



**O‘ZBEKISTONDA "YASHIL IQTISODIYOT"NI
RIVOJLANTIRISH SALOHİYATIDAN SAMARALI
FOYDALANISH ISTIQBOLLARI VA MINTAQAVIY
XUSUSIYATLARI**

**XALQARO ILMIY-AMALIY
KONFERENSIYA**

26-aprel 2024-yil

**МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ
ПЕРСПЕКТИВЫ И РЕГИОНАЛЬНЫЕ ОСОБЕННОСТИ
ЭФФЕКТИВНОГО ИСПОЛЬЗОВАНИЕ ПОТЕНЦИАЛА
РАЗВИТИЯ «ЗЕЛЕННОЙ ЭКОНОМИКИ» В УЗБЕКИСТАНЕ**

26 апреля 2024 года

**INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE
PERSPECTIVES AND REGIONAL FEATURES OF THE
EFFECTIVE USE OF THE POTENTIAL OF THE
DEVELOPMENT OF THE "GREEN ECONOMY" IN
UZBEKISTAN**

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1. Qo‘yidagi tarkibdan iborat dasturiy qo‘mita

1. O.X. Xamidov – Buxoro davlat universiteti rektori, i.f.d., professor, rais;
2. T.X.Rasulov – Ilmiy ishlar va innovatsiyalar bo‘yicha prorektor, f-m.f.d., professor, rais muovini;
3. A.T.Jo‘rayev Xalqaro aloqalar bo‘yicha prorektor,i.f.n, a‘zo;
4. D.Sh. Yavmutov – Iqtisodiyot va turizm fakulteti dekani, i.f.n, dotsent, a‘zo;
5. B.N. Navruz-Zoda – Marketing va menejment kafedrasida professori, i.f.d., professor, a‘zo;
6. N.S.Ibragimov – Turizm va mehmonxona xo‘jaligi kafedrasida mudiri, i.f.d., professor, a‘zo;
7. A.J. Abdullayev – Iqtisodiyot kafedrasida mudiri, i.f.f.d., professor, a‘zo;
8. S.S.Davlatov – Yashil iqtisodiyot va agrobiznes kafedrasida mudiri v.v.b., a‘zo;
9. M.A. Oripov – Yashil iqtisodiyot va agrobiznes kafedrasida dotsenti, i.f.n., a‘zo;
10. X.R.Turobova – Yashil iqtisodiyot va agrobiznes kafedrasida dotsenti, i.f.f.d, a‘zo;

2. Qo‘yidagi tarkibdan iborat tashkiliy qo‘mita

1. T.X.Rasulov – Ilmiy ishlar va innovatsiyalar bo‘yicha prorektor, f-m.f.d., professor, rais;
2. D.Sh. Yavmutov – Iqtisodiyot va turizm fakulteti dekani, i.f.n, dotsent, rais muovini;
3. O‘. U.Rashidov – Moliya va iqtisodiyot ishlari bo‘yicha prorektor, a‘zo;
4. F.N.Nurulloyev – Ilmiy tadqiqot va inovatsion faoliyatni rivojlantirish departamenti boshlig‘i, a‘zo;
5. N.S.Ibragimov – Turizm va mehmonxona xo‘jaligi kafedrasida mudiri, i.f.d., professor, a‘zo;
6. A.J. Abdullayev – Iqtisodiyot kafedrasida mudiri, i.f.f.d., professor, a‘zo;
7. S.S.Davlatov – Yashil iqtisodiyot va agrobiznes kafedrasida mudiri v.v.b., a‘zo;
8. M.A. Oripov – Yashil iqtisodiyot va agrobiznes kafedrasida dotsenti, i.f.n., a‘zo;
9. X.R.Turobova – Yashil iqtisodiyot va agrobiznes kafedrasida dotsenti, i.f.f.d, a‘zo;
10. S.S.Ro‘ziyev – Yashil iqtisodiyot va agrobiznes kafedrasida katta o‘qituvchisi, i.f.n, a‘zo;
11. F.K.Saidova – Yashil iqtisodiyot va agrobiznes kafedrasida katta o‘qituvchisi, a‘zo;
12. A.D.Qudratov – Yashil iqtisodiyot va agrobiznes kafedrasida katta o‘qituvchisi, a‘zo;

Mazkur to‘plamga kiritilgan ilmiy ishlar va g‘oyalarning mazmuni, undagi statistik ma‘lumotlar, sanalarning aniqligiga hamda tanqidiy fikr-mulohazalarga mualliflarning shaxsan o‘zlari mas‘uldirlar.

**1-sho'ba. YASHIL IQTISODIYOTGA O'TISHNING
GLOBAL VA MINTAQAVIY: MUAMMO, MODEL VA
MEKANIZMLARI**

**1-SECTION. GLOBAL AND REGIONAL
PROBLEMS, MODELS AND MECHANISMS OF
TRANSITION TO GREEN ECONOMY**

**1-СЕКЦИЯ. ГЛОБАЛЬНЫЕ И
РЕГИОНАЛЬНЫЕ АСПЕКТЫ ПЕРЕХОДА К
ЗЕЛЕННОЙ ЭКОНОМИКЕ:
ПРОБЛЕМЫ, МОДЕЛИ И МЕХАНИЗМЫ**

7. <https://world-statistics.org/>
8. <https://sustainabledevelopment.un.org/content/switzerland/waste>
9. <https://www.nea.gov.sg/our-services/waste-management>

Rakhmatullaeva Firuza Mubinovna
 PhD in Economics, docent
Khayrilloev Sunnatillo Bakhtiyorovich
 Student of Bukhara State University

POSSIBILITIES AND PROSPECTS OF DEVELOPMENT OF BIOECONOMY AND CIRCULAR ECONOMY IN UZBEKISTAN

The importance of the bioeconomy cannot be overstated, as it represents a sustainable and innovative approach to addressing a myriad of global challenges while fostering economic growth, environmental stewardship, and social well-being. Here are several key reasons why the bioeconomy is crucial:

1. **Sustainability:** At its core, the bioeconomy is founded on the sustainable use of renewable biological resources. By harnessing the power of nature, the bioeconomy offers solutions that minimize environmental impact, reduce dependence on finite resources, and promote long-term ecological balance.

2. **Economic Growth:** The bioeconomy drives economic growth by creating new markets, industries, and job opportunities. From biotechnology and bioenergy to bio-based materials and sustainable agriculture, bioeconomy sectors stimulate innovation, attract investment, and contribute to GDP growth.

3. **Resource Efficiency:** By adopting principles of circular economy, the bioeconomy optimizes resource utilization, minimizes waste generation, and promotes resource efficiency. Through recycling, reuse, and regeneration, bioeconomy initiatives contribute to a more sustainable and resilient economy.

4. **Climate Change Mitigation:** Bioeconomy solutions play a crucial role in mitigating climate change by reducing greenhouse gas emissions, sequestering carbon, and promoting carbon-neutral practices. Bio-based fuels, materials, and technologies offer alternatives to fossil fuels and help decarbonize key sectors of the economy.

5. **Food Security and Agriculture:** In the face of a growing global population and changing climate, the bioeconomy enhances food security and agricultural sustainability. Through advances in crop breeding, precision agriculture, and sustainable farming practices, the bioeconomy contributes to resilient food systems and ensures access to nutritious food for all.

6. **Health and Medicine:** Biotechnology and bioeconomy innovations have revolutionized healthcare, enabling personalized medicine, advanced diagnostics, and novel therapies. From pharmaceuticals and vaccines to medical devices and regenerative medicine, the bioeconomy improves health outcomes and enhances quality of life.

7. **Biodiversity Conservation:** The bioeconomy values and preserves biodiversity, recognizing the importance of ecosystems services and genetic diversity for human well-being. By promoting sustainable land management, habitat restoration, and conservation practices, the bioeconomy contributes to biodiversity conservation and ecosystem resilience.

8. **Rural Development and Social Equity:** Bioeconomy initiatives have the potential to promote rural development, empower local communities, and reduce inequalities. By creating opportunities for smallholder farmers, indigenous peoples, and marginalized groups, the bioeconomy fosters inclusive growth and shared prosperity.

The development of bioeconomy and circular economy in Uzbekistan can bring about a range of significant benefits for the country. Here are some key reasons why focusing on these areas is important:

1. **Environmental sustainability:** Adopting bioeconomy and circular economy principles can help Uzbekistan transition towards a more sustainable economy. By promoting the efficient use of resources, reducing waste, and promoting renewable energy sources, the country can reduce its environmental impact and contribute to global efforts to combat climate change.

2. **Economic diversification:** Investing in bioeconomy sectors such as agriculture, forestry, and bio-based industries can help diversify Uzbekistan's economy and reduce its dependence on traditional sectors. This can create new opportunities for economic growth, job creation, and innovation.

3. **Resource efficiency:** A circular economy approach focuses on maximizing the value of resources by keeping them in use for as long as possible and minimizing waste. This can help Uzbekistan reduce its reliance on imported raw materials and improve resource efficiency, leading to cost savings and increased competitiveness.

4. Innovation and competitiveness: Embracing bioeconomy and circular economy concepts can stimulate innovation in Uzbekistan's industries, leading to the development of new sustainable products, services, and technologies. This can enhance the country's competitiveness in the global market and attract investment in sustainable solutions.

5. Resilience to external shocks: By building a more resilient and sustainable economy based on bioeconomy and circular economy principles, Uzbekistan can better withstand external economic shocks, such as fluctuations in commodity prices or disruptions in global supply chains.

The bioeconomy, on the other hand, prioritises the use of renewable biological resources in the development of products and processes, aiming to reduce humanity's reliance on crude oil and curbing the use of non-sustainable fossil-based resources. Like the circular economy, bioeconomies convert waste streams into high-value products (including bio-based ingredients and materials), maximising the use of by-products through valorisation: unlike the circular economy, however, the bioeconomy emphasises the use of sustainable resources. Further reducing greenhouse gases, the bioeconomy promotes a production cycle more harmonious with nature, avoiding the use of non-renewable resources altogether and so refraining from contributing to the depletion of the Earth's finite materials.

The Bioeconomy Benefits More Than Just The Environment

As well as reaping significant environmental benefits, the adoption of a bioeconomy will contribute to the creation of many high-value jobs, while providing resource-efficient solutions to tackle a variety of global challenges. Biodegradable plastics, such as those Activatec are helping to develop as part of the Deep Purple international partner project, can replace reliance on conventional plastics, which are harmful to the environment and take decades to decompose, necessitating large landfill sites.

These conventional plastics even make their way into our food chain: there is an estimated 46,000 pieces of plastic in every square mile of the ocean. Contaminated fish, who have consumed microplastics, make their way into supermarkets and restaurants around the world and eventually end up on our plates.

Biodegradable bioplastics such as Polyhydroxyalkanoates, produced as part of a bioeconomy, divert this problem, while the production of these plastics from wastewater streams requires significantly less energy than creating synthetic and artificial ingredients through other means.

The Circular Bioeconomy

Bioeconomies share similar goals with circular economies to such an extent that the term 'circular bioeconomy' has been proposed to refer to the intersection between the two, highlighting the significant aims prioritised by both economic systems:

- The improvement of resource- and eco-efficiency
- The maintenance of a low greenhouse gas footprint
- The reduction of demand for non-renewable fossil-based carbon
- The valorisation of waste side-streams

While a circular economies prioritises the maintenance of the value of products (including fossil-based products) and the bioeconomy aims to remove reliance on finite resources altogether, both systems ultimately use different but complementary approaches to promote a sustainable world with a lower carbon footprint.

Threats To The Bioeconomy And How To Combat Them

International investors are increasingly seeing the environmental and economic benefits of a bioeconomy, with the British bioeconomy alone being valued at around £220 billion and contributing to over five million jobs in the UK. However, threats to the production of bio-based products from renewable sources (such as Polyhydroxyalkanoates; Ectoine, a high-value bioproduct used in the cosmetics industry to treat dryness of the skin; and Lactobionic Acids, an important antioxidant) include cheap oil and fossil-based non-renewable alternatives, whose relatively low prices discourage investment in low-carbon sustainable products despite the harm fossil-based products cause to the environment.

Nonetheless, companies are working to valorise by-products and bioproducts in order to advance and promote the circular bioeconomy. Activatec, a biotechnology start-up based in Nottingham's BioCity, are specialized in the upscaling of processes in order to efficiently increase product output, ensuring the economic viability and competitive commercial potential of bio-based ingredients and materials. Working as part of a number of international partner projects, they develop viable alternatives to non-renewable carbon-derived sources and ingredients, thereby contributing to the bioeconomy.

The worldwide biotechnology market is expected to value at approximately £600 billion by 2024 — but only by ensuring the economic viability of sustainable bioproducts and providing suitable alternatives to fossil-based sources can we achieve a fully sustainable circular bioeconomy, an economic model that looks to the future and works harmoniously with nature.

Important for sustainable development and the transition to a circular economy is the ambition to diversify and upgrade production, especially in tradable sectors. This, in turn, requires innovation – or trying out new ideas more systematically to discover what works and what does not. Innovation entails the generation and effective transfer of knowledge and technologies, encouraging increased value creation for growth and employment and the overall prosperity of the country. This calls for creating a conducive business environment, improving market competition and strengthening the private sector with solid capacities to absorb innovation. In recognition of these challenges, the Government has demonstrated strong political commitment to economic reform, sustainable development and, more recently, digitalization and innovation policy. Not only has the Government announced a new national development strategy for 2022–2026, but also it has drafted a new national innovation strategy for 2022–2030. Uzbekistan stands out among newly independent countries in the region for avoiding significant slumps and retaining a relatively diversified economy in its gradual transition.

- Over the past five years, Uzbekistan has revamped reform efforts by engaging in broad, ambitious economic reforms to open up the economy, boosting growth and investment.

- Existing drivers of growth are reaching the point of diminishing returns, highlighting the need for innovation policy to enable and encourage the economy to diversify and tackle remaining structural challenges.

- Addressing diversification and structural challenges through innovation will require creating a conducive business environment, strengthening market competition and supporting firms in absorbing and adapting ideas, business models and technologies that have proven their viability in other countries or sectors more systematically.

- The country has significant potential for innovation and can build on several strengths, including a qualified workforce, competitive wage levels and public research, as well as opportunities such as services trade and the digital economy.

- Several factors leave significant potential for innovation untapped: low levels of expenditure on research and development (R&D), the weak role of R&D and innovation in the private sector, the skills gap in the labour market, and low levels of absorptive capacity among firms in the private sector.

Overall, the development of bioeconomy and circular economy in Uzbekistan offers a pathway towards a more sustainable, diversified, and resilient economy that benefits both the country and the planet. It is crucial for policymakers, businesses, and stakeholders to work together to promote and implement these concepts in order to achieve long-term sustainable development goals.

In conclusion, the bioeconomy offers a holistic and sustainable approach to addressing interconnected challenges facing society, economy, and environment. By harnessing the power of nature, promoting innovation, and embracing principles of sustainability, the bioeconomy paves the way towards a more resilient, equitable, and prosperous future for generations to come.

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Turobova H.R.,

Associate professor, PhD
Department of Green economy and agribusiness,
Bukhara State University
hulkar-rustamkhon@mail.ru

BIOECONOMY - AS AN IMPORTANT SECTOR OF THE ECONOMY

Introduction. Bioeconomics is generally recognized as a prospect of saving the Earth's energy resources, as its main areas are the development of alternative energy sources and energy efficiency, efficient use of waste, development of biomass-based renewable energy, greening the industrial sector, increasing agricultural sustainability, new food production, development of medical technologies, use of biotechnologies based on renewable biological raw materials, etc.

Uzbekistan has also formed a legal framework for the development of bio economics and developed long-term development strategies. "Strategy of the Republic of Uzbekistan for the transition to a "green" economy in 2019-2030 years", "Strategy of agricultural development of the Republic of Uzbekistan for 2020-2030 years" and other similar documents point to the inadequacy of the economy's energy efficiency, inefficient use of natural resources, slow technological innovation, and the inactivity of small businesses in implementing innovative solutions to develop a "green" economy. Solving the existing problems requires radical changes in the ways of using natural and energy resources through the development of low carbon consumption in all sectors of the economy and the introduction of efficient and environmentally friendly technologies, as well as the integration of the principles of "green" economy focused on sustainable agriculture.

Growing demand around the world, declining natural resources, loss of biodiversity and climate change are calling us to develop a bio economy based on renewable natural resources. The depletion of biodiversity resources is primarily due to the impact of human activities. Over the past 50 years, the population of the planet has increased 3.5 times, the volume of drinking water consumed 11 times, arable land 2 times, the number of registered vehicles 10 times, the use of oil products 7 times, the capacity of power plants 21 times. Fauna and flora species decreased by 20 percent.

Every year, 5 billion tons of carbon dioxide, 200 million tons of carbon monoxide, 146 million tons of sulfur oxides and 35 million tons of nitrogen oxides are released into the atmosphere. As a result of irrational human activities, many dangerous processes are taking place in the biosphere. In 2030, the world will need 50% more food, 45% more energy and 30% more water than it does now. Growing demand leads to a shortage of natural resources and increases their cost. Thus, the availability of raw materials and the efficiency of their use will become a new competitive advantage. Increased attention to the environment and stricter legislation will also be a factor in the production of products that have a less harmful impact on the environment. This global development lays the groundwork for change in the bio economy. Bio economics is not a new industry; it is a combination of several major manufacturing and processing industries.

In recent years, the term bio economics has also appeared in many Uzbek scientific literatures. The term bio economics may be one of the new terms for us, but this term already has the basis of research work of European and other foreign scientists and has a tendency to develop as one of the priorities of foreign economics.

Food shortages associated with world population growth as a key condition for bio economic development; limited resources of minerals, raw materials and energy; environmental pollution and damage to the environment; accelerating space exploration; the Fourth Industrial Revolution and the Quantum Computing Approach, which changed the mental model of man, changed his way of life, and contributed to the formation of a new system of institutions; change in science, the rapid development of biotechnology as a science, the emergence of nanotechnology and nanotechnology; factors such as individual acceleration of technological development rates can be recognized. In addition, the above reasons (circumstances) force modern society to move to mechanisms to maintain a balance between the limited resources consumed and the accumulation of harmful wastes.