

BIOECONOMY AND SOCIETY – SOCIAL ASPECTS OF BIOPLASTIC PRODUCTION

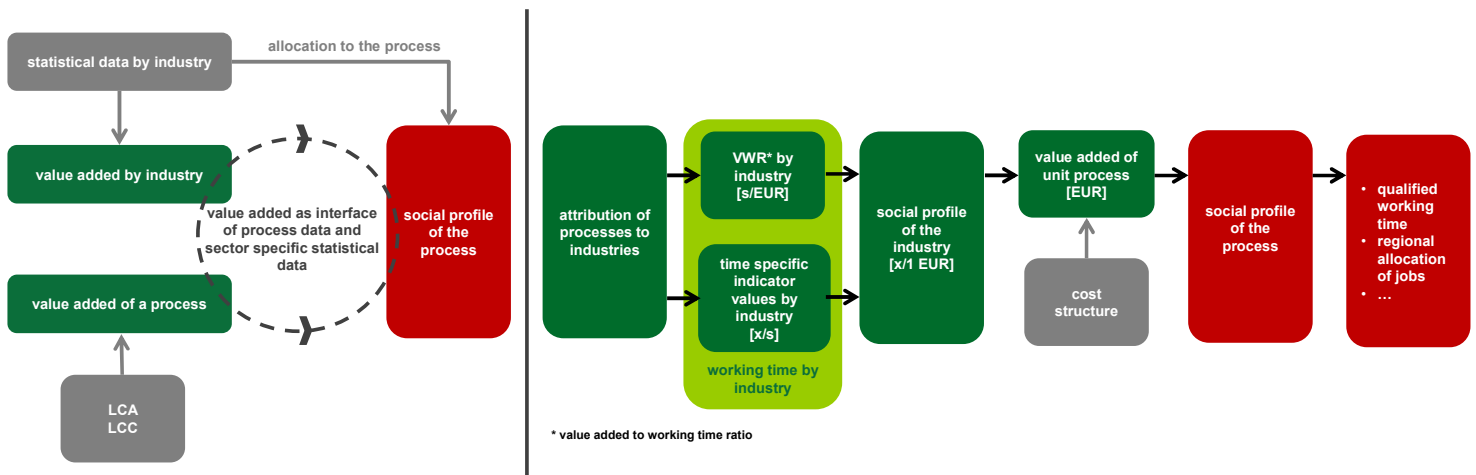
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Introduction

The concept of bioeconomy aims for a holistic and sustainable transformation of economy and society. This means not only substituting fossil resources and reducing emissions but also creating benefits for different stakeholders such as workers and consumers or avoiding risks for these groups respectively. This topic is addressed by the research platform BiNa funded by the German Federal Ministry of Education and Research (BMBF). Economic and social aspects of the production of bioplastics are systematically evaluated and analyzed from the production of the raw materials to the final plastic parts within the scope of the subproject Socio-Economics under the lead of Fraunhofer IBP in cooperation with IfBB.



BiNa research platform

The research platform "New pathways, strategies, business and communication models for bioplastics as a building block of a sustainable economy" (BiNa) aims to identify prospects and obstacles of bioplastics as a part of a growing bio-economy. This objective is elaborated within two scopes:

- Research of political and communication issues
- Assessment of sustainability of bioplastics using the life cycle approach with focus on the production phase

The overall goal is to formulate guidance for different stakeholders.

Objectives

The sub-project Socio-Economics focuses on the assessment of economic and social impacts of bioplastic value chains. The aim is to identify and evaluate relevant indicators to address questions such as

- What are cost drivers across the value chain?
- What influence have energy costs on the cost structure of the value chain?
- Is there a rural development or regional shift of added value due to the substitution of fossil resources?
- Do workers benefit from job creation?
- Do qualification requirements change for workers in bioplastic production compared to conventional production?

Method

The objectives of the sub-project are evaluated using the methods of Life Cycle Costing (LCC) and Life Cycle Working Environment (LCWE). Both methods are based on the flow and energy models used for Life Cycle Assessment (LCA). This allows a process based assessment of socio-economic indicators and a holistic view on the sustainability of value chains.

Sector specific statistical data is allocated to the process by conducting the following steps with LCWE:

- Attribution of process to industry
- Attribution of value added and indicator value to working time
- Calculation of social profile of industry
- Allocation of social profile to process by value added of the unit process

Next steps

- Selection of socio-economic indicators regarding data availability and their relevance for bioplastics and the bio-economy
- Validation of indicators with partners from science and industry
- Application of the extended LCWE approach in case studies



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