GREEN ECONOMY AND SUSTAINABLE DEVELOPMENT: TRANSFORMING TRADITIONAL BUSINESS MODELS

Irina Taranova[1], Fatima Uzdenova[2]

•

[1]Financial University under the Government of the Russian Federation
[2]North Caucasus State Academy, RUSSIA
taranovairina@yandex.ru

Abstract

The transition to a green economy is pivotal for achieving sustainable development in the face of escalating environmental challenges. This paper explores the transformation of traditional business models to align with green economy principles, emphasizing the integration of sustainability into core operations. By analyzing various case studies, we demonstrate how businesses can adopt innovative practices that reduce their ecological footprint while enhancing economic performance. The research highlights key strategies, such as circular economy approaches, renewable energy adoption, and sustainable supply chain management, which not only mitigate environmental impacts but also drive competitive advantage. Furthermore, we discuss the role of policymakers in fostering an environment conducive to green investments and the importance of stakeholder engagement in this transformative process. Ultimately, this paper aims to provide insights for businesses looking to navigate the complexities of sustainable development while contributing to a resilient and equitable economy.

Keywords: sustainable supply chain, environmental impact, innovation, competitive advantage, stakeholder engagement, policy framework, eco-friendly practices

I. Introduction

As global environmental challenges intensify, the need for a transition to a green economy has never been more urgent. A green economy is defined as one that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities. This paradigm shift is essential for addressing issues such as climate change, resource depletion, and biodiversity loss, which pose significant threats to sustainable development.

Traditional business models often prioritize short-term profits over long-term sustainability, leading to practices that are harmful to the environment. However, an increasing number of businesses are recognizing the importance of integrating sustainability into their operations. This transformation not only addresses ecological concerns but also opens up new avenues for innovation and competitive advantage. By adopting green practices, companies can enhance their brand reputation, attract environmentally conscious consumers, and achieve operational efficiencies.

This paper explores how businesses can successfully transition to more sustainable models by examining key strategies, including the circular economy, renewable energy integration, and sustainable supply chain management. It also emphasizes the critical role of policymakers in creating an enabling environment for green investments and fostering collaboration among stakeholders. Through this comprehensive analysis, we aim to provide insights and practical recommendations for businesses seeking to thrive in a green economy while contributing to sustainable development goals. This study delves into the concept of the green economy and its

impact on economic development and operational practices. It is based on the premise that traditional linear business models have become unsustainable due to their detrimental effects on the environment, the depletion of natural resources, and the decline in living standards. In light of these challenges, the green economy, which is intricately linked to the principles of the circular economy and bioeconomy, emerges as a crucial framework for fostering sustainable development. The primary objective of this exploration is to establish a balance among the enduring social, environmental, and economic goals of humanity.

Figure 1: *Inclusive Green Economy*

The Inclusive Green Economy (IGE) model, illustrated in Fig. 1, distinguishes itself from traditional economic models by integrating three core components: environmental, social, and economic factors. Emerging from the green economy concept, IGE emphasizes a low-carbon, efficient, and clean production process, while also highlighting aspects of consumption and outcomes centered around sharing, circular practices, collaboration, solidarity, resilience, opportunity, and interdependence. The IGE framework posits that there are multiple pathways to achieving environmental sustainability. Transitioning to an inclusive green economy necessitates the promotion and support of sustainable lifestyles, the enhancement of sustainable consumption and production (SCP), and the encouragement of eco-innovation and resource efficiency. This green economic approach, which includes Corporate Social Responsibility (CSR), offers numerous advantages, including economic, health, safety, social, and environmental benefits. Integrating a green economy within an existing organization presents challenges, but one effective strategy is to manage the business model in a way that incorporates green management principles, ultimately enhancing Corporate Social Responsibility.

By examining the core components of the green economy, this paper presents an innovative development framework that encourages the integration of green, circular, and bioeconomic principles. Such integration is essential for promoting future economic and social progress while ensuring environmental sustainability. Through this analysis, we aim to highlight the potential pathways for businesses and policymakers to transition towards more sustainable practices, ultimately contributing to a resilient and equitable economy. Over the last decade, a frequent claim has been that traditional economic models need to be reformed to address climate change, biodiversity losses, water scarcity, and other pressing challenges while simultaneously tackling key social and economic issues. The global financial crisis of 2008–2009 intensified this debate, leading to the emergence of the vision of a ‘green economy’. In 2015, countries worldwide adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs).

These goals recognize that ending global poverty must go hand-in-hand with strategies for economic growth while addressing various social needs, including education, health, social protection, and job creation, all while tackling environmental pollution and climate change.

The SDGs establish a real link between ecological and economic systems and reinforce the necessity for a transition to a green economy, which implies a fundamental transformation toward more sustainable modes of production and consumption. This article focuses on a particularly critical aspect of such a transition: the development of sustainable technological change. This change refers to production and consumption patterns that result in significantly reduced negative impacts on the natural environment, including global climate change.

Specifically, the article discusses several key challenges in supporting sustainable technological change and overcoming the barriers to it. These challenges aim to communicate essential lessons from academic research to policymakers, professionals, and the general public. Addressing climate and environmental challenges requires not only natural scientific knowledge and engineering expertise regarding various technical solutions (such as carbon-free energy technologies) but also recognition that pursuing sustainable technological change is a societal, organizational, political, and economic endeavor involving several non-technical challenges.

Our planet is currently confronted with significant economic, social, and environmental challenges. In response to these issues, the Sustainable Development Goals (SDGs) outline global priorities and aspirations for 2030, presenting an unparalleled opportunity to eradicate extreme poverty and guide the world toward a sustainable future.

Governments around the world have already committed to these goals, and it is now imperative for businesses to take action. The SDG Compass provides insight into how the SDGs impact your business, equipping you with the tools and knowledge needed to embed sustainability into the core of your business strategy.

The guide outlines five steps that companies can take to enhance their contributions to the SDGs. Organizations can use these steps to either set new goals or align their existing strategies, depending on their current stage in integrating sustainability into their core business practices.

Figure 2: *The SDG Compass*

For instance, the transitions literature identifies many sectors—such as energy generation and water supply—as socio-technical systems and innovation systems. These systems consist of networks of actors (individuals, private firms, research institutes, government authorities, etc.), the knowledge these actors possess, and the relevant institutions (legal rules, codes of conduct,

etc.). The development of new carbon-free technologies often necessitates the establishment of new value chains involving actors that may not have previously interacted. This process can be lengthy and transformative, resulting in legal amendments, changes in consumer behavior, distributional effects, infrastructure development, and the emergence of novel business models.

II. Methods

Literature Review

- Description: A systematic literature review will be conducted to synthesize existing research on green economy principles, circular economy, bioeconomy, and sustainable development. This will include academic journals, policy papers, and reports from international organizations (e.g., UNEP, EU, World Bank).
- Process:
  - Identify key themes, frameworks, and case studies relevant to the green economy.
  - Analyze previous findings to understand the evolution of the green economy concept and its implications for business models.
  - Summarize the benefits and challenges associated with implementing green economy practices in various sectors.

Case Study Analysis

- Description: This method will involve in-depth case studies of specific countries or regions that have successfully transitioned to a green economy, as well as those still in the early stages of this transition.
- Process:
  - Select case studies from both developed (e.g., EU countries) and developing regions (e.g., Western Balkans) to provide a comparative analysis.
  - Examine policies, initiatives, and business practices that illustrate the transformation from traditional models to green economy practices.
  - Evaluate the outcomes, focusing on economic, environmental, and social impacts, and derive best practices and lessons learned from each case.

Stakeholder Interviews

- Description: Semi-structured interviews will be conducted with stakeholders involved in the implementation of green economy initiatives, including policymakers, business leaders, environmental NGOs, and academic researchers.
- Process:
  - Develop an interview guide with open-ended questions aimed at understanding stakeholders' perspectives on the challenges, opportunities, and effectiveness of green economy initiatives.
  - Conduct interviews with a diverse range of stakeholders to capture various viewpoints and insights.
  - Analyze the interview data using thematic analysis to identify common trends, barriers, and recommendations for enhancing the transition to a green economy.

III. Results

The term "green economy" is defined by the United Nations Environment Programme (UNEP) as an economy that enhances social well-being and reduces inequalities while significantly decreasing environmental risks and ecological scarcities (UNEP 2011) (fig.3). The fundamental components of green economies include the circular economy, bioeconomy, clean technologies, waste management hierarchy, industrial ecology, and strategies focused on environmental conservation and restoration. Numerous international organizations, such as the UN, IMF, World Bank, and World Trade Organization, support the effective implementation of

green economy practices.

The European Union's "European Strategy for the Bioeconomy," adopted in 2012, defines the bioeconomy as a process involving the use of renewable biological resources to produce food, biomaterial-based products, and bioenergy. This strategy highlights the potential for utilizing renewable biological resources, emphasizing the need for sustainable manufacturing and bioenergy generation. However, transitioning to these new production methods requires the adoption of innovative and often significantly different technologies. Thus, the successful implementation of these emerging development paradigms calls for innovative solutions across various sectors, including product development, materials, and technological and organizational processes.

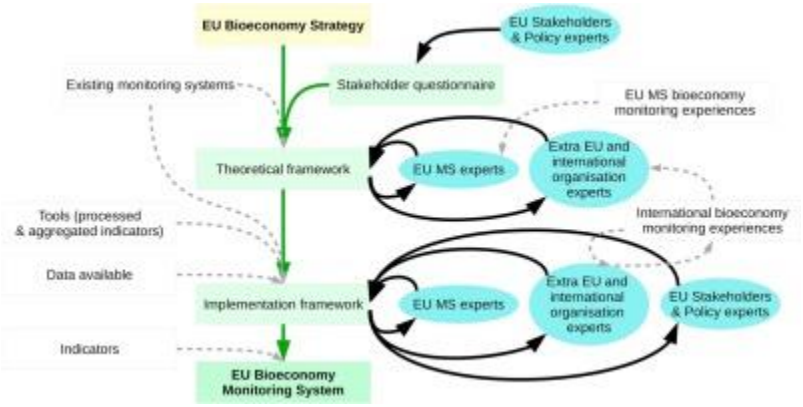

Figure 3: *Development of a bioeconomy monitoring framework for the European Union*

Technological and metallurgical innovations play a crucial role in this transition, facilitating the creation of products and services and adopting processes that are economically viable while minimizing environmental degradation. The metallurgy sector, which is fundamental to civilization's advancement, must embrace the principles of the green economy. The sector's significant growth has presented considerable energy and environmental challenges. Transitioning from traditional to green metallurgical processes offers substantial benefits, as conventional practices heavily depend on fossil fuels, resulting in considerable CO2 emissions. There is an urgent need for innovative strategies to replace fossil fuels with renewable energy sources while also reducing energy consumption and CO2 emissions.

As a result, topics such as the substitution of renewable energy for fossil fuels, the utilization of metallurgical slag as a resource, low-carbon smelting technologies in the steel industry, and the mechanisms and control processes for producing non-quenched and tempered high-strength steel for automotive applications have gained significant attention for their potential in energy recovery and technological advancement within the metallurgy sector.

The European Union employs the ecological innovation index to measure the progress of ecological innovations among its member countries. This index comprises sixteen indicators organized into five thematic categories: resources essential for developing ecological innovations, activities conducted during the ecological innovation process, outcomes of ecological innovations, achieved resource use efficiency, and socio-economic impacts.

IV. Discussion

One of the fundamental principles of the green economy is the bioeconomy, which emphasizes the utilization of renewable biological resources for producing materials, chemicals, and energy . This methodology converts sustainable biological resources into value-added products. Perspectives on the bioeconomy vary depending on its focus, which includes resources

such as biomaterials and energy derived from agriculture, oceans, and forests, as well as biotechnology with an emphasis on the commercialization of biotech innovations and ecological processes coupled with territorial adaptation. EU documents highlight the importance of integrating the bioeconomy with the circular economy, focusing on concepts such as value chain oversight, sustainability, biorefining, efficient resource use, and cascading biomass utilization. They underscore the crucial role of research, innovation, and societal shifts towards sustainability.

The concept of the circular economy promotes a business model that facilitates the cyclical movement of materials and energy. The primary objective of this initiative is to enhance the durability of materials and energy through inventive design strategies and recycling practices. This approach aims to reduce waste, promote the adoption of renewable energy sources, and ensure that pricing accurately reflects actual costs. Implementing the principles of the circular economy requires a holistic approach across macro, meso, and micro levels. At the macro level, it necessitates reconfiguring the entire industrial framework of an economy. The meso level focuses on regional economies, particularly eco-industrial parks, whereas the micro level deals with individual businesses, consumers, and products. Essentially, the circular economy aims to create a closed loop that encompasses the procurement of raw materials, their conversion into products, and the recycling of resources for use in subsequent production cycles.

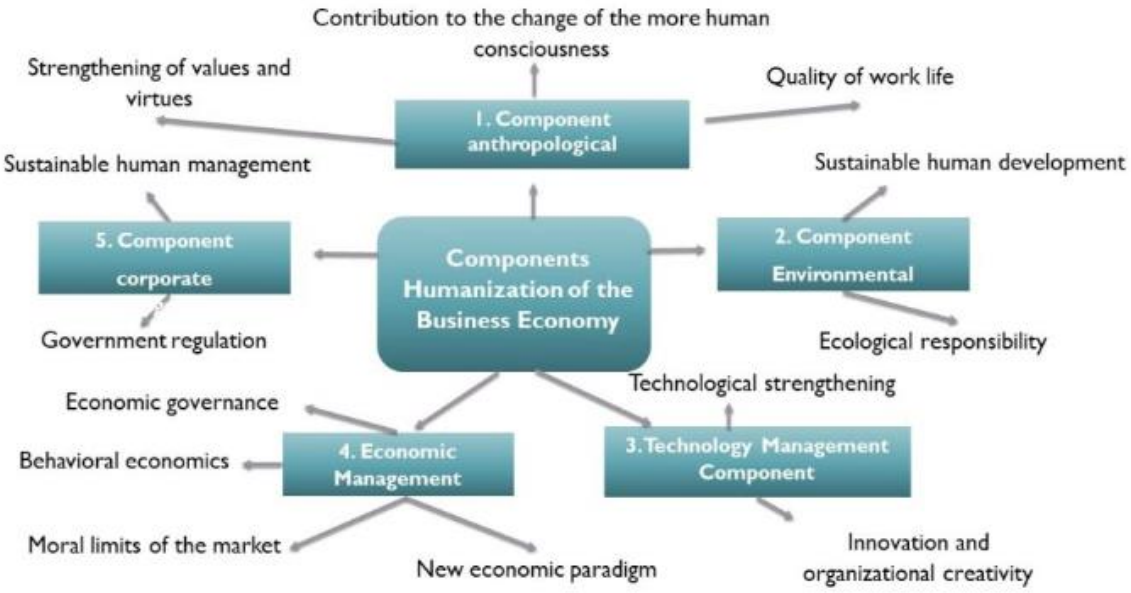

Figure 4: *Hybrid model for the humanization of the business economy and corporate social responsibility*

The model developed, drawing on both classical and modern economic theories, aims to identify and understand potential gaps in knowledge among companies regarding various critical topics. These topics include the strengthening of values and virtues, shifts in human consciousness, sustainable development, technological advancement, innovation and creativity, quality of work life, ecological responsibility, economic governance, behavioral economics, moral limits of the market, and the emergence of a new economic paradigm emphasizing more humane management.

The underlying concern is that ignorance in these areas can hinder companies from implementing humanization policies within the business economy. The strength of this hybrid model lies in its integration of components and principles derived from the theories and authors studied. By addressing these gaps, the model aims to foster more sustainable businesses and environmentally conscious consumers.

Furthermore, the application of this model is anticipated to enhance companies' competitiveness, productivity, research capabilities, innovation, and technology, all within a framework of social responsibility. Ultimately, the purpose of this model is to engage

stakeholders—including business leaders, employees, and consumers—in adopting best practices for humanizing the business economy, thereby promoting sustainability and long-term viability.

The mission of the circular economy is to maximize the conservation and enhancement of natural capital by keeping materials and components in use for as long as possible and extending product lifespan.. This approach aims not only to boost business efficiency but also to mitigate and eliminate external economic impacts harmful to human health, natural environments, and ecological systems.

The analysis of the principal characteristics of the green, bioeconomy, and circular economy reveals that, although distinct, these concepts complement each other. For long-term sustainable development, it is essential to apply all three concepts simultaneously. Systemically, the bioeconomy and circular economy act as subsystems within the green economy framework. The circular economy utilizes both renewable and non-renewable resources, while the circular bioeconomy exclusively employs renewable resources to transform waste into value-added products.

Implementing the green economy concept is vital not only for meeting economic objectives but also for addressing environmental and social goals. This approach can lead to numerous positive outcomes, including:

- Enhanced well-being for individuals
- Reduction of poverty
- Achievement of social equality
- Minimization and elimination of environmental damage
- Decrease in carbon emissions
- Complete elimination of pollution
- Primarily utilizing renewable energy sources
- Creation of new green employment opportunities
- Mitigation of biodiversity loss
- Proper waste management.

Thanks to their advanced economic and technological progress and available resources, developed nations have been the pioneers in adopting green economy principles. In contrast, countries in the Western Balkans, including our own, are just beginning to undertake this endeavor, embracing it at a significantly slower rate.

The primary challenges hindering a smooth transition to these new “green” development models include a low level of economic development, an inadequate economic structure, and a scarcity of necessary resources. The adoption of the “Action Plan for the Common Regional Market of the Six Western Balkan Countries for the Period 2021-2024” at the Berlin Process summit in Sofia, along with the document “Common Regional Market - A Catalyst for Deeper Regional Integration, Economic Integration, and a Step Towards the EU Single Market,” addresses the development challenges of underdeveloped countries that impede the progress of developed nations. These documents underscore the necessity for Western Balkan countries to enhance their economic competitiveness and expedite their integration into the single European market.

Establishing a digital, investment, and industrial innovation zone in the region, aligned with EU regulations, is highlighted as a significant factor in achieving this objective more swiftly. The “Green Agenda for the Western Balkans for the Period 2021-2030” outlines the commencement of the transition towards “green” economic practices within the Western Balkan countries. This agenda identifies the primary pillars for these countries’ long-term green economic transition as follows:

1. Climate, energy, and mobility
2. Circular economy
3. Reduction of environmental pollution
4. Sustainable agriculture and food production
5. Biodiversity conservation

References

[1] Mrochko L.V., Spiridonova G.V., Kuznetsova M.I., Solovieva E.A. Ecological worldview as the basis of modern business in the ESG concept//Economic and social-humanitarian research. 2023. No. 1 (37). P. 83-92.

[2] Guryanova A.V., Timofeev A.V. Noospheric globalization in the context of the sustainable development model // Economic and social-humanitarian studies. 2023. No. 1 (37). P. 103-110.

[3] Garrido MAB, Villar IM (2023) Teaching transversal competences in civil and procedural law through the sustainable development goals (SDGs). In: Gstrein OJ, et al (eds) Modernising European legal education (MELE). Springer, Cham

[4] N. Dobbeling-Hildebrandt, ¨ K. Miersch, T.M. Khanna, M. Bachelet, S.B. Bruns, M. Callaghan, O. Edenhofer, C. Flachsland, P.M. Forster, M. Kalkuhl, et al., Systematic review and meta-analysis of ex-post evaluations on the effectiveness of carbon pricing, Nat. Commun. 15 (1) (2024) 4147, https://doi.org/10.1038/ s41467-024-48512-w.

[5] Santikarn M; Churie Kallhauge AN; Bozcaga MO; Sattler L; Mccormick MS; Ferran Torres A; Conway D; Mongendre L; Inclan C; Mikolajczyk S; et al.; Washington, D. C.: World Bank Group, 2021.

[6] Taranova I.V., Podkolzina I.M., Uzdenova F.M., Dubskaya O.S., Temirkanova A.V. Methodology for assessing bankruptcy risks and financial sustainability management in regional agricultural organizations// The Challenge of Sustainability in Agricultural Systems. Cep. "Lecture Notes in Networks and Systems, Volume 206" Heidelberg, 2021. C. 239-245.

[7] European Commission (2022a) Communication from the Commission. Guidelines on the application of the Regulation (EU, EURATOM) 2020/2092 on a general regime of conditionality for the protection of the Union budget. Brussels, 2.3.2022 C (2022) 1382 final.

[8] Taranova I.V., Podkolzina I.M., Uzdenova F.M., Dubskaya O.S., Temirkanova A.V. Methodology for assessing bankruptcy risks and financial sustainability management in regional agricultural // Organization. 2021. № 206. C. 239.

[9] Taranova I.V., Tokova L.D., Shavrina J.O., Syrovatskaya V.I., Ivanova E.A. Banking management as the basis for effective management of a commercial bank// Modern Global Economic System: Evolutional Development vs. Revolutionary Leap. Institute of Scientific Communications Conference. Cham, 2021. C. 2137-2144.

[10] Salygin V.I., Deniz D.S. Potential of renewable energy and transformation of the global fuel and energy balance: Theoretical aspects // Issues of Innovative Economics. 2021. Vol. 11. No. 4. P. 1893-1904.