



EVOLUTION AND PROSPECTS OF AGRICULTURAL BIOMASS IN THE EUROPEAN UNION AND ROMANIA

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Abstract: The study analyzes the evolution of agricultural biomass supply in the EU-27 and Romania during the period 2008–2020. The data show a rising trend, peaking at 714 million tons in the EU in 2020, of which 95% came from agricultural crops, with Romania contributing 4.9%. Forecasts indicate an increase until 2025, followed by a decline by 2030, influenced by climate change and agricultural policies. The importance of sustainable practices and investment in ecological technologies is emphasized.

Introduction

Amid rising global resource consumption and ongoing energy challenges, accelerating the shift toward renewable energy sources has become imperative. Within this context, agricultural biomass emerges as a key component of the European Union's energy strategy, offering a viable alternative to fossil fuels.

Material and method

- This study analyzes the supply of agricultural biomass in the EU-27 and Romania using data from Eurostat and the European Commission for the period 2008–2020.
- The research methods include descriptive analysis, comparative analysis between EU-27 member states, and long-term forecasting based on historical trends.

Results and discussions

EU-27:

- Total: 714.22 million tonnes of dry matter
- 95% domestically produced, 5% imported
- Sources: 70% from crop production (biofuels, food, feed); 13% from residues (energy, organic fertilizers); 13% from grazing (livestock)
- Main producers: Germany, France, Italy, Spain, Poland
- Top importers: Italy, Germany, Netherlands

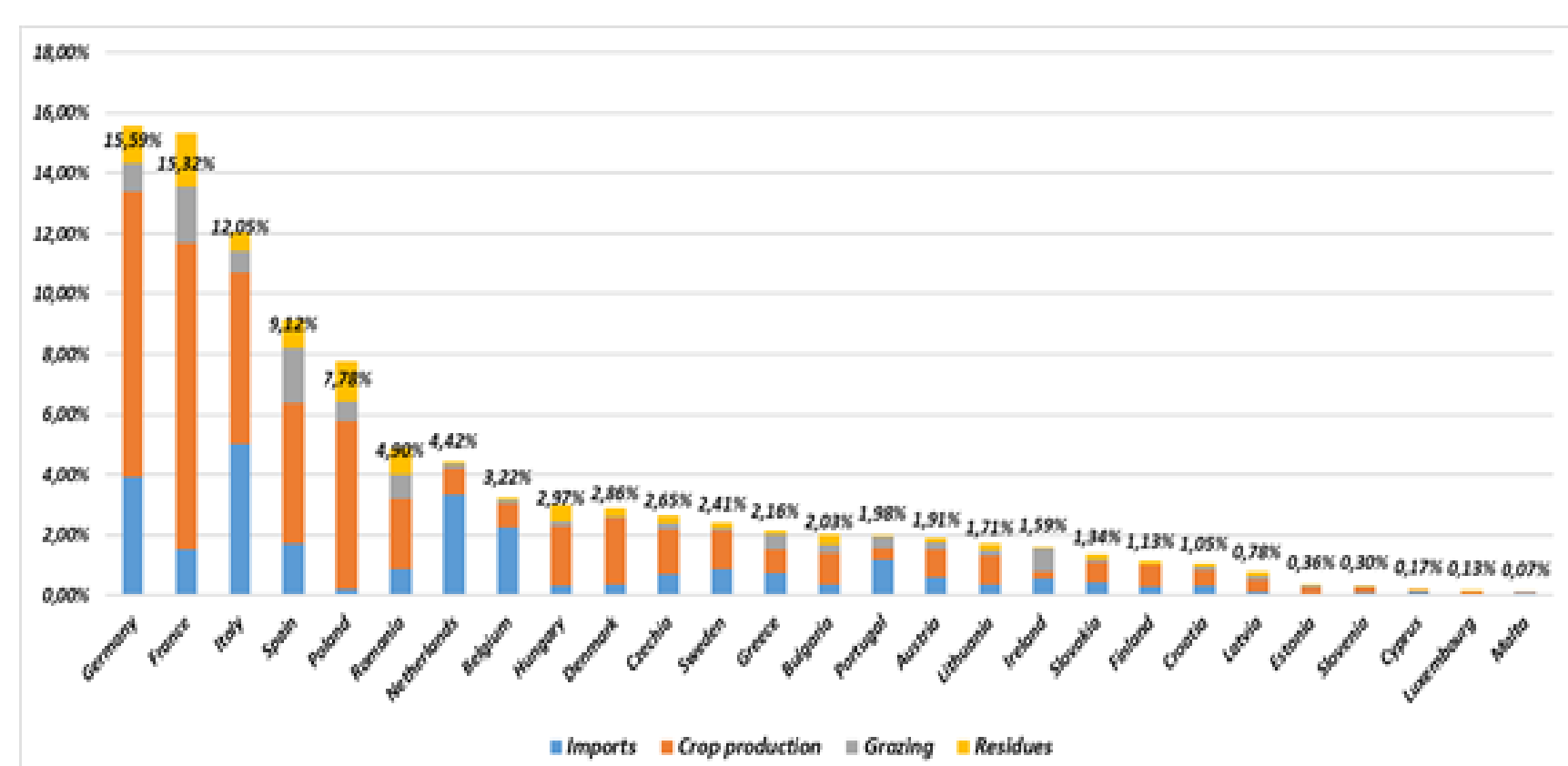


Figure 1. Biomass supply from agriculture, (%), 2020

Source: processing data

Romania:

- 6th place in the EU: 4.9% of total EU biomass
- 7% increase compared to 2008
- Sources: 47% crops, 18% residues, 17% grazing, 18% imported
- Composition: 72% cereals, 13.5% oilseeds, 8% fodder

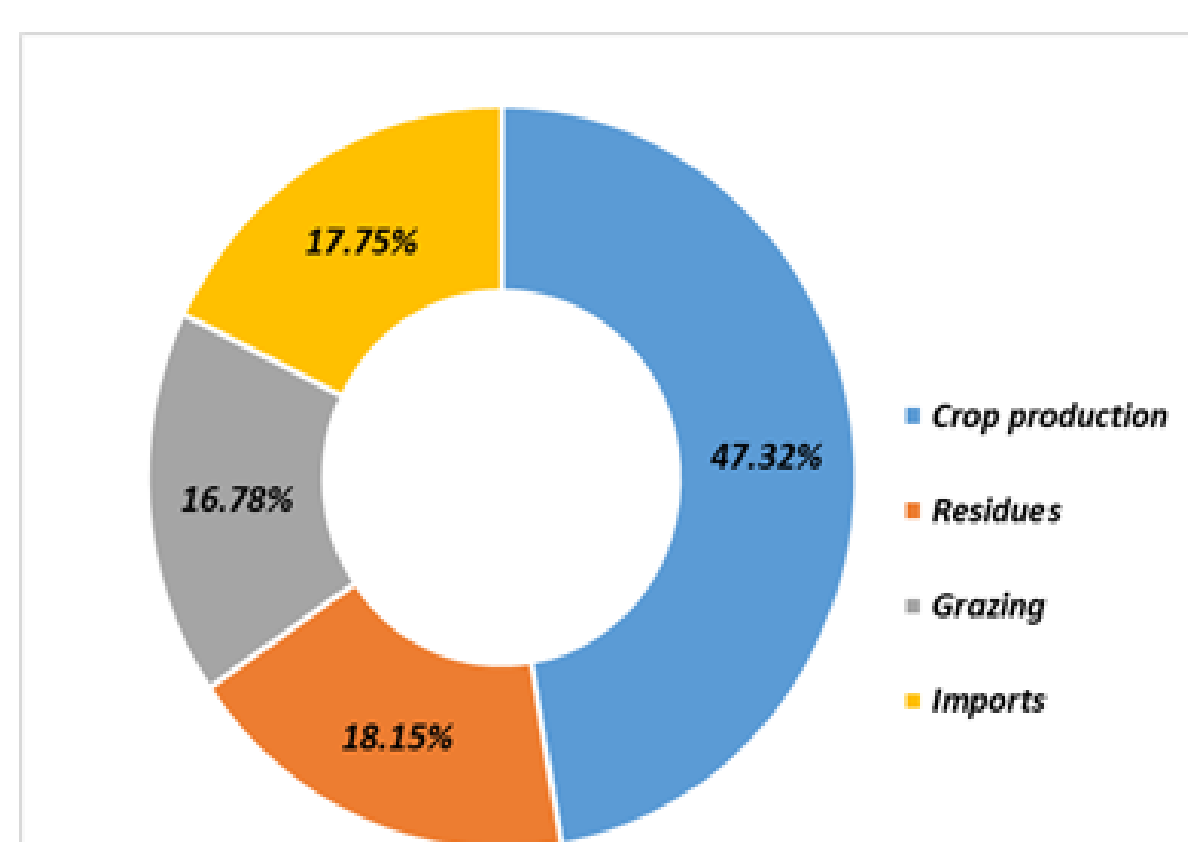


Figure 2. Agricultural biomass sources, Romania, 2020

Source: processed data

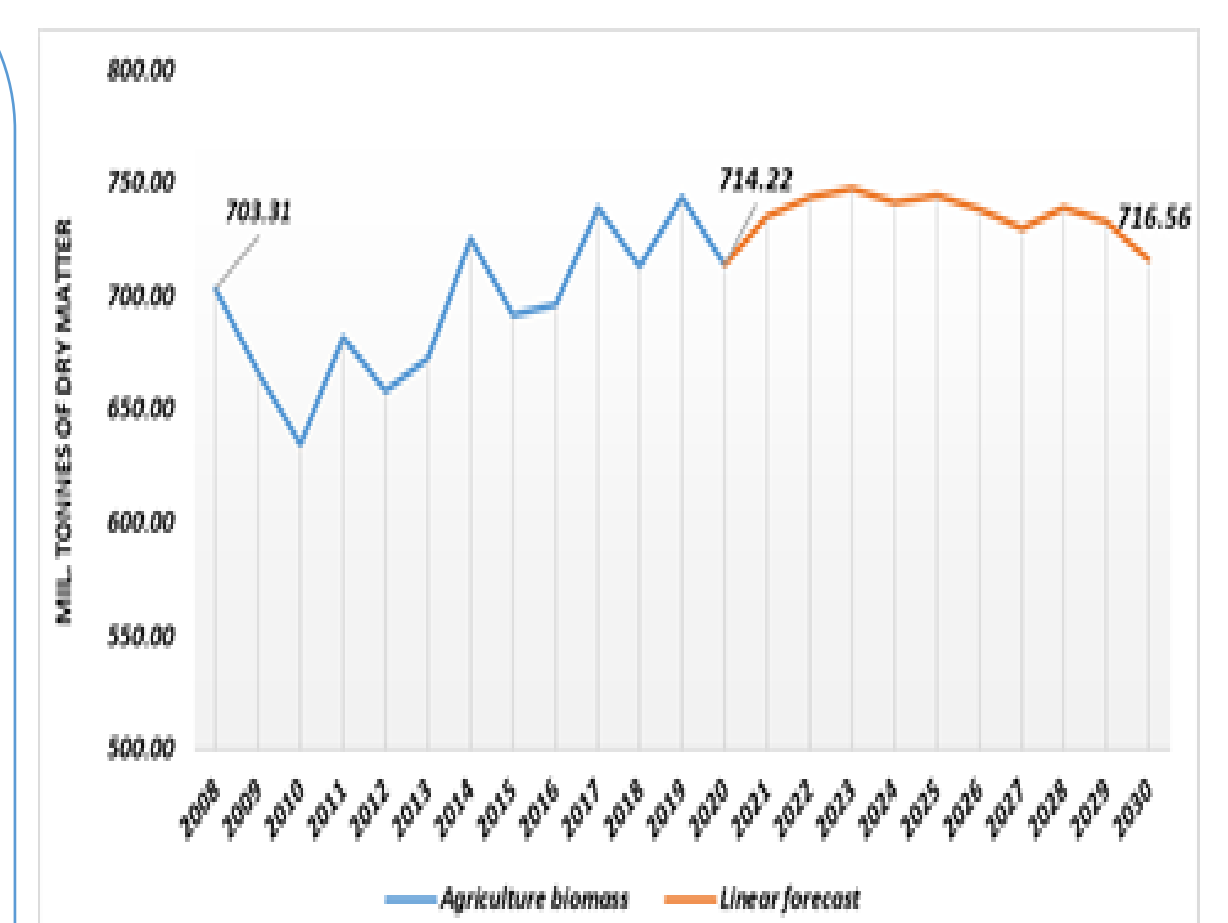


Figure 3. Forecast EU-27, supply agricultural biomass.

Source: processing data

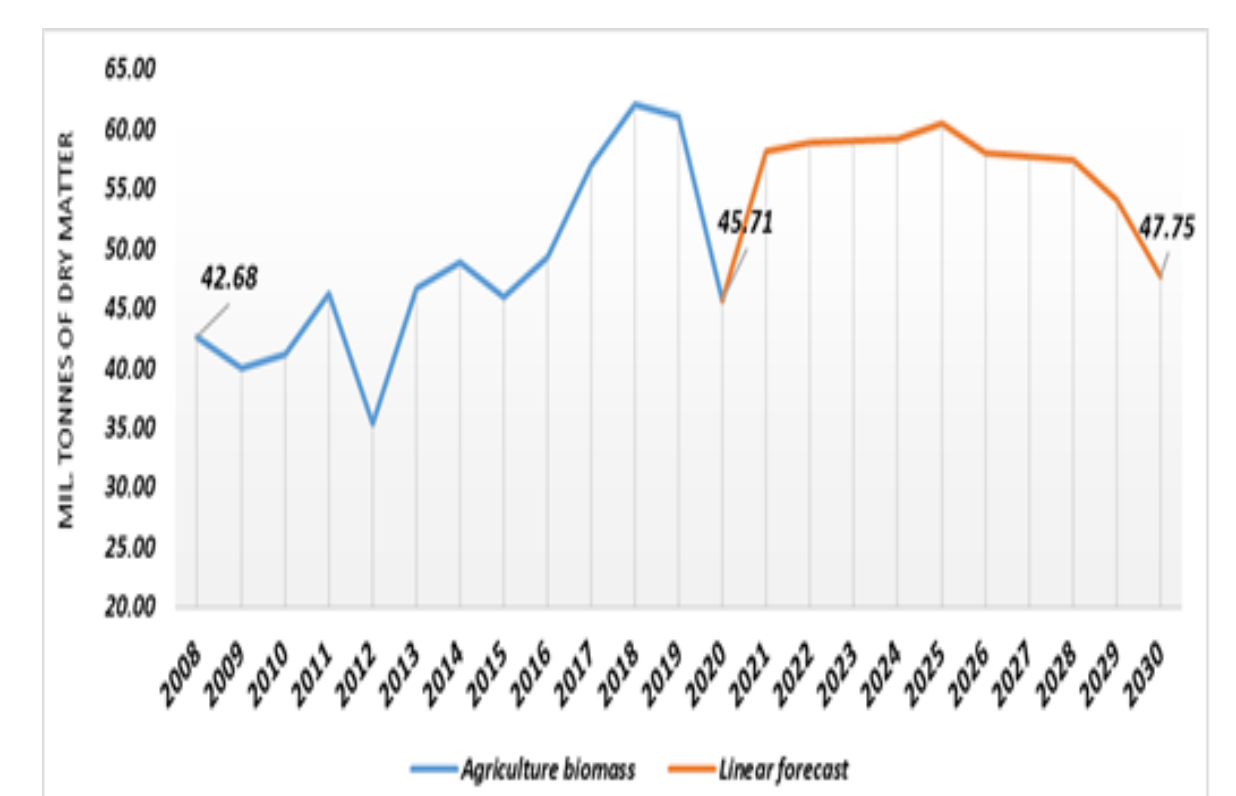


Figure 4. Forecast Romania, supply agricultural biomass.

Source: processed data

Conclusions

Agricultural biomass production has increased moderately in the EU-27 and Romania (2008–2020), being dominated by crops, residues, and pasture.

A decline is projected by 2030 due to climate change and regulations, necessitating the adoption of sustainable farming practices and eco-friendly technologies.

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