focus on textiles and clothing

1st Bioeconomy in Europe Report

Italian Bioeconomy Strategy (BIT I)

Italian Bioeconomy Strategy (BIT II)

2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024

2nd Bioeconomy in Europe Report
Same methodology, new data for 2013

4th Bioeconomy in Europe Report
Including the water cycle, focus on innovation and the marine bioeconomy

Review of the European Strategy for a Sustainable Bio-Economy

6th Bioeconomy in Europe Report
Focus on Innovation and Agribusiness

8th Bioeconomy in Europe Report
Updated estimates to 2021 and impact of Russian-Ukrainian war. Focus on start-ups

10th Bioeconomy in Europe Report
Updated estimates to 2023. Focus on innovation, agribusiness, water and cosmetics

The contents of the 10th Report

- The Bioeconomy in Italy and Europe to 2023
- Innovative start-ups in the Italian Bioeconomy
- Innovation in the food sector
- Water efficiency and resource re-use in the agro-food chain
- Italian cosmetics: sustainability and supply chains

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Italian Circular Bioeconomy Cluster

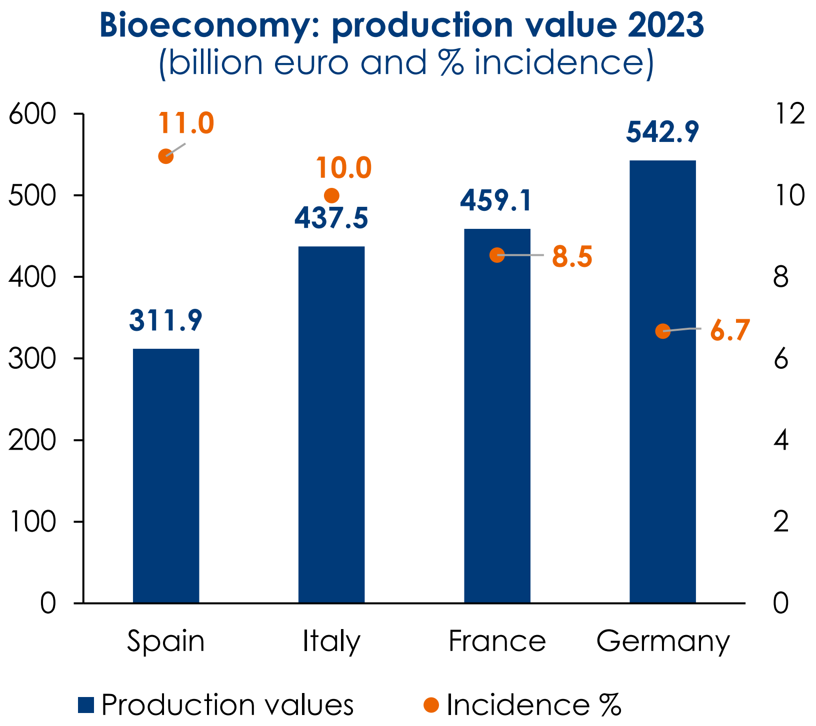
La Bioeconomia in Europa

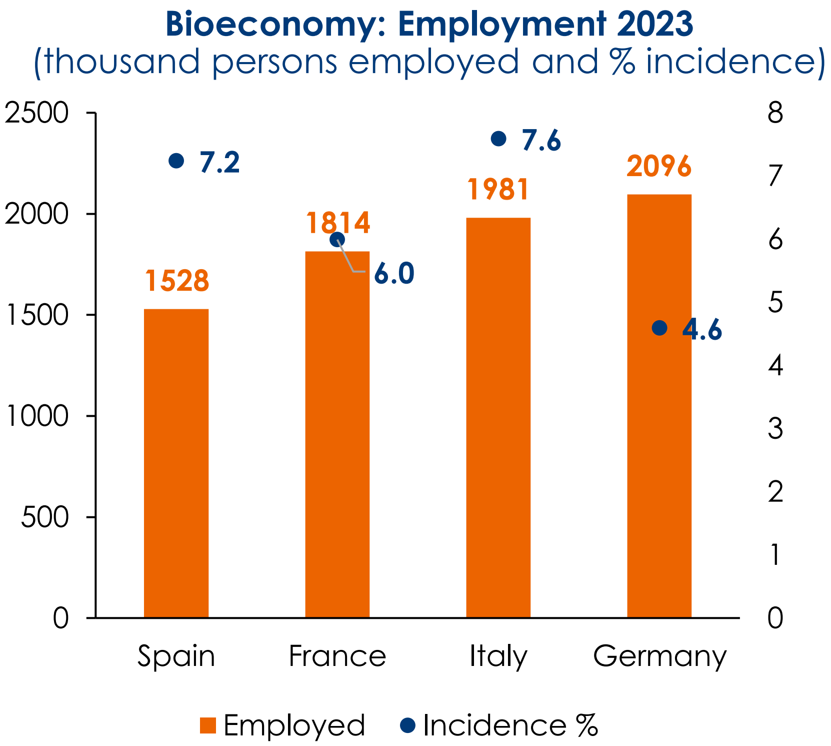
10° Rapporto

Research Department
Giugno 2024

The relevance of the Bioeconomy in Europe

Overall, the value of the Bioeconomy in Italy, France, Germany and Spain reaches **EUR 1,751 billion**, employing about **7.4 million people** and accounting for 8.4 % and 6% respectively of the total economy of these countries.

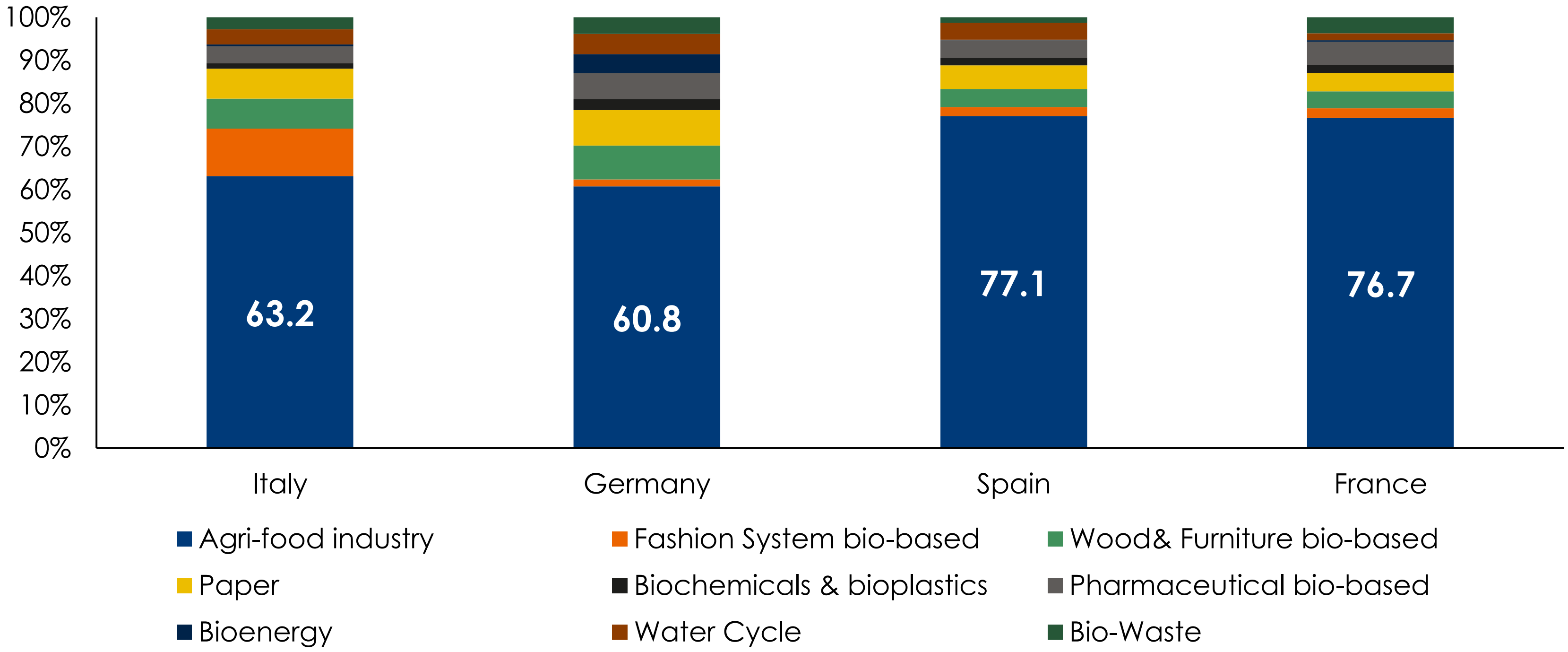




Source: Intesa Sanpaolo elaborations from various sources

A prevailing role for the agri-food industry

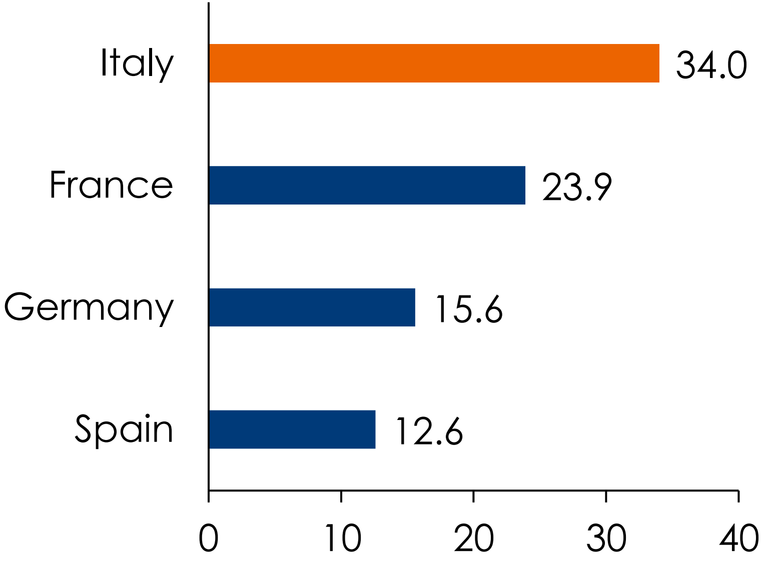
The composition of the Bioeconomy by sector
(%, value of production, 2023)



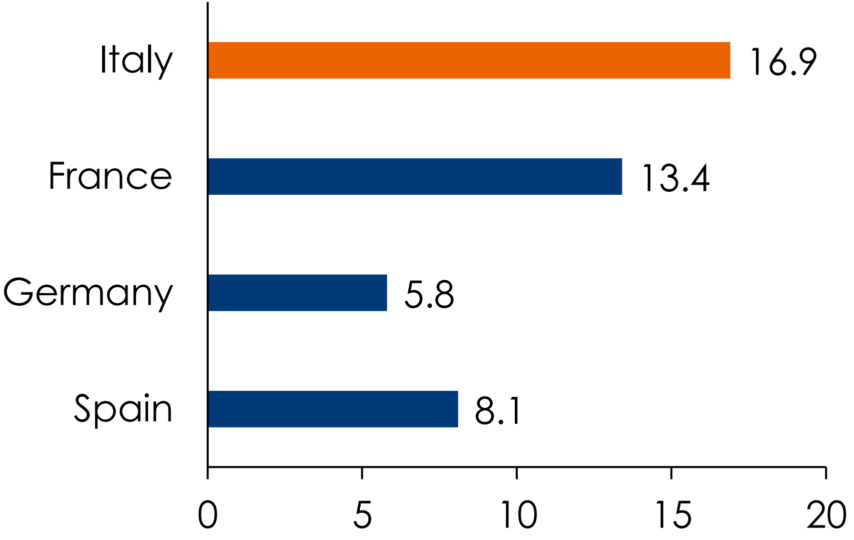
Source: Intesa Sanpaolo elaborations on various sources

Italian food sector: a good propensity to innovation...

Companies with 'in-house' R&D (%, 2020)



Companies with continuous 'in-house' R&D (%, 2020)

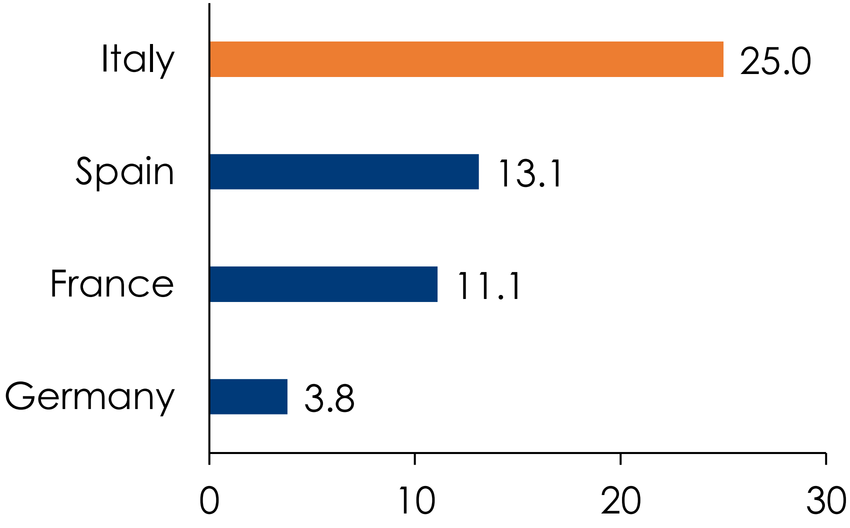


Source: Eurostat - CIS 2020

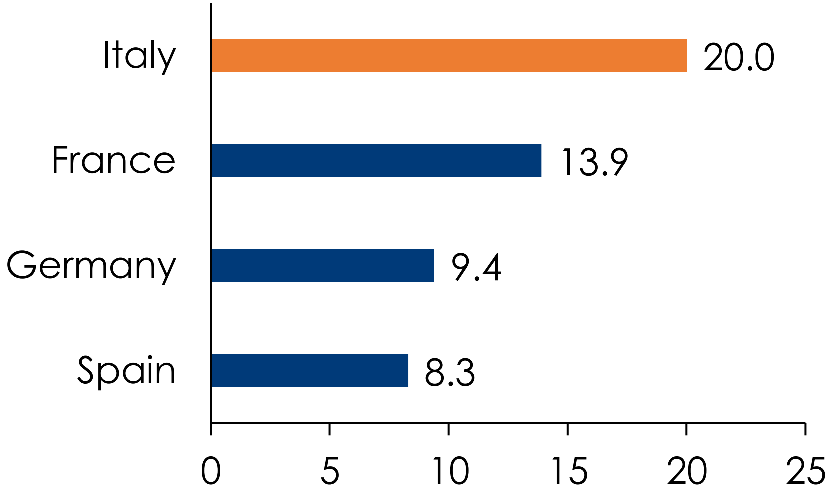
… increasingly oriented towards sustainability

- An increasing share of innovative investments is dedicated to sustainability issues, as also evidenced by business cases.

Substitution of polluting or hazardous materials (% companies for which process innovation is of high importance; 2020)



Reduction in material use or water consumption (% of companies for which process innovation is of high importance; 2020)

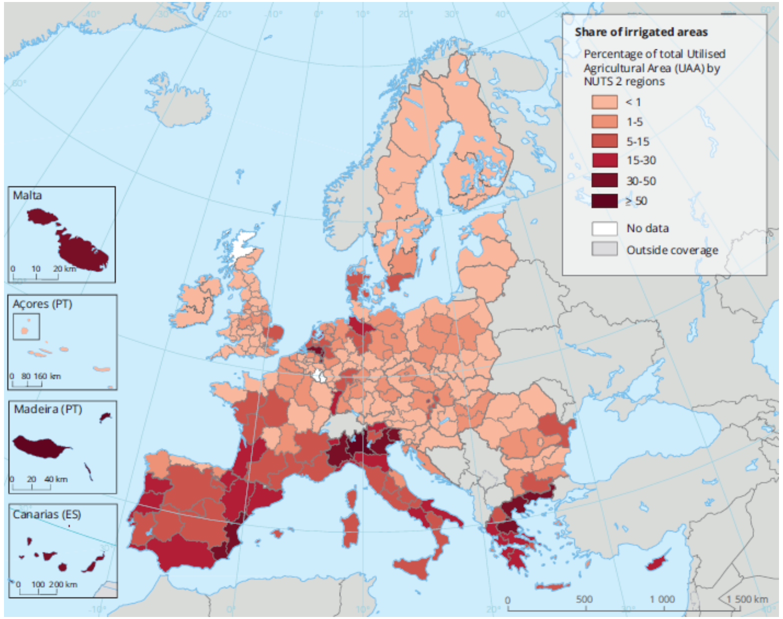


Source: Eurostat - CIS 2020

Sustainabily in agriculture is strictly connected to water availability

- In Italy, the agricultural sector is a large user of water (it absorbs **60% of total water consumption**) and has a high propensity for irrigation: 20.2% of the utilised agricultural area (UAA) is irrigated, in Spain the irrigated area is 13.2% of the utilised agricultural area, in France 5% of the UAA, in Germany 2.7%.
- The agri-food sector is becoming **increasingly aware of the relevance of water resources and of the critical issues and risks** associated with climate change.
- The adoption of **actions to increase efficiency and water recycling and reuse** is central to the sustainability of the industry.

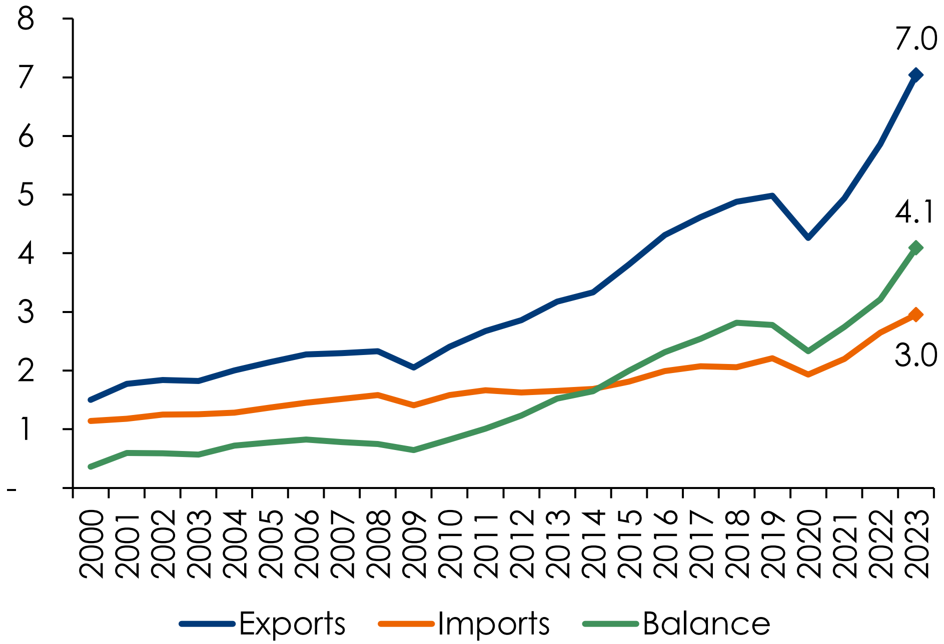
Irrigated agricultural area



Note: European Commission

Cosmetics: a new Italian specialisation...

Cosmetics: Development of trade balance and its components (billion euro)

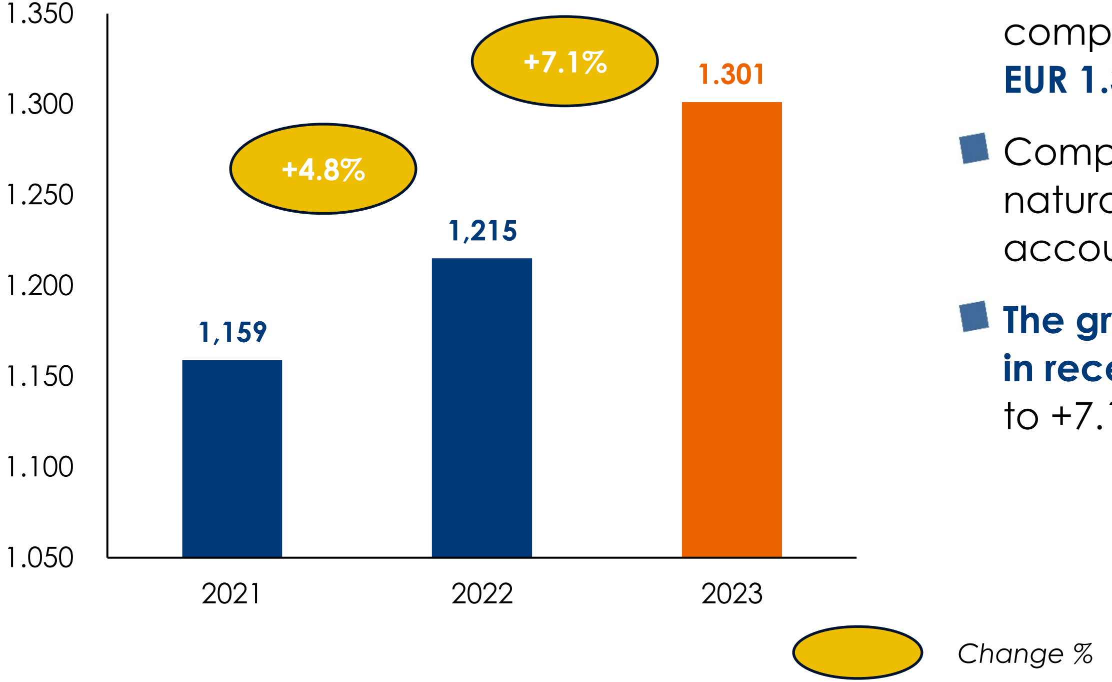


- The cosmetics sector in Italy comprises **1,259 local units** and **employs** around **20,000 people**
- Over the years, it has strengthened its competitiveness and in 2023 generated **a trade surplus of more than EUR 4 billion** (it was **EUR** 363 million in 2000)

Source: Centro Studi di Cosmetica Italia and Intesa Sanpaolo elaborations on Istat data

...with an increasing role for biological and natural inputs

Natural/organic cosmetics (millions of euro)



- The **natural or organic cosmetics** component reached a value of **EUR 1.3 billion in 2023**
- Compared to the total market, natural or organic cosmetics account for **a 10% share**
- **The growth trend has strengthened in recent years** from +4.8% in 2022 to +7.1% in 2023

Source: elaborations by Centro Studi of Cosmetica Italia

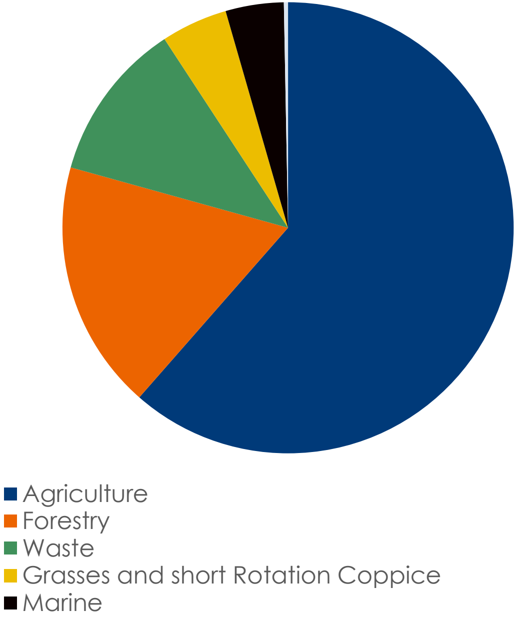
Bio-based chemistry and its crucial role for the circular Bioeconomy

- **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.

A steady increase in biobased chemical plants…

- According to last available 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 (%)



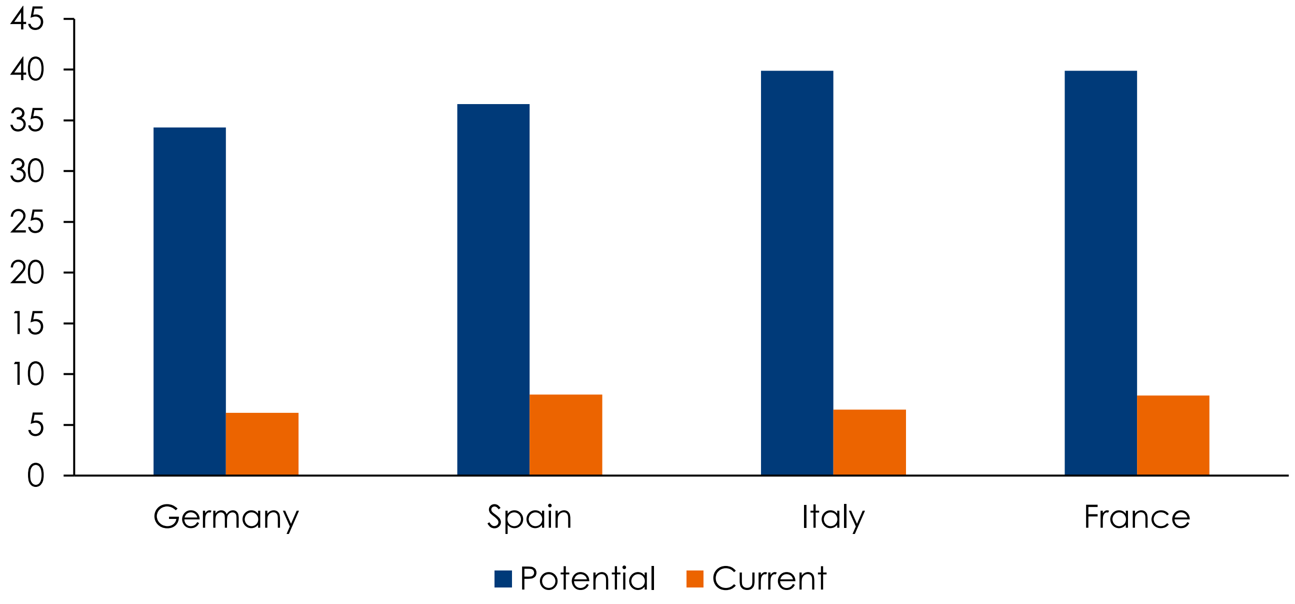
Source: JRC Dashboard (2023)

Location of biobased chemical plants in Europe

Source: JRC Dashboard (2023)

…but we are still very far from the potential

Chemicals that can be and are currently produced with biobased input
(% 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

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Thank you!

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