

## DEVELOPING BIOECONOMY IN THE CONTEXT OF MIGRATION PROCESSES

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### Abstract

Migration processes affect the labor market, social services, and the overall economic situation in a country.

Migration processes are becoming increasingly important and controversial in modern migration studies. This is primarily due to the growth of global and regional migration and its impact on the transformation of the modern system.

The analysis of the relationship between migration and development, and nowadays sustainable development, as a new economic model and practical approach, is relevant and requires the development of new research.

Migration processes are particularly important in the context of achieving the 17 Sustainable Development Goals and processes related to the globalization of migration, labor markets, the increasing role of economic aspects.

The modern model of sustainable development combines three components: economic, environmental and social.

The concept of sustainable development is ensured by the balance of its three dimensions: economic development, environmental responsibility, and social progress.

In today's global economy, the concept of sustainable development is a paradigm and guiding principle for the development of the global economy in the context of overcoming global challenges: limited natural resources, environmental pollution, climate change, etc.

Sustainable development implies stable, equitable and inclusive economic growth based on sustainable production and consumption patterns.

The bioeconomy is a paradigm and mechanism for achieving the Sustainable Development Goals.

It is substantiated that the bioeconomy is emerging as a form of support for sustainable economic development in the context of limited quantitative and qualitative resources, climate change and environmental degradation. The bioeconomy is understood as the efficient and rational use of natural resources that are crucial for the process of inclusive economic development. The purpose of the bioeconomy is to promote the use of renewable biological resources and alternative energy sources as input resources in technological processes, environmental protection and socio-economic development.

**Keywords:** bioeconomy, sustainable development, sustainable development goals, migration processes.

### 1. INTRODUCTION

Today, the world's population has grown more than three times as much as it was in the middle of the 20th century. In 2022, the world's population will reach 8.0 billion from about 2.5 billion in 1950, adding 1 billion people since 2010 and 2 billion since 1998. The world's population is expected to increase by almost 2 billion people in the next 30 years, from the current 8 billion to 9.7 billion in 2050, and could peak at almost 10.4 billion in the mid-2080s. This growth has been driven mainly by an increase in the number of people living to reproductive age, a gradual increase in human life expectancy, the pace of urbanization, and accelerating migration. These trends will have far-reaching consequences for future generations.

On November 15, 2022, the world's population reached 8 billion people, marking an important milestone in human development. Although it took 12 years for the world's population to grow from 7 to 8 billion, it will take approximately 15 years - until 2037 - to reach 9 billion.

According to the U.S. Census Bureau, as of January 1, 2024, the world's population will be 8019876189 people - almost 1% more, or 75162541 people, than at the beginning of 2023.

Along with this, the unprecedented growth of the global middle class will be a key socioeconomic factor. Today, 3 billion people belong to the global middle class, and it is expected that in the future it will be joined annually by such things as food, clothing, more comfortable living conditions, the ability to travel, housing, etc.

To reduce the impact of this development vector on the environment, the economy and society must be re-designed. States should implement the "idea of inclusive development" to preserve and distribute wealth.

Globalization, technological change, and innovation, which are driving development across society, are just some of the key global drivers. Others, such as migration, urbanization, digitalization, smartization, integration, etc., will also shape global society and markets. In such a situation, the current economic model has a systemic failure, assuming unlimited resources and their irrational use. It underestimates the environmental costs associated with its operation and the importance of natural capital for its long-term viability. It does not create positive incentives for the market to move toward an economy that thrives within the natural renewable limits of our planet.

## **MATERIALS AND METHODS**

Research methods: general scientific methods: analysis, synthesis, induction, deduction, systems approach and modeling – to study the theoretical issues of forming a strategically-oriented model of sustainable development; generalization method – for the formation of a strategically oriented model of sustainable development.

The research methodology involves the use of general scientific and specific methods used in economics, ecology and biotechnology, and is based on an interdisciplinary approach.

## **RESEARCH FINDINGS AND DISCUSSIONS**

The two dialogues on migration and development resulted in the inclusion of migration issues in the 2030 Agenda, known as "Transforming our world: The 2030 Agenda for Sustainable Development".

The 2030

Agenda contains 17 Sustainable Development Goals, which cover 169 targets. The agenda was approved by the heads of state and government during the UN Summit on Sustainable Development at the 70th anniversary session of the United Nations General Assembly in New York on September 25, 2015.

Migration issues are reflected most of all in the goals:

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 10. Reduce inequality within and among countries

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

They are linked to migration, including student (educational) mobility, gender aspects, the rights of labor migrants, and the problems of human trafficking, as well as to the promotion of orderly, safe, regular and responsible migration and mobility of people, in particular through the implementation of a balanced migration policy.

For sustainable development:

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 1. End poverty in all its forms everywhere

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

also includes migration issues reflected in key aspects of development, which include creating conditions to facilitate migration and its consequences as a choice rather than a forced necessity.

The study (De Haas 2007) on the need to study migration impacts in their broader social context and to see how migration, on the one hand, is an integral part of the broader processes of transformation embodied in the term "development".

On the other hand, migration has its own internal, self-sustaining and self-tuning dynamics, and also influences such transformation processes on its own. As noted by D. Massey (1990), migration leads to changes in the socio-economic development of the territories of migrants' origin, which contribute to new migration flows. Therefore, it is necessary to study not only migrants as such, but also to diagnose the level of socio-economic development of the place of stay and exit of migrants.

The results of a study by the International Organization for Migration (IOM) state the following as conclusions about the relationship between migration and development: "There is no direct link between poverty, economic development, population growth, social and political change, on the one hand, and international migration, on the other. Poverty reduction is not in itself a strategy for reducing migration" (Focus, 2016).

The effectiveness and efficiency of this interaction between migration and development is largely determined by the degree of interest of the state in achieving positive results. Nowadays, the significant role of the state in regulating the process of interaction between migration and development of a territory at the international (global) level is well substantiated. According to De Haas (2007), public policies that improve the functioning of social, legal, economic and political institutions are crucial not only for creating a fertile ground for development in general, but also for migrants, for migrants to invest more and/or to return to their countries of origin.

Douglas (2015) identifies three broad groups of variables as key determinants of immigration policy: macroeconomic conditions such as employment and wages, the relative size of the immigrant flow, and the ideological context of the time, with the actual impact of these policies depending on the capacity and effectiveness of the state that seeks to implement them. The state, or rather state migration policy, is one element of the process of interaction between development and migration (Douglas, 2015).

In other words, the state continues to play an important role in creating favorable conditions for human development, creating an institutional environment that determines the scale and direction of interaction between migration and inclusive development.

The state as a separate element plays a significant role in the full realization of the effective relationship between migration and development. The state (the one that sends and/or receives migrants) is indeed the key link in this relationship. The role of the state is important in creating favorable conditions for human development; it creates an institutional environment that determines the scale and direction of interaction between migration and development, as well as legal and social opportunities and constraints.

In particular, it is about the formation and implementation of migration policy, both internal and external. At the same time, a single state (receiving or sending) cannot provide the necessary support and determine the legal and social environment for migrants; coordinated cooperation of states is needed to achieve these goals.

Taking into account all the above aspects in the context of globalization, integration and increasing interdependence of the modern world, it is necessary to talk about sustainable development.

The relationship between migration and sustainable development is a controversial and difficult to substantiate aspect. First of all, we see the connection between migration and sustainable development in the perception of migration processes as relatively controlled, stable flows with the main actors of the process - labor migrants who have rights and obligations and make a certain contribution to the countries of origin and destination. The contribution may be in the form of remittances or skills in the country of origin and in the form of labor outputs in the destination country.

With the adoption of the 17 Sustainable Development Goals (SDGs) and their reflection of migration, we can increasingly talk about the practical aspects of the relationship between migration and various phenomena, including sustainable development, as a key indicator of overall development and transformation.

The adoption of the 17 SDGs by all UN member states in 2015 provides for an annual report by states on the implementation of the goals, including in the field of migration. This makes it possible not only to trace the dynamics of migration processes in the context of sustainable development in a practical way, but also to develop theoretical research in this area.

The state plays an important role in the process of strengthening the positive effects of migration and development, namely interstate cooperation.

Sustainable development and migration is a rather complicated construct that emerged at the beginning of the 21st century, but globalization, integration processes, as well as the adoption of 17 SDGs, which reflect migration issues, and the planned signing of the Global Compact on Migration by all UN member states, reinforce not only the need for theoretical research, but also practical approaches.

A sustainable bioeconomy returns resources to the real sector, creates jobs, promotes greener production and consumption, and makes optimal use of limited resources in a waste-free circular economy (Oleshko et al., 2022c).

Biomass production and the conversion of biomass into food, beverages, industrial bioproducts, liquid biofuels, and bioelectricity employ 17.42 million people and generate €657 billion in added value in the EU's post-Brexit sectors in 2019. Thus, these sectors of the bioeconomy concentrate 8.3% of the European labor force and contribute 4.7% of its GDP. Agriculture and the production of food, beverages, and tobacco products account for 65% of the total value added generated by the above sectors. The production of bioproducts here refers to tobacco products, biotextiles, bio-based clothing, leather, paper and wood products, as well as biochemicals, pharmaceuticals, plastics and rubber.

**Table 1.** Number of persons employed, value added, and apparent labour productivity by sector of the bioeconomy (EU-27, 2019) (Ronzon et al., 2022)

Sector	Persons employed (number)	Turnover (EUR million)	Value added (EUR million)	Apparent labour productivity (EUR 1000/worker)
Agriculture	8,830,300	436,982	192,802	22
Forestry	517,410	49,470	24,663	48
Fishing	161,040	12,493	5,752	36
Manufacture of food, beverages and tobacco	4,658,299	1,157,102	237,460	51
Manufacture of bio-based textiles	791,241	86,120	25,479	32
Manufacture of wood products and furniture	1,320,066	176,590	49,597	38
Manufacture of paper	632,756	188,687	48,215	76
Manufacture of bio-based chemicals, pharmaceuticals, plastics and rubber (excluding biofuels)	462,381	196,875	64,525	140
Manufacture of liquid biofuels	25,747	14,919	3,251	126
Production of bioelectricity	25,047	26,438	4,953	198
Bioeconomy	17,400,000	2,345,679	656,696	38

## RESULTS

Migration processes have both positive and negative impacts on the development of the bioeconomy. On the one hand, migrants can contribute to the development of the bioeconomy by bringing new knowledge and skills, and by being ready to work in an industry that is attractive to investment. On the other hand, migration can lead to social and economic problems that can negatively affect the development of the bioeconomy.

Among the positive aspects of migration for the development of the bioeconomy are the following:

1. Inflow of new knowledge and skills. Migrants often have experience in industries related to the bioeconomy, and they have new knowledge and skills that can be useful for the development of the industry. For example, migrants from Ukraine who are forced to migrate due to war often have experience in agriculture, as well as in industries that are promising for the bioeconomy. This experience can be used to develop new technologies and methods in these industries.
2. Increased labor force. Migrants may be willing to work in the bioeconomy sector, which is innovative. This can lead to an increase in the labor force in the industry, which can contribute to its development.
3. Expanding markets. Migrants can help expand markets for bioeconomy products.

Among the negative aspects of migration for the development of the bioeconomy are the following:



1. Social problems. Migration can lead to social problems, such as social tensions and poverty. This can have a negative impact on the development of the bioeconomy, as it can lead to deterioration of working conditions and reduced investment in the industry.
2. Skills mismatch. Not all migrants are qualified to work in the bioeconomy. This can lead to lower labor productivity and lower product quality.
3. Competition in the labor market. Migrants may compete with local workers for jobs in the bioeconomy. This can lead to lower wages and worse working conditions for local workers.

## **DISCUSSION**

Today, the bioeconomy of the EU-27 employs about 17.5 million people, which is 9% of the workforce. The bioeconomy generates 1.5 trillion euros (about 10% of GDP), including the tertiary sector of the bioeconomy (bioservices).

We concluded that that the state policy of Ukraine should be aimed at the development and implementation of mechanisms for restoring production, preserving, and creating new jobs related to the reconstruction of the national economy, in infrastructure sectors, construction, industry and providing economic incentives for the labor force reimmigration (Oleshko et al., 2022a).

It was determined that in the post-war period, the bioeconomy should become a priority to support the economic recovery of Ukraine, since a sustainable bioeconomy returns resources to the real sector, creates jobs, promotes an increase in the level of environmental friendliness of production and consumption, and allows optimal use of limited resources on a waste-free circular basis (Oleshko et al., 2022b).

## **CONCLUSION**

The main conclusions should be summarized here, and can also include recommendations or suggest application of the results beyond the study.

In order to minimize the negative impact of migration on the development of the bioeconomy, the following measures should be taken:

- 1) Develop and implement policies aimed at integrating migrants into society. This policy should include measures to teach migrants the language, culture and laws of the host country.
- 2) Ensuring migrants' access to vocational education and retraining. This will help migrants obtain the necessary qualifications to work in the bioeconomy.
- 3) Establishing mechanisms for regulating migration. These mechanisms should ensure that migrants' qualifications meet the requirements of the labor market.

In general, migration processes have the potential to have a positive impact on the development of the bioeconomy. However, in order to maximize this impact, it is necessary to take measures to minimize the negative impact of migration.

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