

ACADEMIA DE STUDII ECONOMICE DIN BUCUREȘTI



**Școala Doctorală Economie II**

# **TEZĂ DE DOCTORAT**

Prezentată și susținută public de către autor:

**Carol Cristina C. B. GOMBOS**

Titlul tezei de doctorat

## **Sustenabilitatea modelelor de bioeconomie circulară în spațiul european**

Conducător de doctorat: prof. univ. dr. Carmen Valentina RĂDULESCU

Comisia de susținere a tezei de doctorat:

Prof.univ.dr. Georgiana Raluca LĂDARU (președinte)	-	Academia de Studii Economice, București
Prof.univ.dr. Corina Ionela DUMITRESCU (referent)	-	Universitatea Politehnica, București
Prof.univ.dr. Prof. univ. dr. Alina Gabriela MĂRCUȚĂ (referent)	-	Universitatea de Științe Agronomice și Medicină Veterinară, București
Conf.univ.dr. Irina Elena PETRESCU (referent)	-	Academia de Studii Economice, București
Prof. univ. dr. Carmen Valentina RĂDULESCU (conducător de doctorat)	-	Academia de Studii Economice, București

**București, 2024**

**ACADEMIA DE STUDII ECONOMICE DIN BUCUREȘTI**

**Consiliul pentru Studii Universitare de Doctorat**

**Școala Doctorală Economie II**

**Sustenabilitatea modelelor de bioeconomie circulară în  
spațiul european**

**Carol Cristina C. B. GOMBOS**

**Conducător de doctorat:**

**prof. univ. dr. Carmen Valentina RĂDULESCU**

**București, 2024**

# Summary

This doctoral thesis addresses the issue of the sustainability of circular bioeconomy models in the European context and highlights how economic growth can be harmonized with environmental protection. Through the research carried out in the framework of the thesis, I found that the transition to good sustainable economic practices is closely related to the regulations in the field and good governance decisively influences economic, social and environmental decisions.

The paper was structured in five chapters, preceded by an introduction and ends with the final conclusions of the research and the bibliography studied, presented in alphabetical order of the authors.

The first chapter, entitled "Identification and examination of ideas and governance that support sustainable economic growth" deepens the study of the specialized literature and analyzes the fundamental concepts that support it that sustainable economic development in Europe can be possible if an emphasis is placed on the bioeconomy and circular economy. In this chapter I highlighted the fact that although in the literature there are approaches that have different objectives, they complement each other and can contribute together to achieving the objectives of sustainable development. Also in this chapter we analyzed and highlighted the role of European legislative initiatives such as the European Pact and the Biodiversity Strategy 2030 in promoting the concepts of bio economy and sustainable economy.

The second chapter, entitled "Analysis of circular bioeconomy models in Europe and their relationship with sustainability requirements" analyzes various bioeconomy models that have been created and applied in several European states, with an emphasis on those models developed in the sectors of agriculture, management water, electricity, transport and services. The evaluation of these models allowed the identification of the strengths but also the limits of the circular bio economy models in Europe in order to transfer good practices to our country.

The third chapter, entitled "Identification and creation of a system of indicators for the evaluation of the sustainability of circular bioeconomy models in agriculture" focused on the identification and creation of a system of indicators for the evaluation of the sustainability of circular bioeconomy models. After identifying a viable indicator system, a system of indicators was created that allow objective and measurable assessment of sustainability in agriculture.

The fourth chapter, entitled "Analysis of the main indicators used to determine whether circular bioeconomy models in agriculture are sustainable at the microeconomic level" analyzes the sustainability indicators used both at the European and national level in the agricultural sector. It also analyzes how these indicators assess the performance of the circular bioeconomy in agriculture by comparing data obtained at national level with data at European level. Highlighting the similarities and differences in the application of such models also allowed highlighting and proposing measures for a better management of natural resources and an efficiency of economic sustainability.

The fifth chapter, entitled "Creation of a circular bioeconomy agricultural model" proposes a circular bioeconomy model focused on the sustainable valorization of waste from the aromatic and oleaginous medicinal plant sector through the use of cutting-edge plant waste processing and extraction technologies.

The conclusion of the research is that the sustainability of circular economy models can be an essential element for an economic and ecological future of Europe, but the success of these models depends primarily on an adopted legislative framework adapted to the new challenges, on good regulation and legislation in the field correlated with good governance, as well as the use of the most relevant indicators for evaluating the sustainability of circular bioeconomy models in the European space.

**Keywords:** *bioeconomy, sustainable development, circular economy, resource efficiency, ecological impact, innovation, European policies, renewable resources, sustainability.*