PA #12 The Polish Bioeconomy and supporting knowledge on the transition to a local circular bioeconomy

Poland, compared to other EU countries, has a lower-than-average turnover per person employed in bioeconomy. However, its employment shares in biomass producing sectors are above the average. According to the JRC, in 2020, Polish bioeconomy constituted 6% of the EU turnover, and 6% of its value added[1]. The number of people employed in biomass producing and converting sectors in Poland was 34.22M (14% of EU). Among the bioeconomy sectors in Poland, agriculture employs the highest number of people, and the food, beverage and tobacco production has the largest share in the bioeconomy turnover (Figure 29).

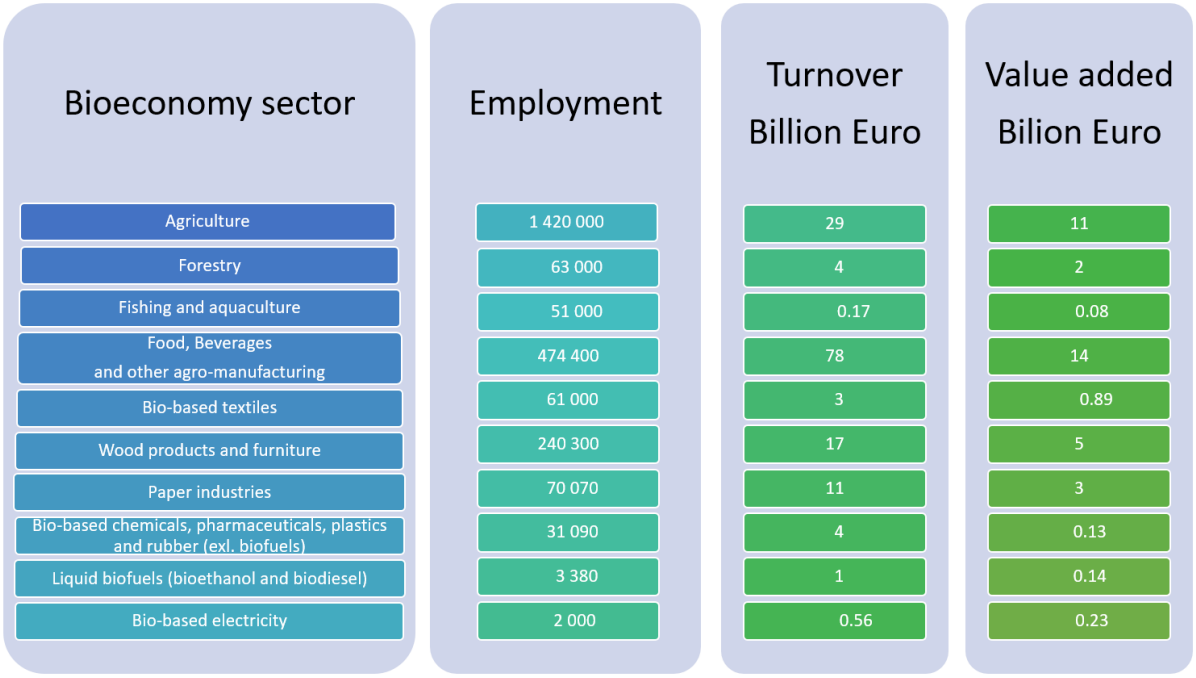

Figure 1: Employment, turnover and value added in bioeconomy sectors in Poland, 2019

Source: JRC Joint Research Centre Data Catalogue:
https://datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html

Poland has a strong potential in the production of raw materials, especially from agricultural and forestry sectors. It has a leading position in EU regarding the largest utilised agricultural area, and one of the largest areas of wooded land and growing stock of forests. Polish forests are the primary source of wood for domestic wood industry.

Agricultural biomass represents the greatest potential. Plant production is the main branch of agriculture, with cereals (7,410,500 ha; 3,552,603 t) and oil plants (1,039,300 ha; 3,217,089 t). An important element of plant production is the cultivation of vegetables (143.2K ha; 3M t) and fruit growing (208.4K ha; 3.9M t), including 151K hectares of apple tree (3M t). Poland has a large residual biomass potential. The surplus of straw, taking into account the local straw-manure exchange between farms of various types of production, amounts to 7,199.2K t. The total potential of manure from livestock farms amounts at 11M [t]. Agri-food processing (biowaste) generates large amounts of organic waste that can be used in the production of biofuels, animal feed or nutrient recovering. The main waste generated in the dairy industry is whey of which about 15% is processed further. The majority of municipal waste generated in Poland is still disposed of through landfilling (42%) or used for thermal conversion (25%), then recycled (27%) and composted (7%).

[1] Source: JRC Joint Research Centre Data Catalogue (https://datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html)

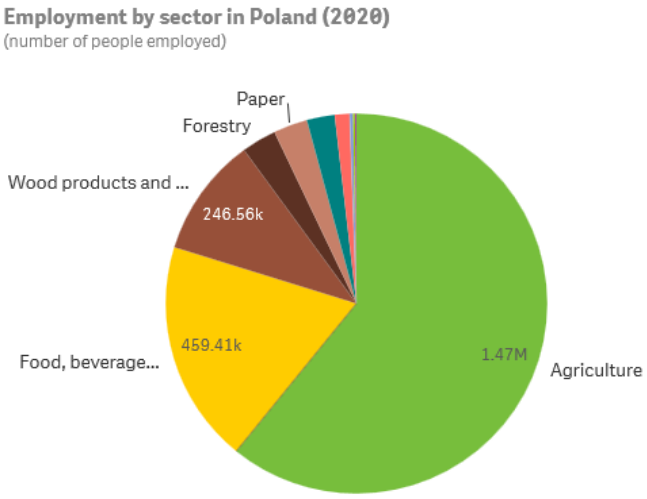

Figure 2: Employment by Sector | Poland

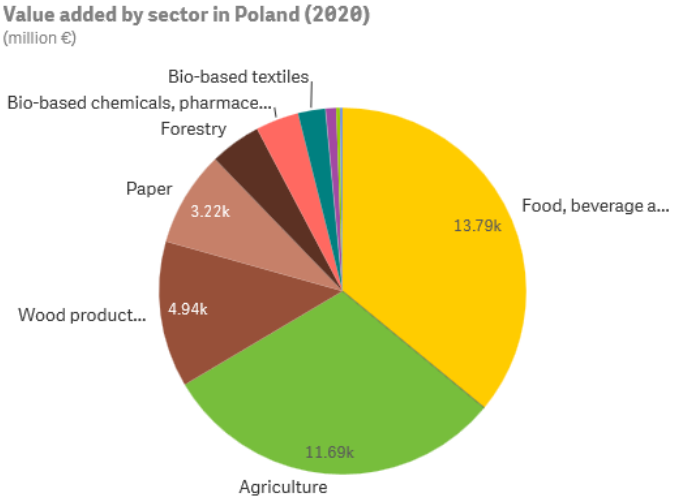

Figure 3: Value Added by Sector | Poland

Source: JRC Joint Research Centre Data Catalogue: https://datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html

Aquaculture sector, recognized by the European Green Deal as a source of "low carbon" protein for food and feed, represents 0.2 % of value added in Polish bioeconomy. Poland uses the largest areas of terrestrial carp ponds in the European Union. The main fish species by volume are carp (17 364 t) and trout (11 419 t.).

Figure 4: Rural area in Poland
Source: iStock, Photo ID: 1323196177 (https://www.istockphoto.com/)

There is still unused potential in the majority of bioeconomy sectors in Poland, for instance, renewable energy sector development. An already existing manufacturing chain for the production of biofuels and biomass streams from agriculture, forestry and hunting, fisheries & aquaculture offer adequate potential for advanced energy use. Poland is, therefore, in need of a dedicated strategy for bioeconomy development, to adequately use the untapped potential of all the above sectors.

For now, there are several national policies referring directly or indirectly to the bioeconomy issue, such as:

- National Energy and Climate Plan for the years 2021-2030 (2019);
- Roadmap on circular economy (GOZ) – (2019);
- Strategy for Sustainable Rural Development, Agriculture and Fisheries 2030 (SZRWRiR 2030) – (2019);
- 2030 National Environmental Policy (PEP2030) – (2019).

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