

PA #4 The Romanian Bioeconomy and supporting knowledge on the transition to a local circular bioeconomy

Romania is a country endowed with a large variety of natural resources (forests, natural gas, fertile agricultural lands—7.5% of utilized agricultural area in EU—brown coal and lignite, crude oil, salt, mineral, silver, gold, and hydrological networks). It is one of the countries with the most pronounced agrarian profile in the EU.

Rural regions cover around 68% of the territory and more than half of the population (around 10 million inhabitants) lives in predominantly rural regions. Agricultural land (more than 13.4 million ha) and forest land (nearly 6.9 million ha) covers more than 85% of the country's territory.

Agriculture and the forestry sectors are the biggest producers of domestic biomass. Bioeconomy is practically the sector that is the most important in terms of share in the active population. However, the economic sector that produce primary bioresources (agriculture, forestry and fishing) and the industries that are processing these bioresources with relatively low added value predominate (for example the food industry).

- The “Field to fork” chain (including two bioeconomy sectors Agriculture and the Manufacture of food, beverages and tobacco) comprised in 2020 about 67% of the added value in the bioeconomy, a turnover of 29 million €, and about 89% of employed persons, the highest number within the EU countries.
- The contribution of the forest-based bioeconomy (Forestry, Manufacture of wood and wooden furniture, Manufacture of paper and paper products) accounted for 23% of the value added, a turnover of 8.8 million € and a 7% of the bioeconomy employment in 2020.
- More labor-productive sectors, such as the Manufacture of bio-based textiles, bio-based chemicals, pharmaceuticals, plastics and rubber, accounted for 7.3% of the value added and 3.5 % of persons employed.
- Fisheries and aquaculture are small but present part of the Romanian bioeconomy, comprising 2% value added and 0.1% of employed persons.

While the availability of biomass from primary sectors or production processes is a strong asset, its logistics are challenging in each of the bioeconomy sectors.

Employment by sector in Romania (2020)
(number of people employed)

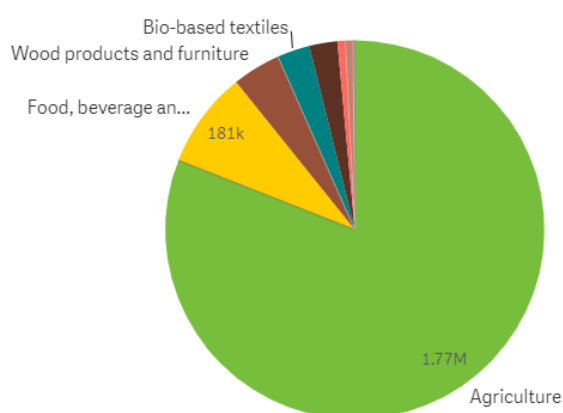


Figure 1: Employment by Sector | Romania

Value added by sector in Romania (2020)
(million €)

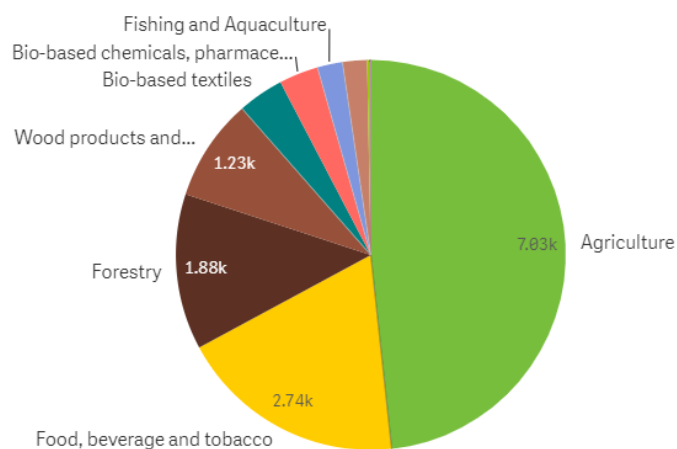


Figure 2: Value added by Sector | Romania

Source: Lasarte López, Jesús; Piotrowski, Stephan; M'barek, Robert; Carus, Michael; Tamošiūnas, Saulius (2022): Jobs and wealth in the EU bioeconomy / JRC - Bioeconomics. European Commission, Joint Research Centre (JRC) [Dataset] PID: <http://data.europa.eu/89h/7d7d5481-2d02-4b36-8e79-697b04fa4278>



Romania recognizes the importance of bioeconomy and the necessity of finding the optimal balance between meeting the food needs of a growing population and the increasing demand for biomass for chemicals and energy.

A strategy on bioeconomy has not yet been released, but there are various policy initiatives towards bioeconomy: the National Strategy for Research, Innovation and Smart Specialization 2022-2027, the Strategy for the development of the agri-food sector 2020–2030, the Romanian Strategy for Competitiveness 2021-2027 and the Integrated National Energy and Climate Plan. Additionally, seven development regions (NUTS 2) have published strategies related to bioeconomy.



Figure 3: Romanian Rural Area

Source: <https://www.unsplash.com/>

Some examples of bio-based solutions: Revolve (a high protein level drink from whey), [NakedSheep](#) (an innovative ecological fertilizer made out of sheep wool), [LanaTerm](#) (thermal insulation for buildings from sheep wool), [GoBioHumus](#) (a natural organic fertilizer, resulting from manure and biological waste), [Biosistem](#) (small-scale bioenergy systems using local biomass), [Greenfill](#) (an all-natural packaging material based on plant starch).



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