

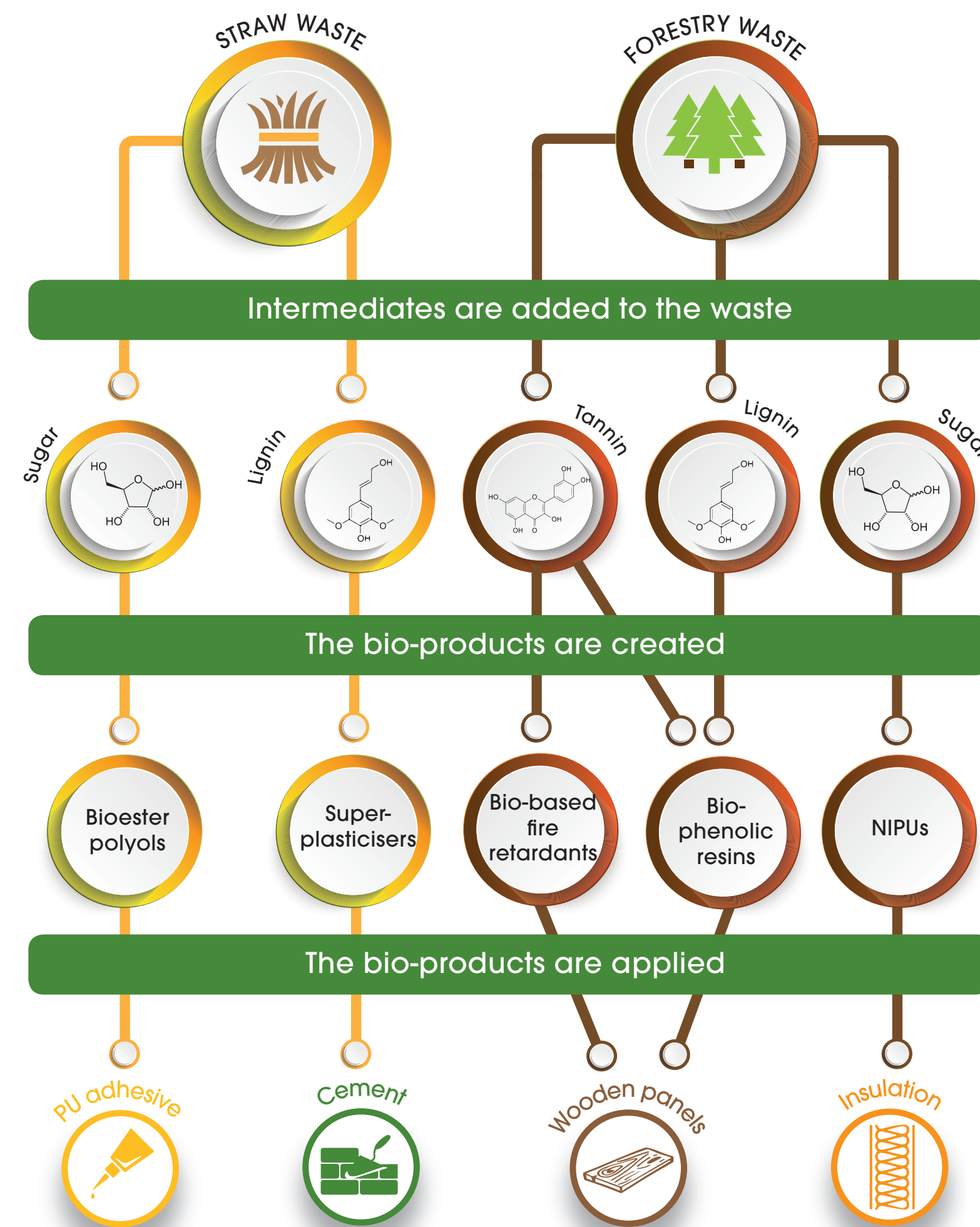
RAW MATERIAL POTENTIAL FOR BIOPOLYMERS IN EUROPE - LARS WIETSCHER, ANDREA THORENZ, AXEL TUMA

INTRODUCTION & OBJECTIVE

The **Rehap** project aims to strengthen the European bioeconomy industry by creating novel materials from agricultural and forestry waste, and will demonstrate how they can be used commercially in the green building sector.

The project is substituting petrochemicals found in chemical products with natural building blocks found in biomass components, such as lignin, cellulose, hemicellulose and tannin.

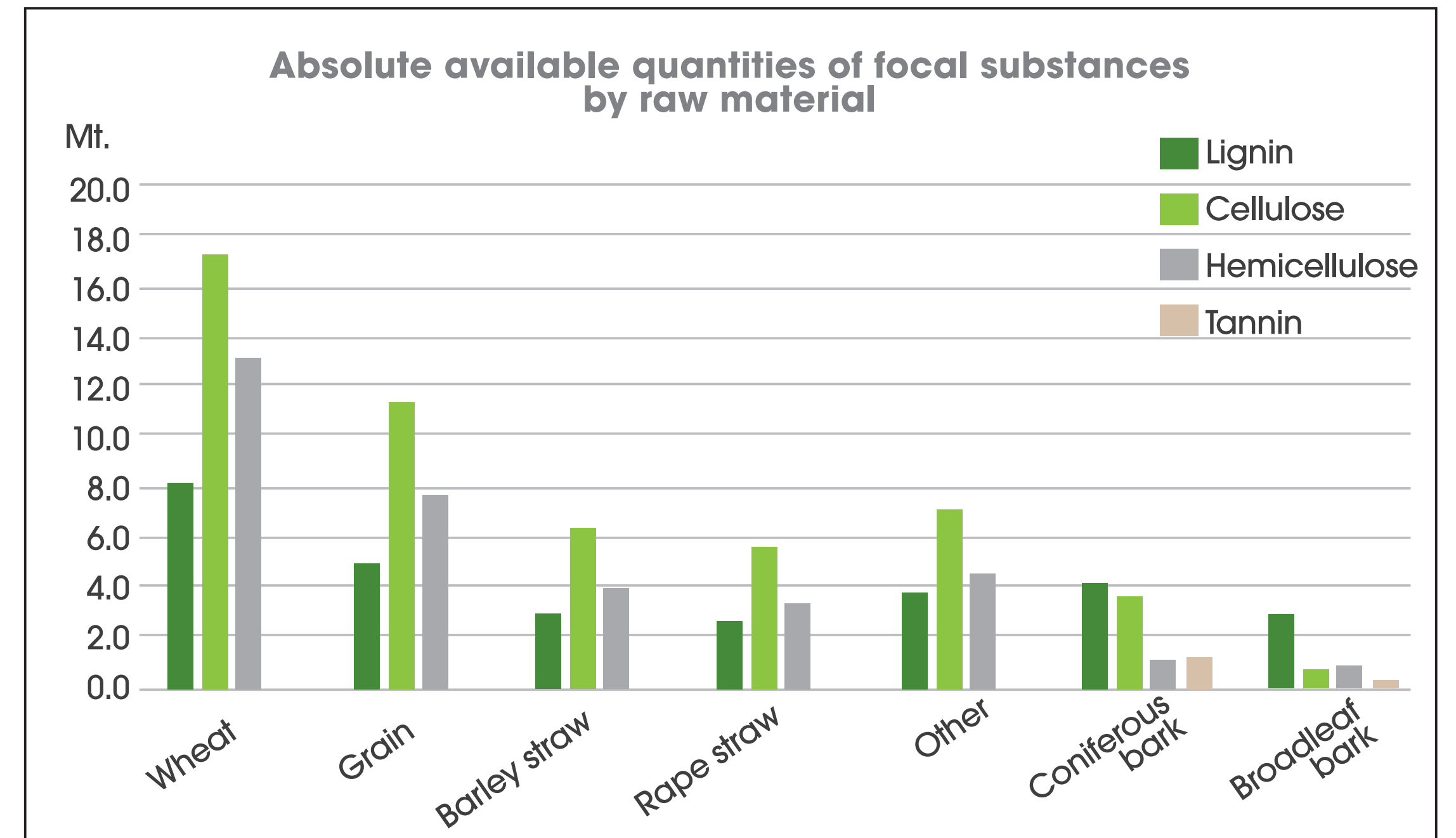
The University of Augsburg's role in **Rehap** is to analyse the prevalence of underutilised agroforestry residues such as agricultural by-products (harvesting residues) and residues of the forestry and wood industries.



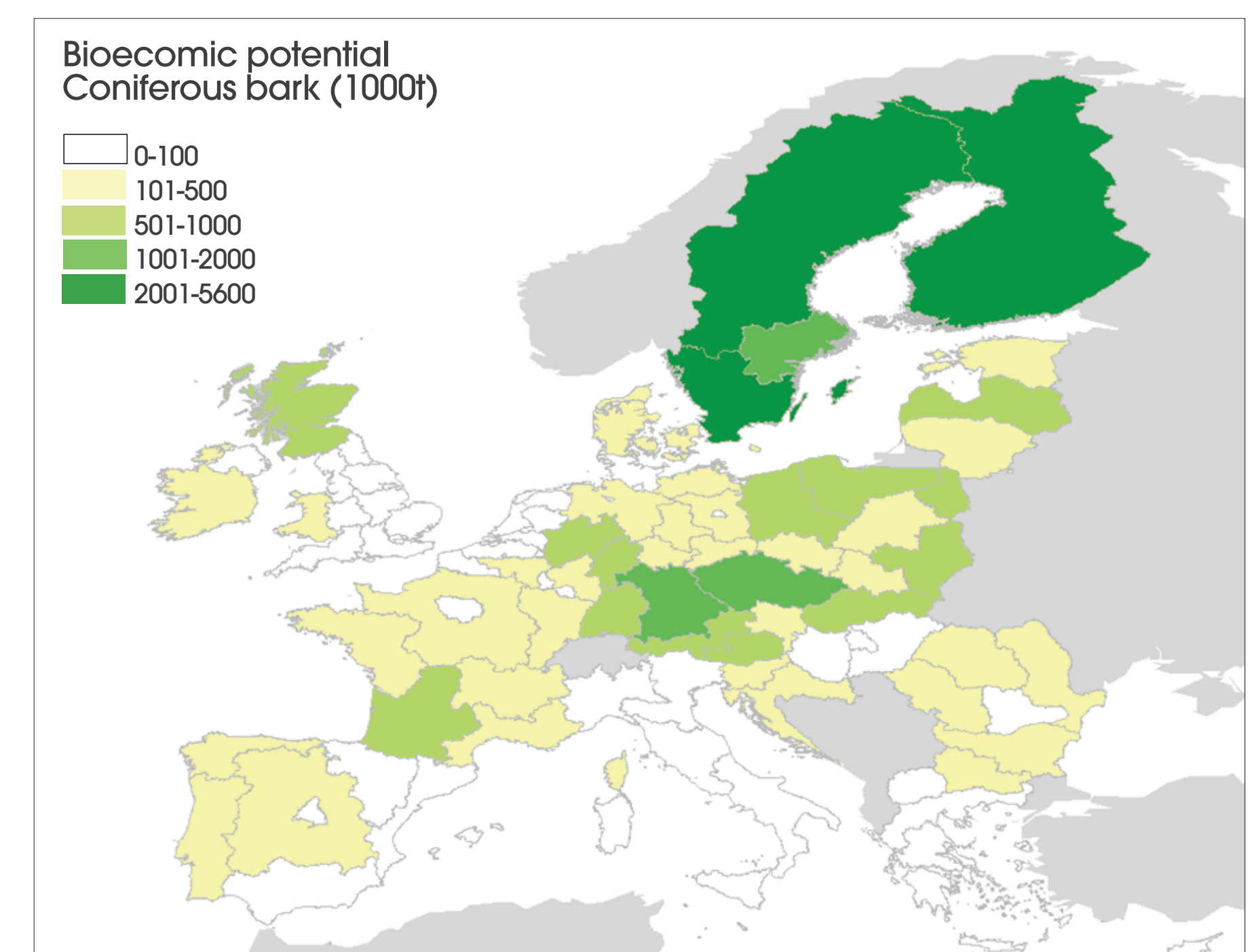
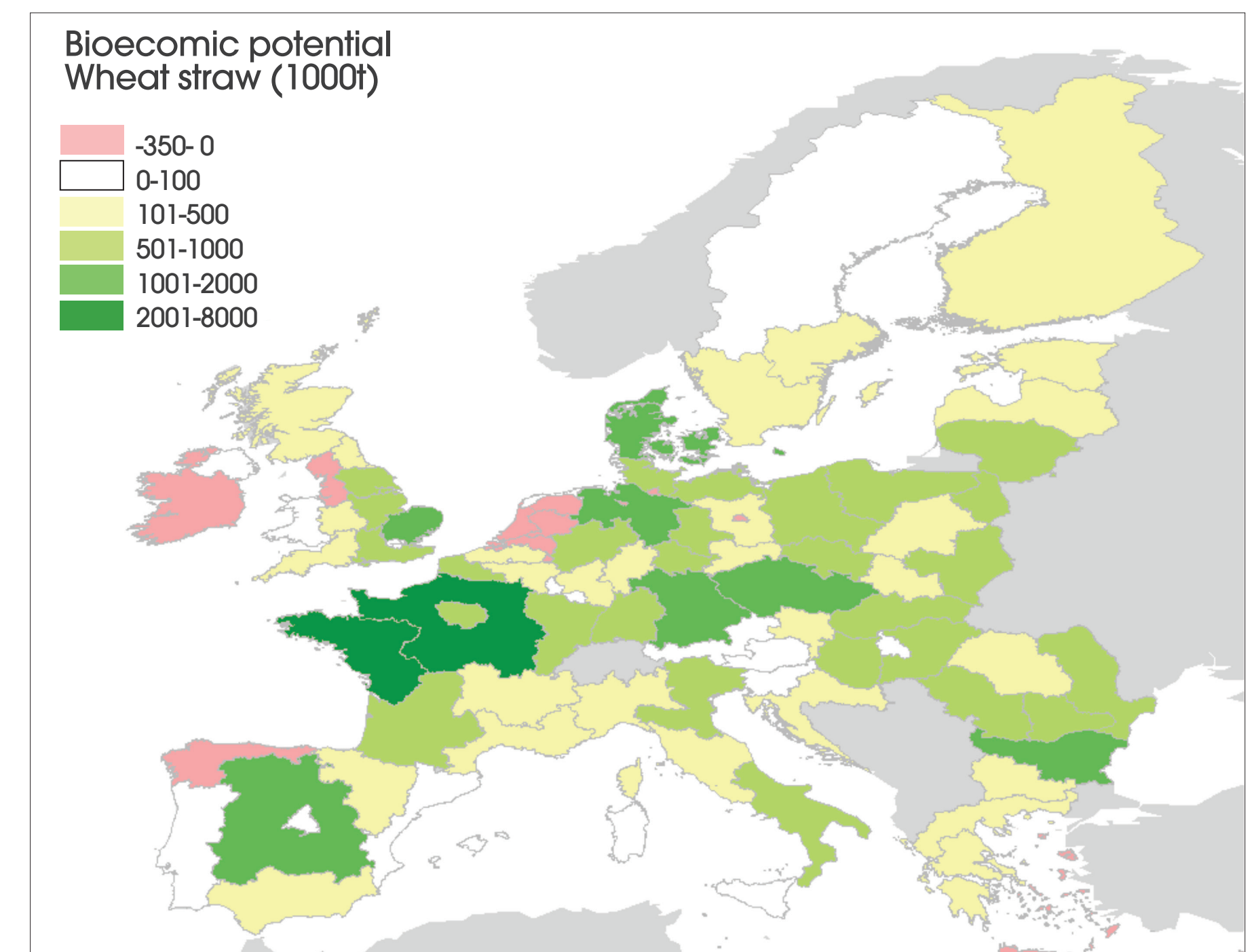
RESULTS & DISCUSSION

WHICH AGROFORESTRY RESIDUES SHOW THE LARGEST POTENTIAL?

Wheat straw is the most important agricultural residue with a bioeconomic potential of 46 Mt in the EU-28, followed by maize stover (31 Mt), barley straw (16 Mt), rape straw (14 Mt) and sunflower straw (10 Mt). In the forestry sector, coniferous bark represents the most promising source with a bioeconomic potential of 15 Mt.



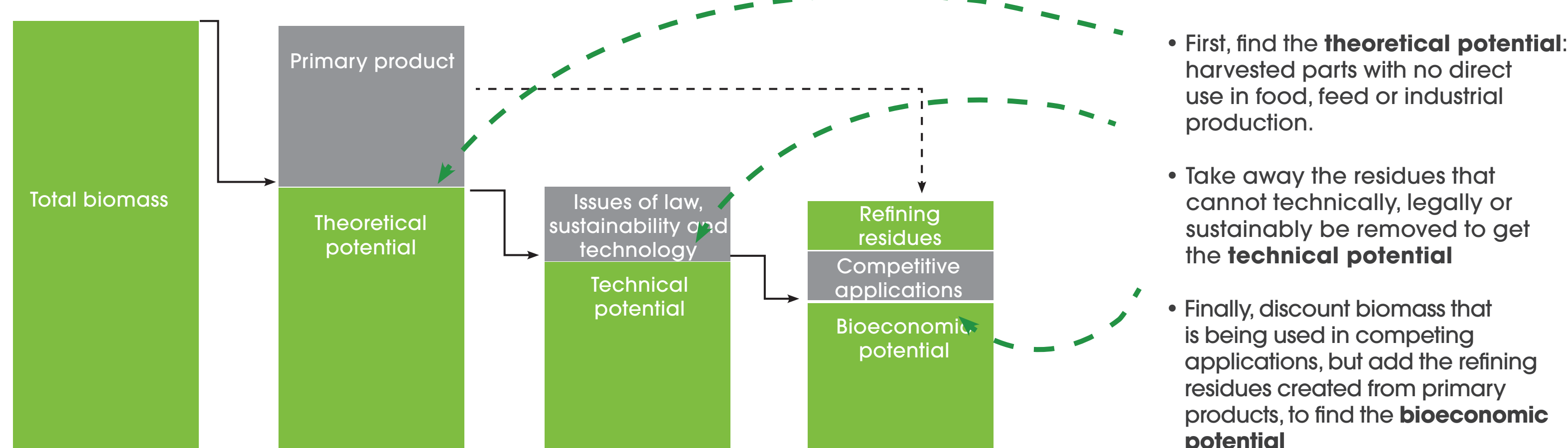
Regional bioeconomic potentials of Wheat straw and Coniferous bark



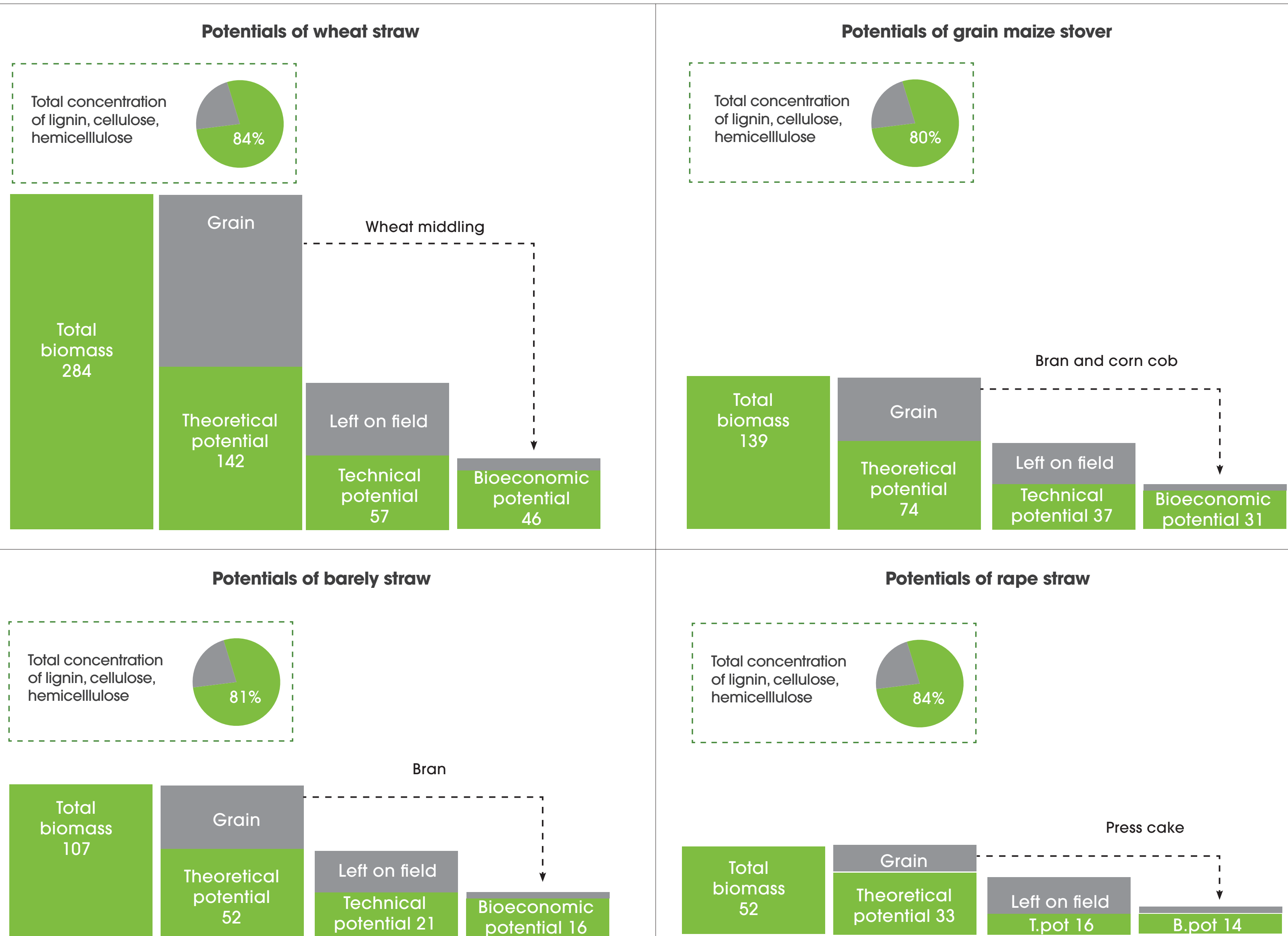
MATERIALS & METHODS

WHICH AGROFORESTRY RESIDUES SHOW THE LARGEST POTENTIAL?

A three-step approach is used to find the bioeconomic potential of a particular source of biomass



Potentials of selected agricultural commodities using the three-step approach



CONCLUSION & OUTLOOK

There are underutilised agricultural and forestry residues in the EU that can be used for high added value products. The potentials of available residues are regionally different, with a concentration of residue straws in Central and West Europe and a concentration of forestry residues in Scandinavian countries.

NEXT STEPS

- Forecasting of future waste arising in agriculture and forestry by means of statistical methods based on historical data.
- Design of a European Supply Network for the transformation of agroforestry residues into high added value products by means of mathematical optimisation.
- Elaboration of roadmaps for waste management integration in the **Rehap** processes. Optimal strategies will be developed by MILP and will address the research insights of the other work packages in the project (**Rehap**)