

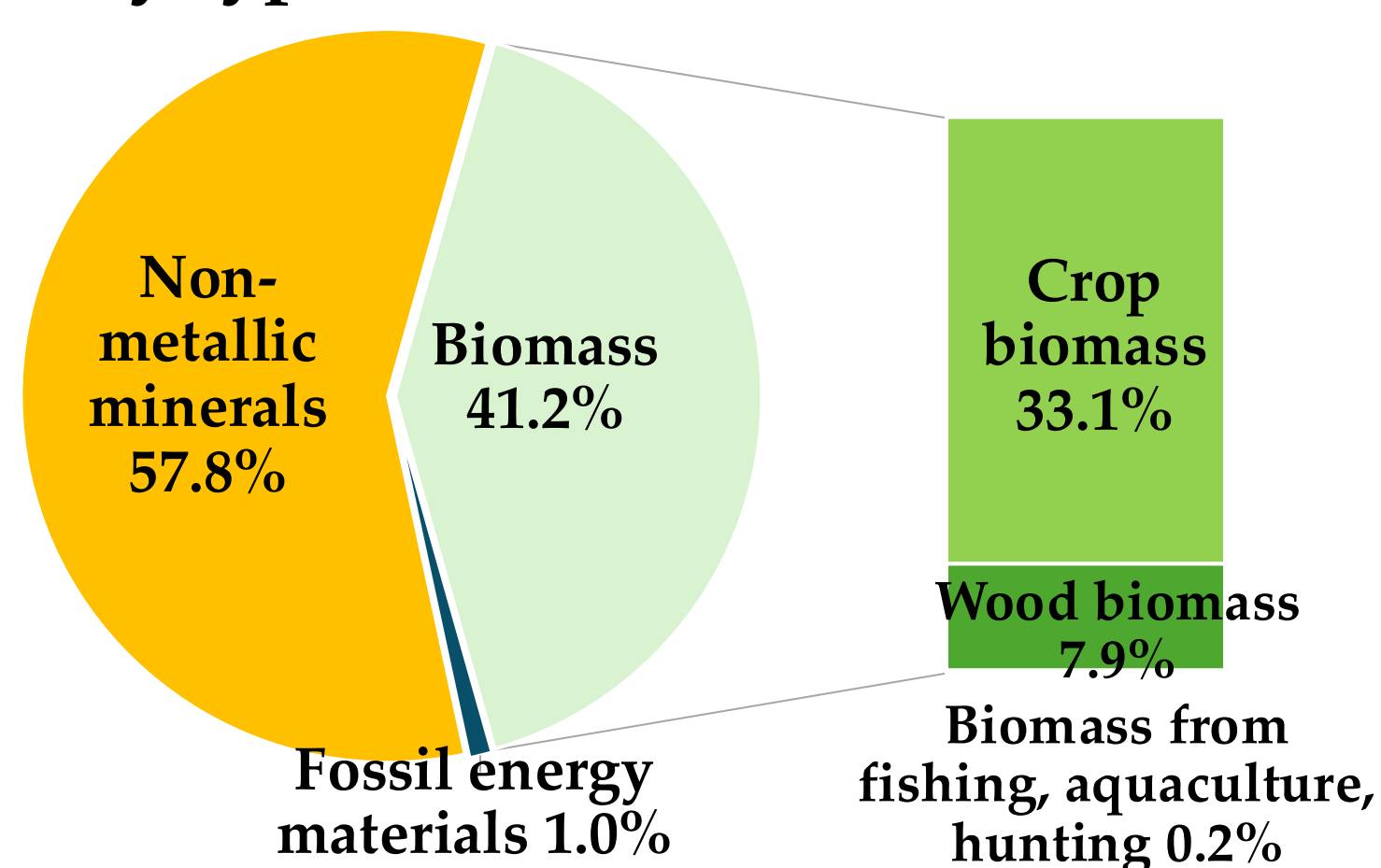
Accelerating the Lithuanian circular bioeconomy using unexploited biomass potential

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Extraction of primary biomass in Lithuania

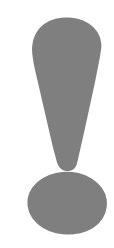
In Lithuania, up to 22.5Mt of primary biomass is extracted per year, accounting on average for about 40% of total domestic materials extraction (2021-2023). Primary biomass is the main source of local natural materials for the development of the national manufacturing industry and bioenergy, bearing in mind that other local materials (non-metallic minerals, such as sand, gravel, gypsum, chalk, dolomite and limestone) are used only for construction. A minimal amount of energy materials is extracted from the depths of the country's earth.

Breakdown of material extraction by type in Lithuania (2020-2022)



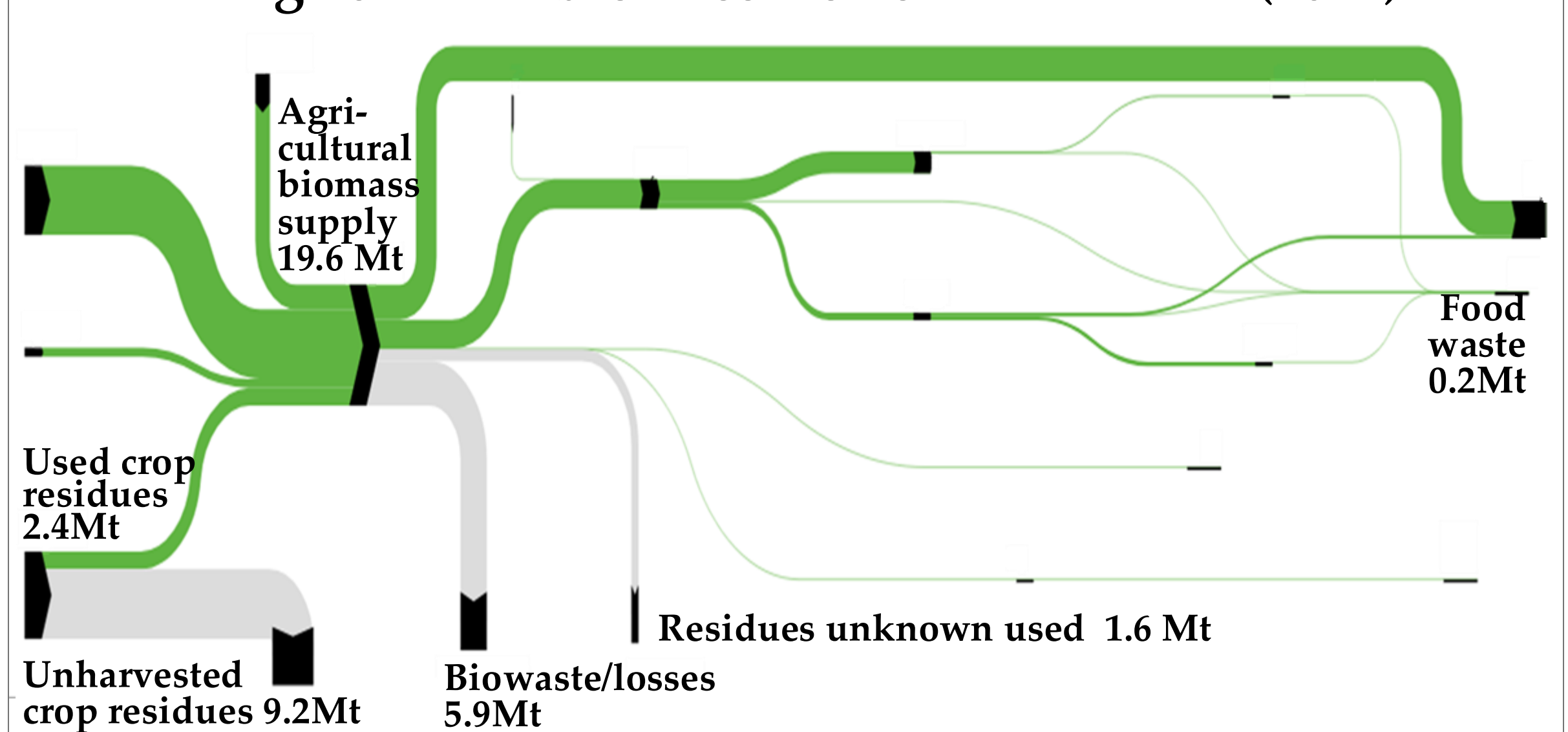
Source: Own calculation based on the Material flow accounts data from the Eurostat database

Several issues related to the extraction of primary biomass and its underutilisation in the national economy are explored.



Lithuanian agriculture generates almost 11.6Mt of crop residues each year, of which about 9.2Mt (almost 80%) remain unharvested, and less than 2.5Mt are used in the economy. In addition, almost 6Mt (about one third) of the primary biomass offered on the market is lost or used for unknown destinations.

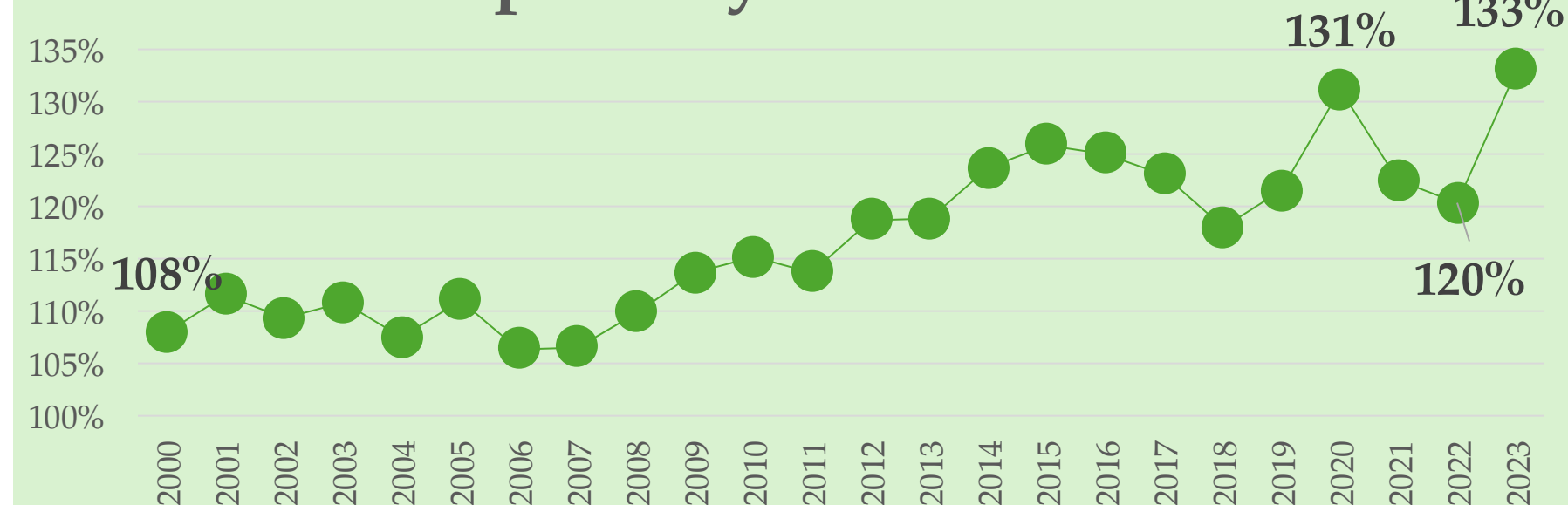
Unused crop residues and biowaste in agricultural biomass flows in Lithuania (2021)



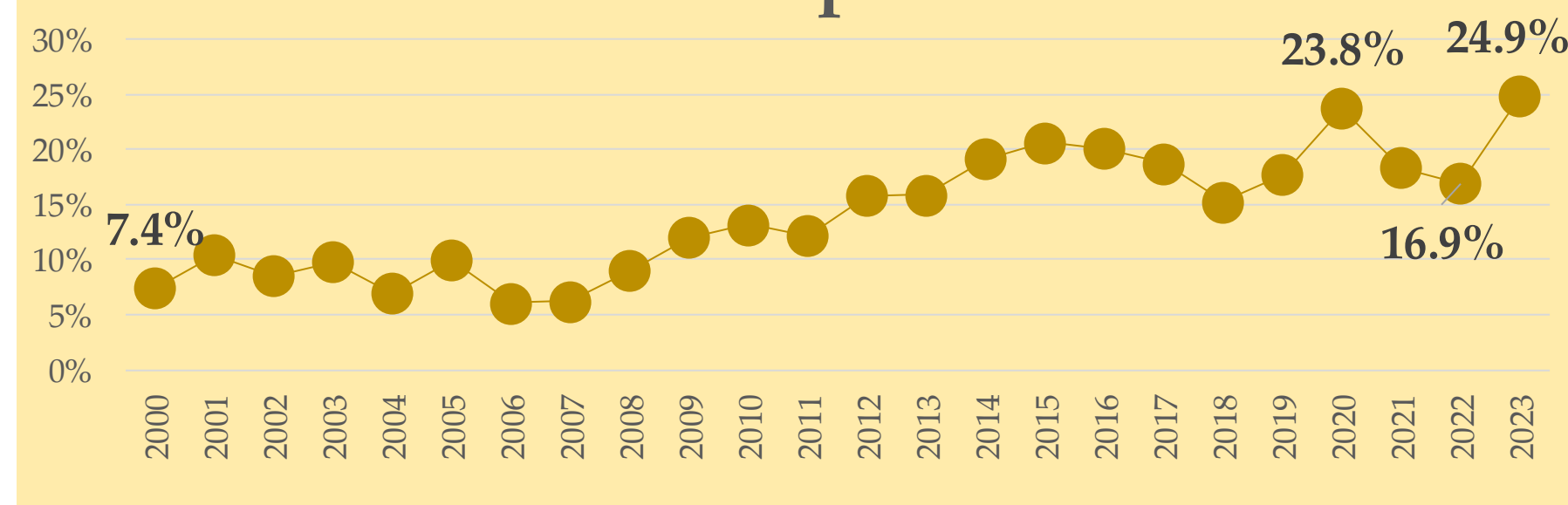
Source: Own composition based on the data from the European Commission's Data-Modelling platform of resource economics

Distribution of primary biomass in Lithuania

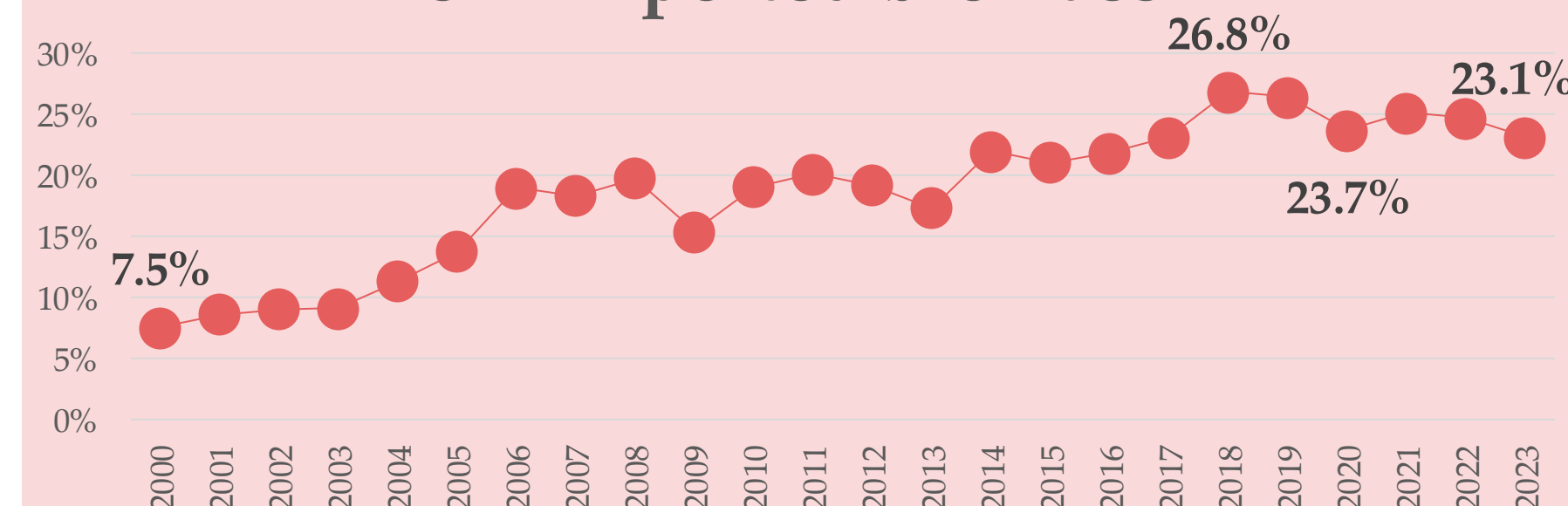
Lithuanian self-sufficient in primary biomass*



Share of biomass net exports** from domestic production



Lithuanian economy's dependency from imported biomass***

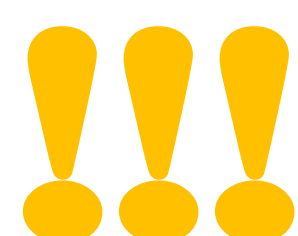


* Biomass self-sufficiency refers to the proportion of domestically extracted biomass compared to the total domestic consumption of biomass; ** biomass net exports are calculated by subtracting biomass imports from exports; *** import dependency measures the percentage of imported biomass in relation to the total direct input of biomass into the national economy.

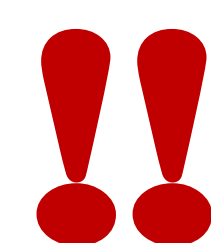
Source: Own calculation based on the Material flow accounts data from the Eurostat database.



Lithuania extracts one-third more primary biomass than it consumes in the domestic economy. Meanwhile, cereal yield exceeds domestic consumption by more than three times; however, only less than a fifth of it is used for industrial recycling. Lithuania is among the leaders in the EU in terms of self-sufficiency in primary biomass of local origin (133% in 2023), followed by Latvia, Estonia, Czechia, Bulgaria and Finland (255%, 179%, 148%, 143% and 136% respectively).



Lithuania exports about a quarter of its primary biomass of local origin. Meanwhile, net exports of cereals represent up to three-quarters of their total harvest. Lithuania primary biomass exports an increasing share of the extracted every year, instead of using it to produce high-value-added intermediate and final products in the domestic economy thus generating higher income. It continues to export inexpensive biomass raw materials and fails to fully utilize its local biomass potential to develop the domestic bioeconomy.



Lithuania's bioeconomy is increasingly dependent on primary biomass imports. Lithuania increasingly imports primary biomass annually, which could be substituted with locally extracted biomass. Moreover, Lithuania has numerous unused crop residues, grazing fodder and biological waste generated during processing and other stages of the biomass value chain. As a result, the country's dependence on biomass imports is increasing, instead of using biomass materials of local origin.



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