# BIOECONOMY

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**Abstract**

*Increasing demands for use of natural resources is a reality that we face increasingly acute. The changes produced by depletion are intuitively easy to spot, given that many material resources used as raw materials in various economic activities come from limited stocks, the best known examples being the fossil fuels, and ores of different metals. These changes actually mean a reduction in the availability of resources, which are becoming increasingly difficult to obtain, even with the new technologies allow overcoming some major restrictions. The bioeconomy, to which are reported more and more economic systems, it helps to some extent to achieve our objectives of growth and economic development, while maintaining a minimum state of aletration for the environment.*

**Key words:** *bioeconomy, natural resources, economy, depletion*
**JEL Classification:** Q01, Q2, Q55

## 1. INTRODUCTION

Increasing demands for use of natural resources is a reality that we face increasingly acute. The changes produced by depletion are intuitively easy to spot, given that many material resources used as raw materials in various economic activities come from limited stocks, the best known examples being the fossil fuels, and ores of different metals. These changes actually mean a reduction in the availability of resources, which are becoming increasingly difficult to obtain, even with the new technologies allow overcoming some major restrictions.

Analysis of changes caused by depletion was enriched with new meanings once they developed the concept of economic resource. Thus, raw materials and fossil fuels were the main categories covered by the concept of economic resource. As knowledge has progressed eco-economic characteristic of scarcity of economic resources has been identified for categories such as clean air and water, waste storage etc.[2]

The bioeconomy, to which are reported more and more economic systems, it helps to some extent to achieve our objectives of growth and economic development, while maintaining a minimum state of aletration for the environment.

By creating wealth and jobs, the competitiveness and efficiency attributes are often taken into consideration in building this type of economy, where rational use of natural resources, the identifiation of new growth opportunities based on manifested pressures like population growth and the depletion of natural resources, a larger measure of alternative solutions and not least supporting innovative processes can ensure a transition towards a greener economic system in which the care for future generations is a central element.

## 2. BIOECONOMY

The development process shown in recent years relied to an extent more and more on identifying solutions that we provide a sustained pace of development, while protecting the

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[2] Bran, F., Ioan, I. (2002). *Ecosferă şi politici ecologice*. Editura ASE, Bucureşti, p. 89

environment. Thus, efforts to identify and implement the results of these efforts was achieved by using biotechnology, with effects in the transition to a sustainable economy. The need for such approaches result primarily from the dependence on the economic processes and not only upon the natural capital. Hence the economic potential of biotechnology accompanied by numerous benefits make possible the transition to a bioeconomy.[3] For example, the turnover of the total bioeconomy in the EU-28 resulted in 2.1 trillion EUR in 2013[4].

The bioeconomy refers to to the set of economic activities that relate to the invention, developement, production and use of biological products and processes.[5]

Bio-economy comes in response to our attempt to cope with the challenges that we are facing through the following global events:

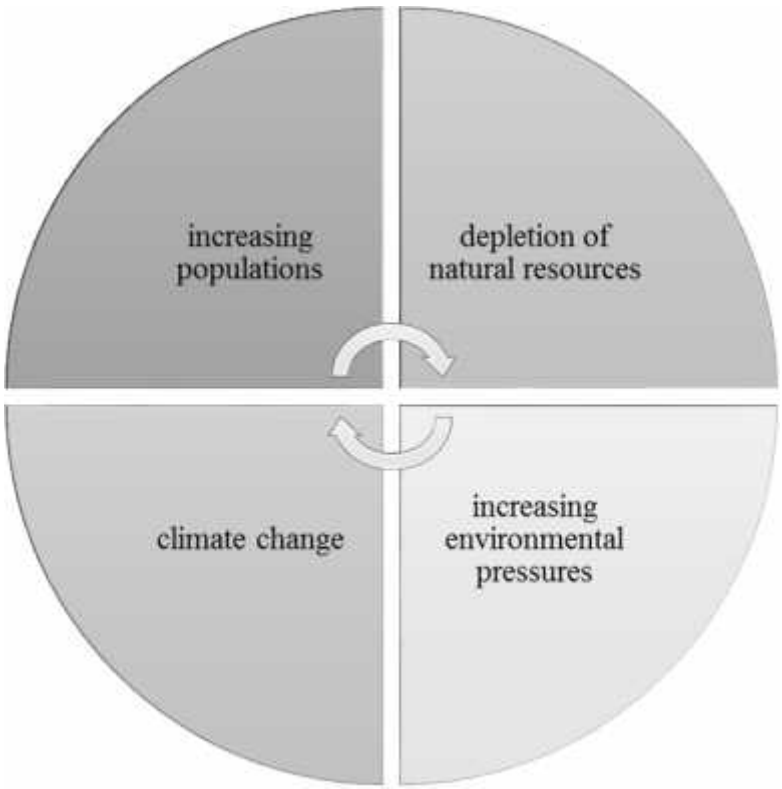


**Figure 1. Challenges adressed by the bioeconomy**

Source: own interpretation upon *Innovating for Sustainable Growth: A Bioeconomy for Europe*[6] (europa.eu)

The economic, social and environmental integration in a set of measures will lead to positive effects on the entire approach of the sustainable development phenomenon applicable in the sphere of human health, greener economy, changed of production and consumption behaviors and ultimately the paradigm shift in terms of acceptance and awareness of a new

[3] OECD (2009), *The Bioeconomy to 2030: Designing a Policy Agenda.*

[4] Piotrowski S., Carus M., Carrez D. (2016), *European Bioeconomy in Figures.*

[5] Lamers P., Searcy E., Hess J.R. and Stichnothe H. (2016), *Developing the Global Bioeconomy*, IEA Bioenergy (https://books.google.ro/books?id=gTqOCgAAQBAJ&pg=PA86&lpg=PA86&dq=bioeconomy+references&source=bl&ots=Lxpj3vhqx6&sig=JejaFEhH4RYCbdr8U5JvQgT19NA&hl=ro&sa=X&ved=0ahUKEwjE0Z7KlIrNAhUB6RQKHUR7AmcQ6AEILTAC#v=onepage&q=bioeconomy%20references&f=false)

[6] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

economic model and beyond.

One important driver for the bioeconomy is represented by the manifested demographic trend primarily in the developed countries with high income per capita.[7].

The importance of an approach focused on the bioeconomy estimated to be worth over E2 trillion and providing 20 million jobs in the EU[8].comes from the expected potential by creating jobs, generating economic growth, reducing dependence on fossil fuels and ensure the sustainability of industrial and manufacturing processes[9],

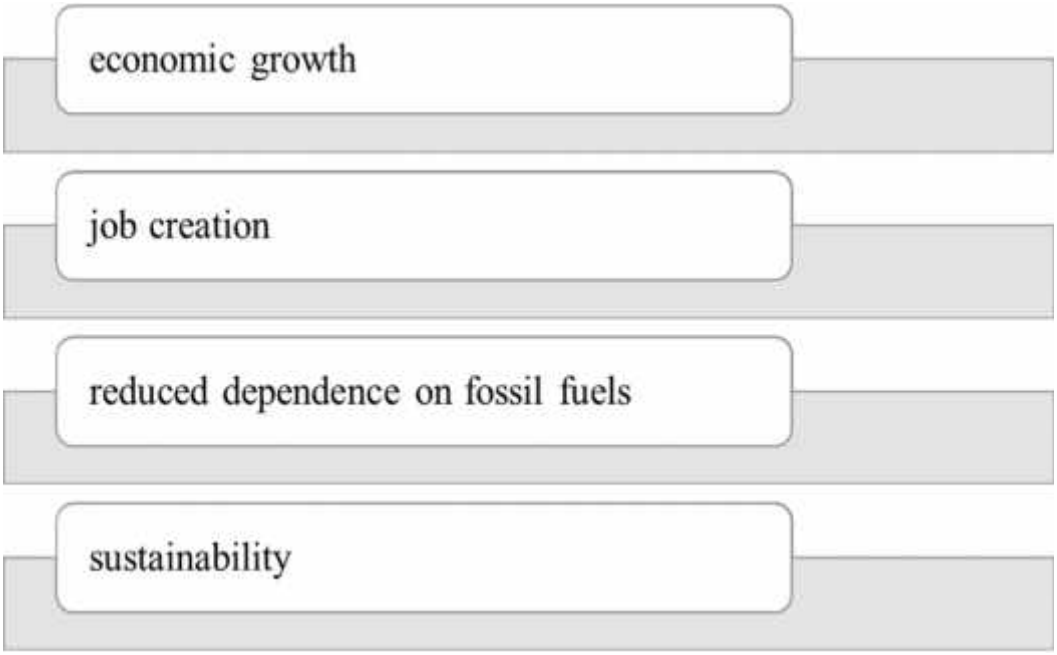


**Figure 2. Bioeconomy potential**

Source: own interpretation upon Innovating for Sustainable Growth: A Bioeconomy for Europe (europa.eu)

The project supported by OECD, respectively Bioeconomy to 2030 shows an approach focused on biotechnologies in three major sectors, namely:

1. Primary production;
2. Health;
3. Industry.

The transition to a more sustainable production system can only be acquired through measures aimed at supporting the implementation of biotechnologies especially in areas such as agriculture, fishing and timber industry. New approaches reveal that the above mentioned areas, especially in terms of sustainable production and industry, the major markets for biotechnology are located in developing countries[10].

Health becomes more and more important and the pressure to which it is subject to results in finding new solutions to meet the challenges related to diseases, drugs, vaccines, especially in the current context of climate change, environmental degradation, pollution and its effects in particular. Innovation represents an important point to consider which, through appropriate support, creates value and contributes to the further development of society.

At industry level, the discussion about the bioeconomy revolves around sustainable

[7] OECD (2009), *The Bioeconomy to 2030: Designing a Policy Agenda.*
[8] www.europe.eu.
[9] European Commission (2012), *Innovating for Sustainable Growth-A Bioeconomy for Europe.*
[10] OECD (2009), *The Bioeconomy to 2030: Designing a Policy Agenda.*

management of the environment by using renewable energy sources, waste re-use, low emissions. It thus ensure increased competitiveness and also a reduced environmental footprint[11].

There is also highlighted the need for collaboration between public and private sphere, the mutual support being materialized in far superior results. At the same time the importance of developing biotechnology solutions shows good results in the sphere of economic output. A good cooperation between decision makers and implementing measures proposed by the Member States can be translated in an integrated approach that facilitates the entire process of adopting such a model more widely.

## 3. CONCLUSIONS

Reducing the impact of economic activities upon the environment through the adoption of solutions such as the bio-economy approach is taking shape across the sectors that are composing it. Minimising the dependence on fossil fuels, and the opportunities in creating jobs and increased economic development regarding a greener approach, leads us to boost research and investment in this regard.

The benefits of a bio-economy will not be fully felt in the lack of support from decision makers, especially by involving the government level and at the level of major economic actors.

## 4. REFERENCES


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