

Sustainability and Green Economy Frameworks

Održivost i okviri zelene ekonomije

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Abstract: According to international experience, implementing conceptually novel management tools based on integrated approaches to the notion of sustainable development can increase the level of environmental safety of the national economy. The goal of the study is to generalize and systematize existing conceptual approaches to the definition of this notion in order to clarify the meaning and content of the phrase "green economy". The research was carried out using general scientific methods, including classifications to systematize theoretical approaches to the definition of "green economy", which are proposed by various scientific schools. Furthermore, structural and logical generalization to clarify the terminology, analysis and synthesis to summarize the existing conceptual approaches and green economy frameworks was conducted. The paper gives an insight into how the green economy develops, as well as the conditions necessary for its construction and the difficulties it faces. The various scientific definitions of the "green economy" are analysed and summarized. Based on findings, this paper gives recommendations for the "green" transformation.

Keywords: green transformation, integrated strategy, integrated logistics system, green growth.

Sažetak: Prema međunarodnom iskustvu, primenom konceptualno novih upravljačkih alata zasnovanih na integriranim pristupima pojmu održivog razvoja može se povećati nivo ekološke bezbednosti nacionalne privrede. Cilj studije je da se uopšte i sistematizuju postojeći konceptualni okviri i pristupi zelene ekonomije kako bi se razjasnilo značenje i sadržaj te sintagme. Istraživanje je sprovedeno korišćenjem opštih naučnih metoda, uključujući klasifikaciju za sistematizaciju teorijskih pristupa definiciji „zelene ekonomije“, koje predlažu različite naučne škole. Dalje, izvršena je strukturna i logička generalizacija radi pojašnjenja terminologije, te analiza i sinteza kako bi se sumirali postojeći konceptualni okviri i pristupi zelene ekonomije. U radu se daje uvid u to kako se razvija zelena ekonomija, uslovi neophodni za njenu izgradnju i teškoće sa kojima se suočava. Analiziraju se i sumiraju različite naučne definicije „zelene ekonomije“. Na osnovu nalaza, ovaj rad daje preporuke za „zelenu“ transformaciju.

Ključne reči: zelena transformacija, integrirana strategija, integrirani logistički sistem, zeleni rast.

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INTRODUCTION

The development of fundamentally new economic models is required due to the volatility of global development trends, the turbulence of the global economy, and the imbalance of economic, social, and environmental trends, which is escalating. The concept of sustainable development, which has come to represent humanity in the twenty-first century, should guide its formation. There are frequently discrepancies in scientific viewpoints on the concept of "Sustainable Development" among the global community. Numerous scholars, teachers, and businesspeople consider sustainability in the perspective of GDP-based economic growth. For the global community, sustainability is primarily the growth of three processes - economic, social, and environmental - in a manner that is harmonious and balanced. Long-term sustainable economic development is unachievable without consideration of social and environmental considerations. New economic models that consider environmental factors have proliferated in the context of sustainable development, both in theory and in practice: the Green Economy (Lew et al., 2018; Seroka-Stolka & Ociepa-Kubicka, 2019; Löschel, 2020; Chițimiea et al., 2021; Jefimovaitė & Vienažindienė, 2021; Yingfei et al., 2022; Cheba et al., 2022; Mealy & Teytelboym, 2022), the Green Growth Economy, the Low-Carbon Economy, the Circular Economy (Winans et al., 2017; García-Barragán et al., 2019; Grdic et al., 2020), the Bioeconomy, the Blue Economy, etc. Emerging economic development models are becoming more "hybrid", like the Circular Bioeconomy. The world community established the United Nations Sustainable Development Goals (SDGs) as objectives for humanity and all nations for the years 2016 through 2030, expanding the United Nations Millennium Development Goals (2000-2015). The SDGs put into practice the sustainability tenets outlined by the 2012 UN Conference in Rio de Janeiro. This paper complies with international law and takes into account regional and national opportunities. The transition to a new economic model, called the green economy, should be made easier by the objectives of sustainable development. The economic, social, and environmental aims have been somewhat balanced by the SDGs system, which is pretty balanced itself. In light of this, the goal of this research is to examine the historical emergence and evolutionary development of the notion of the "green economy", as well as the generalization and organization of pre-existing scientific theories to create this category.

1. MATURING OF THE GREEN ECONOMY FRAMEWORK

1.1. Sustainable development within the green economy framework

In the late 1980s of the twentieth century, the principles of sustainable development set the groundwork for the development of the idea of a green economy. There are numerous definitions of sustainable development, but the one offered in 1987 by the UN Commission led by G.H. Brundtland (Lea et al., 1989) is the most popular and widely accepted which defines Sustainable development as a development that meets the needs of the present generation without compromising the vital needs of future generations.

The highest level of the international community endorsed the "Agenda for the 20th Century" in 1992 at the UN Conference in Rio de Janeiro, which outlines a worldwide partnership for sustainable development. Economic, social, and environmental considerations all play a role in sustainable development. Only by fulfilling the sustainability requirements for each of these measurements can sustainable development be accomplished. Today, it is becoming more and more obvious that sustainable development is the key idea for the twenty-first century. Based on the idea of sustainable development, which should be based on the green economy, the Paris Climate Agreement establishes priorities for addressing the global climate threat until 2030-2050, which is crucial for the shift to sustainable development. The 2030 Agenda for Sustainable Development (2015) also includes the UN Sustainable Development Goals for 2015-2030.

The conceptual priorities and the precise goals and objectives that countries must pursue are successfully merged in these UN Commission publications. The application of the measurements and quantitative indicators contained in the documents enables the individual governments to plan their actions targeted at putting the developed management decisions into practice. So, in general, we can discuss the global agreement on development in the twenty-first century, which is connected to the shift to sustainable development.

Development based on deteriorating the environment and using up natural resources cannot be sustained over the long term. A green economy, an economy based on green growth, a low-carbon economy, a circular economy, a bioeconomy, a blue economy, and others are among the qualitatively new economic models that the world is searching for in this regard. These new economic theories will

largely be seen as various forms of a green economy. In many nations, research and development as well as practical business activities of the private sector have prioritized the creation and development of new economic models. As a result, the European Community has approved plans for the 2030-2050 period to establish a green, circular, bioeconomy.

The Paris Climate Agreement intends to transition most nations to a low-carbon economy. The significance of fulfilling sustainable development goals has grown in non-financial, social, and environmental reporting of businesses. In the concept papers of numerous international organizations, the new economic perspective is especially evident.

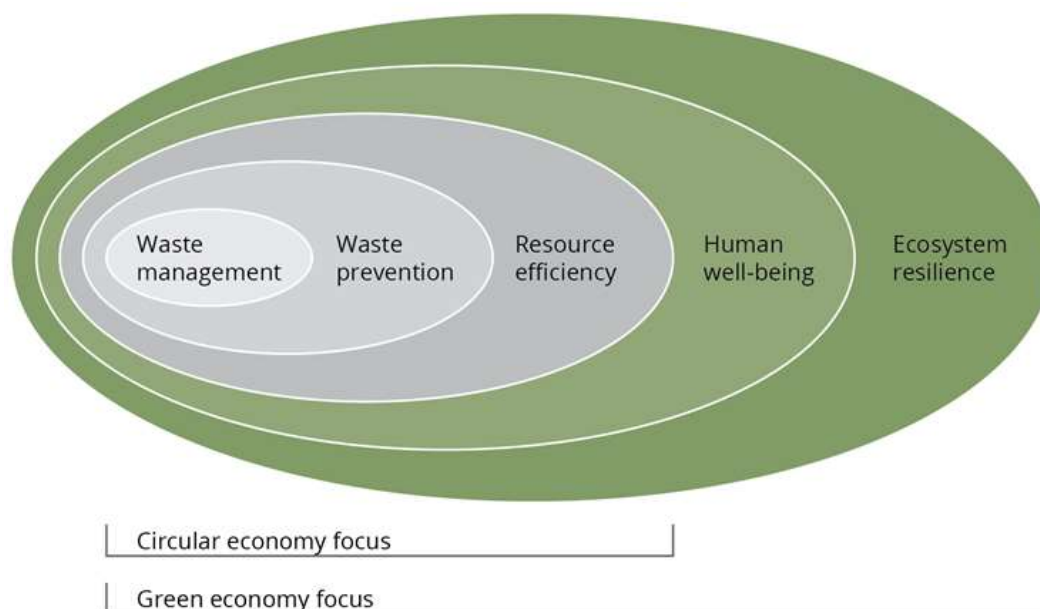


Figure 1. The green economy as an integrating framework for policies on material use (EEA, 2020)

1.2. Green Economy maturing

The green economy (Figure 1) was established by the UN as the economic cornerstone of its plan for the twenty-first century. In its papers, the Organization for Economic Co-operation and Development (OECD), which brings together industrialized nations from around the world, frequently uses the phrase “green growth”. Although it details the economic aspects of green growth, such as support for investment, innovation, and competitiveness, this economic category is associated with the UN green economy. The phrase “low-carbon economy” is frequently used around the globe, particularly in relation to battling climate change and cutting greenhouse gas emissions. At the UN climate conference in Paris in 2015, this concept in particular was used to describe the new economy and its potential future models. To decrease the consumption of conventional hydrocarbons, affluent nations are undergoing fundamental transformations, structural adjustments, and technological advancements. The proportion of renewable energy sources is also rapidly rising, supported by a variety of economic tools like taxes, loans, subsidies, and others. A green economy is said to enhance human well-being and ensure social justice while considerably decreasing dang-

ers to the environment and its deterioration (Morrow, 2014). The idea of a green economy does not supplant the idea of sustainable development, as is stressed in the UN Concept Paper “The Future We Want”. However, it is now more widely acknowledged that establishing a “proper” economy is a key component of attaining sustainable development. The green economy is thus the cornerstone of sustainable development and is founded on its tenets. Important characteristics of such an economic model include (Morrow, 2014) the following, per UN documents: effective use of natural resources, protection and expansion of natural capital, pollution reduction, carbon emission reduction, preservation of biodiversity and ecosystem services, and income and employment growth.

1.3. Principles of green economy development

At the same time, fundamental guidelines for the successful growth of the green economy have been formed based on the generalization of international research on this topic (Jenkins, 2022). The green economy is one way to achieve sustainable development (Bobylov, 2017); it is also an efficient use of resources and energy; it promotes equality and justice between nations and generations; it does not

violate environmental restrictions; it uses an integrated approach to decision-making; it measures progress not only through GDP but also through indicators and assessments that take into account sustainable development (World Bank, 2020); it safeguards biodiversity and ecosystems; and it should be promoted (external effects).

It is crucial to reiterate that the notion of sustainable development is not replaced by the ideas of the green economy. Kasztelan added additional key elements that, in their opinion, should be ingrained in the new model to the aforementioned characteristics of the green economy that were highlighted by international organizations: Maximum structural and territorial coverage, social orientation, raising the value of natural resources, resistance to knowledge, lowering development risks, especially environmental ones, innovation, energy efficiency/low carbon, and a new method of assessing progress are all important factors (Kasztelan, 2017).

2. METHODS, FRAMEWORKS AND ESSENCES OF THE GREEN ECONOMY

2.1. *Conceptual methods for establishing the “green economy’s” meaning and essence*

The phrase “green economy” originally emerged in the scientific literature in the Pearce’s, Markandya’s, and Barbier’s “Plan for a green economy” (Pearce, Markandya & Barbier, 2013), which argued for the necessity of financial support for environmental policies. For proponents of this scientific field that focuses on the economics of sustainable development, this work serves as a program text. These concepts were created in 1991 and 1994, at a time when concerns about global resource depletion, climate change, ozone depletion, and vast tropical deforestation had already been expressed. However, up until the middle of the 2000s, this concept’s development received little attention. The number of definitions has significantly increased since 2008 as a result of the UN Green Economy Initiative (GEI), one of the nine cooperative crisis efforts. A few additional phrases, including “green growth” or “greening the economy”, have also gained popularity. In the context of an expanding number of economic sectors, such as the management of energy or water resources, transportation mobility or consumption, the polluter pays principle, or life cycle assessments, these economic categories are employed as interconnected and interchangeable terms. According to UNEP, the green economy is one that promotes long-term prosperity, lessens inequality, and enables future generations to avoid substantial environmental dangers and environmental depletion. This definition is the most reliable and frequently used one. The

connection between “green economy” and “sustainable development” is highlighted in this document. Sustainable development is not supplanted by the idea of a green economy. Today, however, there is a growing understanding that creating the “right” economy is the single most important factor in attaining sustainable development. The brown economy model has produced new wealth for decades, yet throughout that time, societal issues including resource depletion and social marginalization have remained unresolved. Because of this, we have not yet met the Millennium Development Goals. Sustainable development is still a top priority, but realizing it calls for a green economy (Morrow, 2014). The “green” economy was one of the main subjects of the Rio 2012 Conference when it came to reducing poverty and promoting sustainable development. The idea of “green growth” places a focus on the significance of fusing environmental and economic policy in a manner that identifies new potential sources of economic growth without placing an “unsustainable” load on the quantity and quality of natural resources (Sukhdev et al., 2010). Economic tools (taxes, subsidies, and carbon trading schemes), state regulation tools (establishing standards), and non-economic tools are all necessary for the transition to a green economy (voluntary initiatives and information provision). One may also think of a green economy as a set of guiding principles, objectives, and benchmarks. The idea of sustainable and efficient resource usage, consumption, and production has the effect of making resource efficiency important. In this regard, the European Environment Agency (EEA) report “The European Environment: State and Prospects” from 2010 makes the argument that the development of methods that reduce the use of resources in production and consumption as well as reduce the environmental impact are two tasks that are equally important for the transition to a green economy (resource efficiency) (Jenkins, 2022). Resource efficiency specifically refers to achieving the needed increase in production while using less natural, financial, and human resources. This is a prerequisite for the shift to a “green” economy, but it is not always adequate because even with greater resource efficiency, consumers’ absolute consumption levels may rise (Sukhdev et al., 2010). Estimating the amount of resource efficiency is simpler than doing so for the green economy (Morrow, 2014). Indicators that show the link between resource consumption and production, such as gross domestic product (GDP) per unit of resource consumed, can be employed in particular at the macroeconomic level. There are still various interpretations, though. It should be emphasized that the term “resource

efficiency” does not currently have a clear definition or accepted understanding (Jenkins, 2022). In general, the green economy is frequently viewed as a brand-new economic paradigm that aids in resolving urgent global difficulties that have evolved into a new crisis. Many industrialized nations have already embraced the idea of a green economy in one form or another, and efforts to realize it are considered as a way to fight the current global recession (de Serres et al., 2010; Morrow, 2014; Barbier, 2015; Jenkins, 2022).

2.2. The definition of the term “green economy” by the authors

The authors' approach to the formulation of the term “green economy” is given, and it entails thinking about this concept from the standpoint of sustainable development, green transformation, and own research. This approach is based on the theoretical analysis of scientific publications, information materials, and reports of international organizations, as well as a result of own research. In other words, the green economy refers to the modern concept of balanced sustainable development of logistics systems, a tool for the green transformation of logistics systems, and a model of economic development based on the implementation of “green” solutions in various economic activity areas to preserve the environment, increase environmental security, and a resource-efficient business model, the implementation of which is based on the adoption of the United Nations' Sustainable Development Goals.

2.3. Finding the green economy's advantages and disadvantages through a SWOT analysis

According to a critical analysis based on Jenkins' research (Jenkins, 2022), the idea of a green economy offers both benefits and drawbacks. The concept's potential benefits in terms of raising incomes, adding jobs, safeguarding the environment, and maintaining a high degree of sustainable development of the global economy can thus be seen as one of its main strengths. Secondly, based on the estimations of experts that are now available, the annual investment needed for the worldwide transition to a green economy is equivalent to roughly 2% of global GDP (Jenkins, 2022). The volume here exceeds the value here. These funding for the growth of the green economy can therefore be distributed at the national and international levels for an effective public policy. It is significant to note that only the elimination of subsidies in sectors (energy, water supply, fisheries, and agriculture) that support the life of natural capital can release 1% to 2% of the global GDP annually. At the same time, 2% of global

GDP invested in a “green” growth scenario has the potential to offset short-term losses in economic output with long-term gains (Sukhdev, Stone & Nuttall, 2010). Even though adding more environmental regulations would initially cost businesses more money, doing so can give them a long-term competitive advantage. Third, the green industry has already had consistent positive growth in Europe, which has been accompanied by the appearance of favourable externalities on the social, economic, and environmental fronts. For instance, in all three regions in Austria, Switzerland, the Czech Republic, Germany, etc., investments in the transportation industry have generated high returns (Pansera et al., 2021). The green economy has a number of drawbacks despite its many positives (Latinović, 2019; Latinović et al., 2020). The concept's primary “failures” are around its first premise, which treats the entire planet as one region but has only limited practical relevance. Many recommendations and findings regarding the application of the green economy's guiding principles are universal in scope and do not take into consideration the diversity of nations, their interests, aims, or ambitions (Latinović & Tomašević, 2022). Second, although some estimates point to the potential for worldwide investment in the transition of the global economy to one that is “green”, some academics doubt the frequently cited estimate of 2% of global GDP, which is already quite a large percentage. Benefits may be overstated and costs may be understated (Büchs & Koch, 2019). Generally speaking, long-term investments in the green economy can bring about sizable financial rewards (Steviš & Felli, 2015), while it is possible that growth may be slowed in some regions of the world due to inadequate development of pertinent processes (Mealy & Teytelboym, 2022). Because there is always a trade-off between environmental and economic benefits, it is still challenging to get a favorable economic outcome from compliance with environmental regulations (Latinović, 2019). This involves a commercial issue like the discrepancy between consumer demands and their actual behavior. Yes, consumers express interest in and a readiness to purchase environmentally friendly items, but in reality, this is not always the case, which places businesses in a challenging situation. Additionally, some researchers (Cavicchia, 2017) disagree with the suggested change agents. Particularly criticized is the subsidization of electricity production in renewable energy firms; some findings suggest that this sort of support redistributes money (a transfer to the consumer) and worsens the financial standing of the majority of firms in the sector.

CONCLUSION

Commercial models need to be restructured as a result of global climate change, the limited or scarce availability of many natural resources for economic operations, and their long-term illogical use. In other words, the shift to a fundamentally different model needs to be accelerated given the current state of the economy. By way of political decisions, strategies, and practical activities, the green economy model of economic development is now acknowledged and promoted in many nations throughout the world, in Serbia as well. Through the development of new jobs, cost savings, reduced environmental harm, resource efficiency, and reduced environmental pollution, the switch to such a model will have benefits for the environment as well as for the economy and society. This served as the idea of sustainable development's foundation. As a result, it is currently important to propose fundamentally new methods to the construction and development of ecosystems as well as search for cutting-edge instruments. At this time, one of the most important vehicles for creating and putting into practice corporate plans is the green economy. It is advised to produce a clear definition of a strategic approach to promoting the idea of a "green" economy together with a similarly clear and widely agreed interpretation of the idea of a "green" economy in order to effectively develop this notion. It is highly recommended that institutional, legal, financial, organizational, and economic issues be clarified. Additionally, evaluations should be conducted based on priorities that are clearly defined, and a coordinated system for the exchange of environmental information should be established.

REFERENCES

- [1] Barbier, E. B. (2015). Are there Limits to Green Growth? *World Economics*, 16(3), 163-192.
- [2] Bobylev, S. N. (2017). Sustainable development: Paradigm for the future. *World Economy and International Relations*, 61(3), 107-113. DOI:10.20542/0131-2227-2017-61-3-107-113
- [3] Bowen, A., & Fankhauser, S. (2011). The green growth narrative: Paradigm shift or just spin? *Global Environmental Change*, 21(4), 1157-1159. DOI:10.1016/j.gloenvcha.2011.07.007
- [4] Büchs, M., & Koch, M. (2019). Challenges for the degrowth transition: The debate about wellbeing. *Futures*, 105, 155-165. DOI:10.1016/j.futures.2018.09.002
- [5] Cavicchia, J. (2017). Rethinking government subsidies for renewable electricity generation resources. *Electricity Journal*, 30(6), 1-7. DOI:10.1016/j.tej.2017.06.003
- [6] Cheba, K., Bąk, I., Szopik-Depczyńska, K., & Ioppolo, G. (2022). Directions of green transformation of the European Union countries. *Ecological Indicators*, 136, 108601. DOI:10.1016/j.ecolind.2022.108601
- [7] Chițimiea, A., Minciu, M., Manta, A. M., Ciocoiu, C. N., & Veith, C. (2021). The drivers of green investment: A bibliometric and systematic review. *Sustainability (Switzerland)*, 13(6), 3507. DOI:10.3390/su13063507
- [8] de Serres, A., Murin, F., & Nicoletti, G. (2010). A Framework for Assessing Green Growth Policies. *OECD Economics Department Working Papers*, 774.
- [9] European Environmental Agency. (2020). *Green Economy*. Available at: <https://www.eea.europa.eu/soer/2015/europe/green-economy>. Accessed: 15.11.2021.
- [10] García-Barragán, J. F., Eyckmans, J., & Rousseau, S. (2019). Defining and Measuring the Circular Economy: A Mathematical Approach. *Ecological Economics*, 157, 369-372. DOI:10.1016/j.ecolecon.2018.12.003
- [11] Grdic, Z. S., Nizic, M. K., & Rudan, E. (2020). Circular economy concept in the context of economic development in EU countries. *Sustainability (Switzerland)*, 12(7), 3060. DOI:10.3390/su12073060
- [12] Jefimovaitė, L., & Vienažindienė, M. (2021). Modeling the implementation of green logistics principles: theoretical aspect. *Public Security and Public Order*, 26, 93-107. DOI:10.13165/PSPO-21-26-15
- [13] Jenkins, K. E. H. (2022). Sustainable development and energy justice: two agendas combined. Chapter 72 in: R.J. Heffron, G.F.M. Little (eds.), *Delivering Energy Law and Policy in the EU and the US*, DOI:10.1515/9780748696802-076.
- [14] Kasztelan, A. (2017). Green growth, green economy and sustainable development: Terminological and relational discourse. *Prague Economic Papers*, 26(4), 487-499. DOI:10.18267/j.pep.626
- [15] Latinović, L. (2019). Production and mandatory use of biodiesel in Serbia from the aspect of economic impact on the population. *Serbian Journal of Engineering Management*, 4(2), 29-38. DOI:10.5937/SJEM1902029L
- [16] Latinović, L., & Tomašević, V. (2022, February). Rushing Towards Renewables in Serbia - Energy and Environmental Security, and Economic Implications. In: Ušiak, J., & Kollár, D. (eds.). *Security Forum 2022*, 15th Annual International Scientific Conference, February 9th, 2022 at Matej Bel University in Banská Bystrica, Slovakia

- [17] Latinović, L., Stojić, N., & Latinović, J. (2020). Important factors in the revival of the biodiesel industry in Serbia - progress or pitfall?. *Serbian Journal of Engineering Management*, 5(2), 1-19. DOI:10.5937/SJEM2002001L
- [18] Lea, D. A. M., Löffler, E., Douglas, I. (1989). Review symposium: Our common future: The world commission on environment and development. *Australian Geographer*, 20(2), 195-201. DOI:10.1080/00049188908702992
- [19] Lew, A. F. R., Chew, B. C., & Hamid, S. R. (2018). Green logistics implementation factors: A study on a global logistics provider. *Journal of Advanced Manufacturing Technology*, 12, No 1(1), 115-128. Retrieved from <https://jamt.utem.edu.my/jamt/article/view/3929>
- [20] Löschel, A. (2020). The European Green Deal and the German energy transformation combined! *Wirtschaftsdienst*, 100(2), 78-79. DOI:10.1007/s10273-020-2566-x
- [21] Mealy, P., & Teytelboym, A. (2022). Economic complexity and the green economy. *Research Policy*, 51(8), 103948. DOI:10.1016/j.respol.2020.103948
- [22] Morrow, K. (2014). Ecosystem services and capitalism: a valuation or de-valuation of "nature"? *Journal of Human Rights and the Environment*, 5(2), 107-111.
- [23] Pansera, M., Genovese, A., & Ripa, M. (2021). Politicising Circular Economy: what can we learn from Responsible Innovation? *Journal of Responsible Innovation*, 8(3), 471-477. DOI:10.1080/23299460.2021.1923315
- [24] Pearce, D., Markandya, A., & Barbier, E. (2013). *Blueprint 1: For a green economy*. Routledge, London. DOI:10.4324/9781315070223
- [25] Seroka-Stolka, O., & Ociepa-Kubicka, A. (2019). Green logistics and circular economy. *Transportation Research Procedia*, 39, 471-479. DOI:10.1016/j.trpro.2019.06.049
- [26] Stevis, D., & Felli, R. (2015). Global labour unions and just transition to a green economy. *International Environmental Agreements: Politics, Law and Economics*, 15(1), 29-43. DOI:10.1007/s10784-014-9266-1
- [27] Sukhdev, P., Stone, S., & Nuttall, N. (2010). *Green economy, developing countries success stories*, UNEP, Nairobi. Retrieved from https://www.mase.gov.it/sites/default/files/archivio/allegati/rio_20/unep_developing_countries_success_stories_eng.pdf
- [28] Winans, K., Kendall, A., & Deng, H. (2017). The history and current applications of the circular economy concept. *Renewable and Sustainable Energy Reviews*, 68(1), 825-833. Doi:10.1016/j.rser.2016.09.123
- [29] World Bank. (2020). *World development indicators*. Retrieved from <https://databank.worldbank.org/source/world-development-indicators>
- [30] Yingfei, Y., Mengze, Z., Zeyu, L., Ki-Hyung, B., Avotra, A.A.R.N., & Nawaz, A. (2022). Green logistics performance and infrastructure on service trade and environment - Measuring firm's performance and service quality. *Journal of King Saud University - Science*, 34(1), 101683. DOI:10.1016/j.jksus.2021.101683