**Introduction**

**Green Economy and Sustainable Development**  
*As the Basis for High Performance of Emerging Market Economies and the Legacy of the Coming Generations*

Sustainable development is a strategic priority of humanity, the value of which resides in the combination of development as an embodiment of progress – the movement forward to a better future for everyone – and sustainability – the embodiment of stability and harmony between society, economy, and environment. The United Nations (UN) Sustainable Development Goals (SDGs) unified the whole world in the implementation of the global initiative of provision of the well-being of the world’s modern population and preservation of heritage for future generations.

Seventeen SDGs give us pause for thought about what we are doing wrong and to what the current economic practices will lead, as well as what we should strive towards to make the world better. The SDGs reflect the true interests of modern times in such a precise way that they have received full support from international organizations, governments, local communities, civil societies, businesses, and all who have not remained indifferent and changed their lives in the interests of peace and prosperity.

The green economy is one of the main mechanisms of the practical implementation of the SDGs, the large potential of which is denoted by the very name of this mechanism, which combines green principles (interests of environment protection) and economic practices. The significance of the green economy is explained by the fact that it allows attaining several SDGs and generates a synergetic effect in the form of support (positive externalities) for the implementation of those SDGs that are not connected to environment protection.

Thus the green economy envisages a transition to affordable and clean energy (SDG7), the creation of sustainable cities and communities (SDG11), and the development and establishment of responsible production and consumption (SDG12). The green economy stimulates the fight against climate change (SDG13) and for the preservation of life below water (SDG14) and on land (SDG15). All this ensures a more favourable environment, with more accessible clean water and sanitation (SDG6), active development of agriculture and liquidation of hunger (SDG2) and poverty (SDG1), improvement of health and well-being (SDG3), and wider possibilities for the development of society and economy, all of which provides a synergetic effect.

This is what differentiates the green economy from other existing mechanisms of implementing the SDGs, most of which generate a positive effect for only one of these goals without influencing the others. For example, the
mechanism of social inclusion allows reducing or even fully overcoming gender, cultural (ethnic), and other inequalities but has a small impact on ecology. That is why it is important to develop the green economy: because of its top-priority role in the systemic implementation of the SDGs.

Sustainable development is a symbol of hope for a better world for modern and future generations, the path to which lies through the creation of the green economy. This hope must not die. However, it is seriously threatened by the COVID-19 pandemic, which started in 2020 and continues currently. This threat is unique by its nature; it is new and thus especially dangerous. It should be noted that crises in a market economy are a normal (inevitable and frequent) phenomenon. They are predictable to a certain extent and understandable; they are always followed by a rise which takes economic systems to further progress.

In the late twentieth and early twenty-first centuries, all crises (including political crises) were of a socio-economic nature and opened the doors to new opportunities for growth and development. For example, the dissolution of the Soviet Union in the 1990s was, first of all, a socio-economic transformation, a change of the political system, and a transformation of the cost-creation chains. The Soviet Union was replaced by the Commonwealth of Independent States (CIS) and the Eurasian Economic Union (EAEU).

Similarly, the 2008 financial crisis was caused by the overheating of financial markets. It led to the replacement of financial innovations by high technologies; post-industrial economies that specialized in the service sphere gave way to neo-industrial economies (Industry 4.0) with developed hi-tech industry and dissemination of digital technologies in all economic spheres.

The following (starting in 2014) crisis of the change of the global order (a transition from a unipolar world with the domination of developed countries, to a multipolar world against a background of the intensive growth of emerging market economies) was accompanied by the implementation of international economic sanctions. Against the background of these crises, the COVID-19 pandemic is a stand-alone phenomenon that emerged and developed under the influence of a third (natural, independent from human) power.

Amid the healthcare crisis there are no winners. All countries of the world are losers since the whole of humankind is under mortal threat. From the position of philosophy, the pandemic could be treated as an uprising of nature against the irresponsible use of nature in recent decades. The ecological costs of economic growth have been constantly on the rise while its rate has been increasing as well. An ecological crisis has been brewing for a long time and was openly discussed, but people refused to believe it was imminent. This crisis manifested in a very unexpected way; instead of the most predictable natural disaster, there...
appeared a new and dangerous infectious disease, resistant to existing medical treatments.

Natural disasters are frequent, such as large forest fires, flooding of cities, anomalous heat and cold, and melting of ice. One of the most probable explanations of the emergence of COVID-19 says that this is a new zoonotic disease which appeared due to the disharmony of society and nature – a critical reduction of biodiversity, ousting of animals from their usual habitat, and transmitting their infections to humans.

The main question that bothers humanity right now is, what damage has the COVID-19 pandemic and crisis caused to sustainable development and what are the prospects of further implementation of the SDGs? The UN justly called the modern period of sustainable development a ‘Decade of Action’. It is necessary to act to keep up with the schedule and fully implement all SDGs by 2030. However, a serious obstacle in this path is global inequality (of countries).

Emerging market economies, also called developing countries, face the ecological costs of global economic growth to the largest extent. Having no access to leading technologies, many emerging market economies are forced to specialize in the extraction and export of natural and energy resources. Even support from international organizations does not allow taking developing countries to the same level of social, economic, and technological progress as developed countries; it only insignificantly decreases the gap between these categories of countries.

Sustainable Development Goals are a field in which there is no competition for global leadership among countries. In this field, all countries have to cooperate as partners, jointly implementing the SDGs, especially the ones connected to environmental protection. Ecology is common to the entire planet. That is why, for example, large carbon emissions and the emergence of ozone holes in the territory of developing countries will cause consequences around the world, impacting developed countries as well.

Proof of this is the fact that developed countries with low ecological costs of economic growth and a generally favourable environment faced significant manifestations of climate change in 2020–1. For example, the USA was ranked twenty-fifth in the world by the pollution index in 2021 (39.26 points) and forty-seventh in the world by the climate index (77.49 points). Japan was ranked twenty-fourth in the world by the pollution index in 2021 (39.10 points) and thirty-first in the world by the climate index (85.27 points) (Numbeo, 2021).

Levels of healthcare are much higher in developed countries. Also, developed countries conduct mass vaccination of their populations. Unlike developed countries, developing countries face a deficit of vaccines and large risks of insanitary conditions, causing them to suffer more from the COVID-19 pandemic, and they are slow in dealing with the viral threat. A notable example of
this is the increased outbreak of cases in India in the first half of 2021, which led to a high death rate.

All of this highlights the importance of a thorough scientific study of the experience of sustainable development based on the green economy of emerging market economies amid the COVID-19 pandemic and crisis. The purpose of this Element is systemic research of this experience and determination of tendencies, barriers, and prospects, as well as the formation of the scientific and methodological provision and suggestion of the complex applied recommendations for sustainable development based on the green economy of emerging market economies amid the COVID-19 pandemic and crisis.

This Element uses a ‘narrow’ interpretation of sustainable development – in strict relation to the green economy – and also discusses the relevant SDGs (1–3, 6–7, 11–15). The originality of this Element lies in taking into account the pandemic context and the latest experience in the development of a ‘green’ economy and the implementation of related SDGs in the context of the COVID-19 crisis. The uniqueness of the Element is that it examines a large sample of developing (including lagging) countries. For this, firstly, sources of statistics have been selected which contain data on a large list of developing countries on the topic of green economy and sustainable development. Secondly, the study is structured in such a way as to use these statistics to form an evidence base.

This Element’s audience primarily includes scholars who study the issues of sustainable development, the green economy, and the specifics of emerging market economies. In the Element, they will find answers to the questions regarding the impact of the COVID-19 pandemic and crisis on sustainable development of emerging market economies, as well as leading scientific and methodological developments in the sphere of the COVID-19 crisis management in these countries based on green economy management.

This Element might also be interesting and useful for readers outside of the academic community, mainly state regulators in emerging market economies. For them, the Element offers applied solutions and scientifically substantiated recommendations (ready to be implemented) for the most effective anti-crisis management of sustainable development and accelerated implementation of the SDGs during the ‘Decade of Action’ based on green economy development.

This Element contains four sections which consecutively demonstrate that the green economy and sustainable development are the basis of high indicators of emerging market economies and the heritage of future generations, demonstrating the challenges they face during the COVID-19 pandemic and crisis. It also explains how to provide an effective reaction to these challenges to successfully implement the SDGs in the period until 2030. The sections contain
case studies and the critical analysis of the empirical experience of different emerging market economies.

In Section 1, the COVID-19 crisis is studied in detail and is defined as an obstacle in the path of the formation of the green economy and sustainable development in emerging market economies. It studies the impact of the COVID-19 crisis on the green economy in emerging market economies, considers the case experience (successful examples) of implementing green initiatives in the Russian economy in 2020 amid the COVID-19 crisis, performs factor analysis of the impact of economic levers on implementing the green SDGs in emerging market economies, and develops practical implications to realize the potential of the green economy in emerging market economies in the period until 2025.

Section 2 details the specifics of the impact of the COVID-19 crisis on sustainable development and the green economy in emerging market economies. It contains the modelling of the impact of the COVID-19 crisis on sustainable development and the green economy in emerging market economies in 2020–1. It also evaluates the consequences of implementing the measures of the fight against the pandemic and crisis in emerging market economies in 2020 for the green economy and sustainable development and conducts a case study of the impact of the COVID-19 crisis on sustainable development and the green economy in emerging market economies by the example of Russia in 2020–1.

Section 3 is devoted to the determination of the potential harm of the COVID-19 crisis to sustainable development and the green economy, as well as prospects of mitigating it – which is a new challenge for state management. The section presents the modelling of sustainable development and the green economy in 2020 – the harm of the crisis versus the harm of the anti-crisis measures. It develops economic policy implications to mitigate the harm of the COVID-19 crisis to sustainable development and the green economy based on a flexible combination of standard and alternative measures. It also performs a case study of using the alternative measures of the COVID-19 crisis management on the example of Russia in 2020–1.

In Section 4 (last by order, not importance), scenarios of sustainable development of emerging market economies amid the COVID-19 crisis and the prospects of anti-crisis management of the green economy are considered. It compares the impact of the COVID-19 pandemic on economic and green growth in emerging market economies in 2020, performs a scenario analysis of sustainable development of emerging market economies amid the COVID-19 crisis, and determines the prospects and develops recommendations in the sphere of anti-crisis management of the green economy for the COVID-19 crisis management in emerging market economies.
The Conclusion of the Element sums up the conducted scientific and practical research and presents a view of the future of emerging market economies in sustainable development based on the green economy amid the COVID-19 crisis.

1 The COVID-19 Crisis As a Barrier to the Formation of the Green Economy and Sustainable Development in Emerging Market Economies

1.1 Introduction

Formation of the green economy is one of the main directions of sustainable development of modern economic systems, together with the reduction of inequalities (SDG5 and SDG10), growth of quality of life (SDG1, SDG2, SDG3, and SDG4), economic progress (SDG8 and SDG9), and development of institutions (SDG16 and SDG17). A serious barrier on the path of the practical implementation of this direction, which is connected to the transition to the green economy, is the current narrow scientific view of this direction, which is limited by its target results that are adopted in SDG6, SDG7, SDG11, SDG12, SDG13, SDG14, and SDG15 (green SDGs).

A unilateral view of the green vector of sustainable development is presented in the works of Asongu and Odhiambo (2021), Dawid et al. (2021), Felicio et al. (2021), Liu and Dong (2021), Ullah et al. (2021), Wang et al. (2021), and Ying et al. (2021). In these publications, the focus – when defining the notion of the green economy – is on a favourable environment and the low ecological costs of economic growth. A drawback of the existing unilateral view of the green economy is the uncertainty as to how environmental protection should be ensured, the obscurity of most of the prospective green economic initiatives, and, as a result, the inaccessibility of the levers of managing the process of establishment and development of the green economy (Bina, 2013).

The problem is as follows: this drawback is one of the most important reasons for the slow rate of green economy formation, especially in emerging market economies, where the social orientation and readiness for the transition to the green economy are insufficiently high (unlike advanced market economies) for this transition to take place naturally; thus there is an especial need for state regulation (unavailable or limited due to insufficient scientific support).

This problem is especially urgent because emerging market economies risk not only failing in the formation of the green economy in their territory but also threatening the global perspective of the achievement of the green SDGs by 2030, undermining the results of advanced market economies (Goyal & Sergi, 2015; Popkova & Sergi, 2020a). That’s why there’s a need for well-balanced...
results and substantial progress in the formation of the green economy in developing countries (Inshakov et al., 2019; Loiseau et al., 2016; Ponte, 2008; Popkova et al., 2019).

To overcome the described drawback, a systemic view of the green economy is offered; it covers ecological results and economic sources of achieving these results. The author’s definition of the green economy is offered: a special type of economic system which features the active use of economic levers – green initiatives in the economy – to implement the green SDGs.

The value of the new definition is as follows. It significantly changes the perception of the green economy – for the first time, the environment ceases to be a resource for the economy – and of the aggravation of the environment’s state – a consequence of economic development (ecological costs of economic growth). Instead of this, the economy becomes a resource (to be precise, a tool) of environment protection which in the most precise and correct way reflects the approach that envisages the implementation of the green SDGs. The discussion regarding the minimization of the economy’s negative influence on the environment is a dead end for the implementation of the green SDGs; to find a way out of this dead end, it is necessary to search for the economy’s potential to support, protect, and improve the environment’s state. This is a completely new field for scientific research that requires elaboration.

Based on the domination of this unilateral scientific view of the green economy, the following hypothesis (H₀) is tested here: economic efficiency of the green SDGs was high even before the COVID-19 crisis (in 2019), but it grew further under the influence of the crisis (in 2020). This means that the economy’s contribution to the improvement of the environment’s state is very small – that is, the potential of the green economy’s development has not been fully fulfilled. More active use of economic levers (fulfilment of the potential of the green economy’s development) will allow for a substantial improvement of the environment’s state by 2025 (the end of the second five-year period of the implementation of the SDGs).

This section intends to demonstrate that the high economic efficiency of the green SDGs is not a goal but something to avoid (not through the reduction of the results of the green SDGs but through the increase of the economy’s contribution to their implementation). Green initiatives in the economy are not something to save economically (these are not expenditures to be reduced) but something to increase. The environment cannot protect itself, though, in reality, small-scale and underdeveloped green initiatives in the economy are based on such expectations. The economy should contribute to the protection of the environment, and this should become its priority.
Economics of Emerging Markets

The section studies the experience of the formation of the green economy and sustainable development in emerging market economies under the influence of the COVID-19 crisis, substantiating the fact that the green economy’s potential in stimulating the implementation of the green SDGs has not been yet fulfilled, and developing recommendations for the fullest fulfilment of this potential of the green economy in emerging market economies in the period until 2025.

The uniqueness of this section consists in the complex (by the example of a large and representative sample), not fragmentary (by the example of one or several countries) study of the experience of formation of the green economy and sustainable development in emerging market economies, and in consideration of an especial context that formed in 2020 due to the COVID-19 crisis. The novelty and originality of this research are due to consideration not only of ecological results but also of their economic sources, which allows determining the following:

• influence of the COVID-19 crisis on the ecological results and the economic sources of their achievement, allowing for a comprehensive description of the green economy’s development
• dependence of the ecological results on the economic sources
• economic efficiency of the green SDGs before and after the COVID-19 crisis, as well as the perspective of increasing it based on the utmost fulfilment of the potential of the green economy’s development.

The practical implications of this section are due to its reflection of the case experience (successful examples) of implementing green initiatives in the Russian economy in 2020 amid the COVID-19 crisis. The set goal underscores the logic and structure of this research. This Introduction is followed by a literature review and a description of the methodology. The results include the following:

• study of the influence of the COVID-19 crisis on the green economy in emerging market economies
• consideration of the case experience (successful examples) of implementing green initiatives in the Russian economy in 2020 amid the COVID-19 crisis
• factor analysis of the influence of economic levers on the implementation of the green SDGs in emerging market economies
• development of practical implications to fulfil the potential of the green economy in emerging market economies in the period until 2025.

The Conclusion sums up the research.
1.2 Literature Review

Certain aspects of the influence of the COVID-19 crisis on the formation of the green economy and sustainable development are studied in the works of Adnan and Nordin (2021), Ali Shah et al. (2021), Bastida (2020), Brady (2019), Iyengar et al. (2021), Kaklauskas et al. (2021), Lahcen et al. (2020), Liu et al. (2021), Mayen Huerta and Cafagna (2021), Naeem et al. (2021a), Naeem et al. (2021b), Pan et al. (2021), and Spano et al. (2021).

Arif et al. (2021) study COVID-19 and determine the time and frequency connectedness between green and conventional financial markets. Mohideen et al. (2021) see the necessity of more active promotion of green energy solutions due to the COVID-19 pandemic. Fasan et al. (2021) conduct an empirical analysis and prove that a decrease in supply chain management of green materials became a consequence of COVID-19.

Berdejo-Espinola et al. (2021) study the use of urban green space during a time of stress and conduct a case study during the COVID-19 pandemic in Brisbane, Australia. Taghizadeh-Hesary et al. (2021) analyse the characteristics of green bond markets to facilitate green finance in the post–COVID-19 world. Ho et al. (2021) note the green marketing orientations towards sustainability in the hospitality industry during the COVID-19 pandemic.


The experience of the formation of the green economy and sustainable development in emerging market economies is given in the following works: Abid et al. (2021), Belmonte-Ureña et al. (2021), Bhopal et al. (2021), Dmuchowski et al. (2021), Howson (2021), and Mell and Whitten (2021).

Ali et al. (2021) prove that green economy implementation in Ghana is a road map for a sustainable development drive. Ullah et al. (2021) demonstrate a connection between information technology (IT) capability and green intellectual capital on sustainable businesses based on evidence from emerging economies. Felício et al. (2021) note the green shipping effect on sustainable economy and environmental performance.

Chairani (2021) thinks that disclosure of enterprise risk management in the countries of the Association of Southeast Asian Nations (ASEAN) 5 contributes
to the sustainable development of the green economy. Odugbesan et al. (2021) point out that financial regulations matter for a sustainable green economy (based on the analysis of empirical evidence from Turkey). Mikhno et al. (2021) prove the important role of the green economy in sustainable development and resource efficiency.

Prakash and Sethi (2021) show that green bonds stimulate the sustainable transition in Asian economies (by the example of India). Liu et al. (2020) demonstrate that ‘green food’ certification could achieve both sustainable practices and economic benefits in a transitional economy (through the example of kiwi fruit growers in Henan Province, China).

Zhao et al. (2020) point out the impact of pollution regulation and technological investment on sustainable development of green economy in eastern China (through an empirical analysis that uses a panel data approach). Sharma (2020) proves that green management and a circular economy are very important for sustainable development. Kalikov et al. (2020) think that a green economy is a paradigm of sustainable development in the Republic of Kazakhstan.

The literature review allows stating that the level of the topic’s elaboration is high; however, two research gaps exist. The first research gap is the fragmentary character of the study of the influence of the COVID-19 crisis on the formation of the green economy and sustainable development, which does not allow for the full picture of this influence. The second research gap is consideration of the experience of formation of the green economy and sustainable development only through the example of certain emerging market economies. This hinders the formation of the systemic understanding of the essence and specifics of the formation of the green economy and sustainable development in emerging market economies.

A serious drawback of the existing literature is that the connection between economy and environment is shown and studied only from one side. The environment is set at a lower level of the hierarchy, while the economy is set at a higher level. This completely contradicts the concept of sustainable development, which proclaims the equality of the economic, social, and ecological spheres of the economy.

The concept of sustainable development also envisages the bilateral relations of each sphere – at the intersection of the economic and ecological spheres, these bilateral relations mean, firstly, that the environment must help the development of the economy (immediate connection) and, secondly, that the economy must help the improvement of the environment’s state (feedback). The immediate connection has been studied in detail and emphasized in existing work while feedback has been studied very poorly. This hinders building the green economy according to the concept of sustainable development.