

Project *brief*

Thünen Institute of Forestry

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Monitoring the bioeconomy of Uruguay: bio-based value chains and related sustainability effects

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- A material flow based bioeconomy monitoring approach developed for Germany was applied to monitor Uruguayan bio-based material flows as well as related sustainability effects.
- The monitoring reveals the importance of beef, soybean and pulp production for employment and value-added generation, the high GHG emissions generated in livestock farming and pulp production and the relevant agrochemicals use in soybean production.
- Data availability, data gaps and data aggregation, especially in environmental statistics, remain the main challenges towards a long-term bioeconomy monitoring

Background

The transition from a fossil-based economy towards a more sustainable and renewable bioeconomy is a goal expressed in the global agenda. In order to track the progress to a sustainable bioeconomy, the development of a monitoring system is a prerequisite. Uruguay has been selected as a pilot country for the Food and Agriculture Organization (FAO) project "Towards sustainable bioeconomy guidelines", aiming to support countries in the development of monitoring systems.

Methodology

The bioeconomy monitoring approach by the Thünen Institute originally developed for Germany includes two different components: i) monitoring of material flows and ii) monitoring of bio-based sectors detailed in (see Gordillo et al 2022; DOI:10.3220/PB1672741297000). The monitoring of material flows provides a more detailed picture of bioeconomy at value chain level. It describes and quantifies the flow of biomass from harvesting to final use and associated sustainability impacts. The monitoring covers *Eucalyptus* pulp, beef and soy. Additionally, milk powder and fisheries were analyzed.

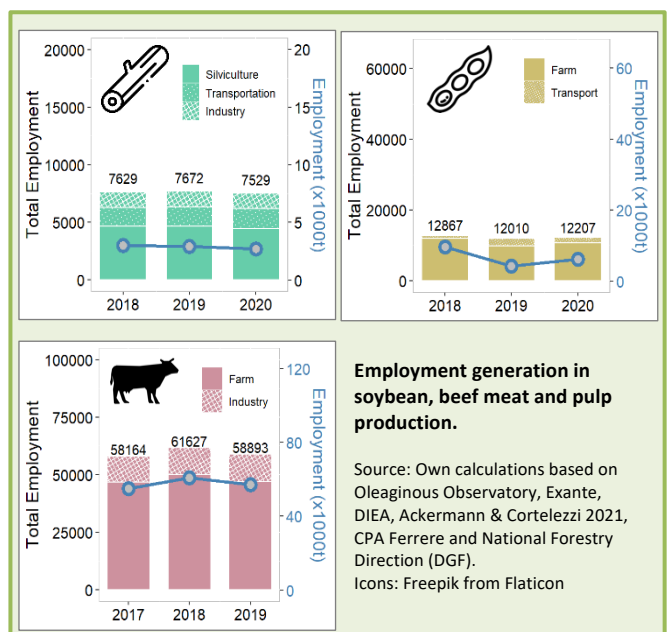
Results

The monitoring of the material flows reveals the importance of beef, soybean and pulp production in terms of employment and value-added generation in the Uruguayan bioeconomy; it confirms that livestock farming is the biggest source of GHG emissions and dominant land use; it shows the potential to increase energy efficiency of pulp production and for GHG emissions reduction in the industrial processes. Additionally, it emphasizes

opportunities to reduce agrochemical use for soybean production.

Discussion

The initial monitoring provides a preliminary view on the sustainability effects associated with material flows. The main shortcomings to ensure a sound based long-term bioeconomy monitoring include data aggregation and lack of regularly updated information, especially of environmental statistics.



Further Information

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Support

