World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:17, No:06, 2023

Policies for Circular Bioeconomy in Portugal: Barriers and Constraints

Authors : Ana Fonseca, Ana Gouveia, Edgar Ramalho, Rita Henriques, Filipa Figueiredo, João Nunes

Abstract : Due to persistent climate pressures, there is a need to find a resilient economic system that is regenerative in nature. Bioeconomy offers the possibility of replacing non-renewable and non-biodegradable materials derived from fossil fuels with ones that are renewable and biodegradable, while a Circular Economy aims at sustainable and resource-efficient operations. The term "Circular Bioeconomy", which can be summarized as all activities that transform biomass for its use in various product streams, expresses the interaction between these two ideas. Portugal has a very favourable context to promote a Circular Bioeconomy due to its variety of climates and ecosystems, availability of biologically based resources, location, and geomorphology. Recently, there have been political and legislative efforts to develop the Portuguese Circular Bioeconomy. The Action Plan for a Sustainable Bioeconomy, approved in 2021, is composed of five axes of intervention, ranging from sustainable production and the use of regionally based biological resources to the development of a circular and sustainable bioindustry through research and innovation. However, as some statistics show, Portugal is still far from achieving circularity. According to Eurostat, Portugal has circularity rates of 2.8%, which is the second lowest among the member states of the European Union. Some challenges contribute to this scenario, including sectorial heterogeneity and fragmentation, prevalence of small producers, lack of attractiveness for younger generations, and absence of implementation of collaborative solutions amongst producers and along value chains.Regarding the Portuguese industrial sector, there is a tendency towards complex bureaucratic processes, which leads to economic and financial obstacles and an unclear national strategy. Together with the limited number of incentives the country has to offer to those that pretend to abandon the linear economic model, many entrepreneurs are hesitant to invest the capital needed to make their companies more circular. Absence of disaggregated, georeferenced, and reliable information regarding the actual availability of biological resources is also a major issue. Low literacy on bioeconomy among many of the sectoral agents and in society in general directly impacts the decisions of production and final consumption. The WinBio project seeks to outline a strategic approach for the management of weaknesses/opportunities in the technology transfer process, given the reality of the territory, through road mapping and national and international benchmarking. The developed work included the identification and analysis of agents in the interior region of Portugal, natural endogenous resources, products, and processes associated with potential development. Specific flow of biological wastes, possible value chains, and the potential for replacing critical raw materials with bio-based products was accessed, taking into consideration other countries with a matured bioeconomy. The study found food industry, agriculture, forestry, and fisheries generate huge amounts of waste streams, which in turn provide an opportunity for the establishment of local bio-industries powered by this biomass. The project identified biological resources with potential for replication and applicability in the Portuguese context. The richness of natural resources and potentials known in the interior region of Portugal is a major key to developing the Circular Economy and sustainability of the country.

Keywords : circular bioeconomy, interior region of portugal, regional development., public policy
Conference Title : ICCEB 2023 : International Conference on Circular Economy and Bioeconomy
Conference Location : Paris, France
Conference Dates : June 22-23, 2023