

The definition and measuring of the bioeconomy in the global economy

Topic: Input-Output Modelling: Sustainable Production and Consumption Policies - IV

Author: Carlos Andres Lopez-Morales

Co-Authors: Miriam Boyer

The bioeconomy can be defined as a project involving the promotion by the private sector and by some governments of particular technologies based on biogenic resources that are thought of as being renewable and therefore instrumental for responding to the climate and the ecological global crisis. Understanding the current significance of the bioeconomy has motivated several studies measuring its current size relative to economic systems. Existing estimates for the bioeconomy find that the bioeconomy in Europe is dominated by activities in agriculture, food and beverages, bio-based chemicals and pharmaceuticals, making up 6% of the region's gross domestic product (GDP) while employing around 18 million people. Similar estimates put the size of the bioeconomy in the United States at 6% of its GDP, while other studies feature slightly higher estimates: bioeconomic activities in Europe have a relative size in the range between 2% and 17% of national GDP. What it is that these estimates actually measure? Traditionally, economic sectors related to the direct use of natural resources do not make up huge portions of an economy's GDP, so we can ask whether the bioeconomy has reached its intended size already, or if it is still in the earlier stages of a longer period of expansion. By looking at the existing literature, this paper provides a critical assessment of existing definitions and methodologies for measuring bioeconomic activities, and explores the possibilities of providing measures based on input-output economics and databases. In particular, the paper argues that measuring the bioeconomy calls for a clearer understanding of alternative technologies going beyond the traditional classifications of economic sectors that constitutes the accounts of an input-output table.