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Bioeconomía, recursos naturales y cuestiones de sostenibilidad: Introducción al número especial

Bioeconomy, Natural Resources and Sustainability Issues: Introduction to Special Issue

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Abstract

The bioeconomy, based on the use of renewable biological resources to produce food, energy, and industrial products, is a key topic for a sustainable economy aligned with the Sustainable Development Goals (SDGs). Despite its relevance, research on its structure and evolution is still lacking due to methodological and data limitations. This special issue of the Journal of Economics presents four articles that address different dimensions of the bioeconomy: the impact of gender diversity on corporate water use, sustainable strategies in the creative bioeconomy in Brazil, the development of the circular bioeconomy in Mexico, and a bioeconomic model for sustainable fishing. Together, they seek to contribute to the study and development of this key sector for the economic and environmental future of the Americas and the world.

Keywords: renewable biological resources, energy, sustainable economy.
JEL Classification: Q13, Q22, Q23, Q24, Q57

Resumen

La bioeconomía, basada en el uso de recursos biológicos renovables para producir alimentos, energía y productos industriales, es un tema clave para una economía sostenible alineada con los Objetivos de Desarrollo Sostenible (ODS). A pesar de su relevancia, la investigación sobre su estructura y evolución aún es escasa debido a limitaciones metodológicas y de datos. Este número especial del Journal of Economics presenta cuatro artículos que abordan diferentes dimensiones

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de la bioeconomía: el impacto de la diversidad de género en el uso corporativo del agua, las estrategias sostenibles en la bioeconomía creativa en Brasil, el desarrollo de la bioeconomía circular en México y un modelo bioeconómico para la pesca sostenible. En conjunto, buscan contribuir al estudio y desarrollo de este sector clave para el futuro económico y ambiental de las Américas y del mundo.

Palabras clave: recursos biológicos renovables, energía, economía sostenible
Clasificación JEL: Q13, Q22, Q23, Q24, Q57

1. Bioeconomy as a key issue: need for research

The bioeconomy comprises all economic activities based on the use of renewable biological resources to produce food, feed, bioenergy, and bio-based products (European Commission 2012). The bioeconomy, as a key sector to produce food, feed, energy and industrial materials, has generated a growing (and unstoppable) interest among policy makers, which is reflected in the proliferation of bioeconomy policy strategies around the world. Therefore, further research is needed on the concept of the bioeconomy, its structuring within the economy, and how it is and will evolve over time.

This new economic paradigm emerges as the need to focus on a more sustainable economy supporting the achievement of many Sustainable Development Goals (SDGs) (Heimann 2019). Thus, it has become a priority for the European Union (EU) promoted through its own strategy and related policies such as the European Green Deal or the Next Generation Funds. In this sense, there has been a significant interest in the bioeconomy demonstrated by the promotion of related strategies in many countries, as well as an increasing scientific literature (Keswani et al. 2021).

Despite its importance, little work has been done to analyse the potential of the bioeconomy sectors due to the lack of suitable databases and methodologies. Although different studies have measured the size of the bioeconomy in different ways, there is still a wide margin for the development of models and analytical proposals that continue the study of this subject. Previous work by calculating the biobased shares of the sectors involved (Efken et al. 2016; Ronzon and M'Barek, 2018; Ronzon et al. 2022), or using multisectoral models (Ferreira et al. 2020; Mainar-Causapé et al. 2018; Philippidis et al. 2014) are only the starting point of a field with enormous potential for analysis.

2. Contributions of this Special Issue

This Special Issue on '*Bioeconomy, Natural Resources and Sustainability issues*' *of the Journal of Economics* aims to contribute to our understanding of the main methods to analyse this matter. To this end, four articles are presented which respond to several of the issues raised.

The first paper, ***Gender diversity and water scarcity: estimating water use in large companies*** *(Diversidad de género y escasez hídrica: estimación del uso de agua en grandes empresas*), whose authors are Enrique Leonardo Kato Vidal, Beatriz Rosas Rodríguez and Mario Sotomayor Gallardo, try to explain changes in water use in companies by measuring the influence of women on boards of directors and by estimating the effect of regional water conditions, which, if worsened, would foster changes in business practices.

Keila Regina Mota Negrão, Mario Cesar dos Santos de Carvalho, Magnus Emmendoerfer and Sérgio Castro Gomes are the authors of the second article, ***Strategies for sustainability in the context of the creative (bio)economy: evidence from Belém (PA), Brazil*** *(Estrategias para la sostenibilidad en el contexto de la (bio)economía creativa: evidencia de Belém (PA), Brasil).* Inthis paper, authors identify and analyze sustainability strategies adopted by creative economy organizations located on Combu Island in Belém de Pará in the Amazonian bioeconomy. The theoretical framework is based on the Natural Resource-Based View (NRBV) and the sustainability strategies framework., using a qualitative, exploratory, applied case study and document analysis.

In the third paper, The concept of circular bioeconomy: origin, evolution and perspectives for Mexico *(El Concepto de Bioeconomía Circular: Origen, Evolución y Perspectivas para México)*, by Edgar Alfonso Sansores Guerrero and Juana Edith Navarrete Marneou, the main objective is to analyse the fundamental principles and concepts of the circular bioeconomy, as well as to explore its development possibilities in the Mexican context, contextualizing the circular bioeconomy as a concept under construction, resulting from the convergence of previous theoretical frameworks oriented towards a sustainable transition.

Finally, the last paper, ***Modelo bioeconómico y simulador de escenarios para el aprovechamiento sostenible de pesquerías en México*** *(Bioeconomic model and scenario simulator for the sustainable use of fisheries in Mexico),* the author, Miriam del Valle Morales, presents a bioeconomic model that optimizes the profits generated by the exploitation of marine species, along with a scenario simulator that provides planning for closed seasons and efforts that fisheries could apply considering their limitations, applying the model to the case of sea cucumber in Baja California and the red grouper in Yucatán.

3. Conclusions

With these quality and significant papers, we hope that this special issue will contribute to enriching bioeconomy research, both in Mexico and throughout the Americas, enhancing the analysis of a key sector in global economic development in the medium (and already in the short) term.

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