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THE CONCEPT OF GREEN, BLUE AND CIRCULAR ECONOMY

Abstract: The term „green economy” still does not have one universal definition accepted by scientists, practitioners, institutions, politicians, etc. Although the concept is widely discussed by members of international organizations, such as the UN or the EU, G20, governments, NGOs, local authorities, there are still a lot of misunderstandings around it, all the more so that new terms are created to name innovative ideas that have already been implemented or are in the phase of projecting, such as blue economy, sharing economy or circular economy. Economists are generally opposed to adding adjectives to the term „economy”, stating that there is only economy, however the adjectives inform about what is the idea behind these terms. As the problem seems worth investigating, this was the reason for undertaking research in this field. One of the purposes of the article is to find the similarities and/or differences between these terms. The other purpose is tightly connected with the title of the paper and has to demonstrate that „greening” economic activities can foster innovativeness and stimulate economic development measured not only by using Gross Domestic Product as an indicator but also other measures like Human Development Index or well-being measures. The methods were based on study of literature and reports of international organizations and institutions. The findings showed that there are a lot of similarities between various terms naming environment-friendly sustainable development. Green economy should not be perceived as a cost or burden but more like a trigger factor for initiative and innovativeness. The purpose of the article is to present the concepts of green, blue and circular economy as a new paradigm of economy, aiming to utilize limited natural resources in the most „economic” way. The overarching goal of this type of economic activity is to ensure socio-economic development, and not only economic growth, which was the basic measure of the achieved economic level of a given country for many years. The method utilized in the article was based on comparative analysis of various sources dedicated to this topic, such as relevant literature, reports and elaborations of international organizations and institutions. The presentation of the results of conducting research was based on the descriptive method.

Conclusions resulting from the undertaken research lead to the statement that if we assume that the essence of economics is managing limited resources and allocating them to meet competitive goals, the green and blue economies are simply economics with particular regard to natural resources. On the other hand, the circular economy can be treated as an instrument for their protection and reuse of products. The implementation of the concepts of green, blue and circular economy, apart from a better utilization of scarce resources, can stimulate and foster innovativeness and create better conditions of life for human beings.

Key words: economic growth, green, blue and circular economy

INTRODUCTION

If you have put the windmill in your yard or some solar panels on your roof, bless your heart. But we will only green the world when we change the very nature of the electricity grid – moving it away from dirty coal or oil to clean coal and renewables. And that is a huge industrial project – much bigger than anyone has told you. Finally, similarly to the New Deal, if we undertake the green version, it has the potential to create a whole new clean power industry to spur our economy into the 21st century¹. In 1972 The Club of Rome published its very famous report titled „The Limits to Growth”². The conclusion of this report was that if nothing is done then the humanity will experience catastrophe in 100 years. The rapidly growing World’s population resulting in scarcities of many natural resources causes that the problem of their depletion becomes very dangerous for humanity. This situation creates a strong impetus for developing new concepts, ideas, solutions and also influences the ways of thinking about economy and economic processes and the methods of measuring the results of human economic activity. Traditionally used measure for economic situation was Gross Domestic Product but it appeared that in the era of extensive utilization of resources, pollution and environment degradation this indicator is not sufficient. Green economy, blue economy and circular economy are the answers for emerging threats and challenges the humanity faces. The transition to the new model or models of economy – from linear to circular becomes a must. However, it is still the problem of the rational use of resources, in particular the scarce and limited ones. Economy, whether it is named green, blue or circular, deals with resources and efficient use of them. The purpose of the article is to present various approaches to the essence of economy, economic growth and development as well as the concepts of green, blue and circular economy.

¹ T. L. Friedman, *Opinion – A Warning From the garden*, „The New York Times”, 2007, January 19.

² Meadows D. H., Meadows D. L., Randers J., Behrens III W. W., *Granice Wzrostu*, PWE, Warszawa 1973.

DEFINITIONS OF ECONOMY

Economy is the science about economic processes and economists try to detect and describe these processes. There are various resources which are subject to economic processes:

- human – people, their knowledge, practical skills, experience,
- natural resources – soil, land with its natural resources, water and air³,
- resources resulting from human activity – tools, machines, buildings, semi-finished products, means of transport, financial resources, etc⁴.

There are not enough resources to meet all human needs, except the air. Managing limited resources is becoming a challenge for the all mankind in the situation when global population is rapidly growing⁵. Another definition describes economy as a large set of inter-related production and consumption activities that play an important role in determining how scarce resources are allocated. The production and consumption of goods and services are used to meet the needs of people living and working within the economy, which is also referred to as an economic system. Economics deals in particular with those means of satisfying human needs that are obtained through the extraction, processing and relocation of natural resources. The result of such activities are products. In addition to products, there are the so-called free goods that are not the result of production and occur in nature in a form suitable for the direct meeting human needs, e.g. water. In practice, the resources of this type of goods are running out. Therefore, there is a need for their rational use and wider interest in economic science⁶.

G. S. Becker defines economy as „the study of the allocation of scarce means to satisfy competing ends. Air is not usually scarce, and ordinarily there is no economic problem in the use of air since nothing else must be forfeited”⁷.The

³ Natural resources are often named natural capital that is defined “as the world’s stocks of natural assets which include geology, soil, air, water and all living things. It is from this natural capital that humans derive a wide range of services, often called ecosystem services, which make human life possible. The most obvious ecosystem services include the food we eat, the water we drink and the plant materials we use for fuel, building materials and medicines. There are also many less visible ecosystem services such as the climate regulation and natural flood defenses provided by forests, the billions of tonnes of carbon stored by peatlands, or the pollination of crops by insects. Even less visible are cultural ecosystem services such as the inspiration we take from wildlife and the natural environment”, *What is natural capital*, <https://naturalcapitalforum.com/about/> [access 31.07.2019]

⁴ R. Milewski, E. Kwiatkowski, *Podstawy ekonomii*, eds. R. Milewski, i E. Kwiatkowski, Wydawnictwo PWN, Warszawa 2018, p. 23

⁵ According to the medium variant of prognosis of UN there will be 9,7 billion people living in our planet, *World Population Prospects 2019*, United Nations, Department of Economic and Social Affairs, Population Division (2019). Online Edition. Rev. 1.

⁶ *Podstawy ekonomii*, op. cit., p. 27.

⁷ G. S. Becker, *Economic Theory*, Transactions Publishers, London 2011, p. 1.

corresponding definition says that economy is a field of science that explores how society uses its limited resources to best meet its needs. Resources scarcity is the most significant barrier to meeting human needs and during the whole history of mankind it was the main reason of countless destructive wars, conflicts and migrations⁸.

ECONOMIC GROWTH AND DEVELOPMENT

In many non-economic publications these two terms are treated as the same and used interchangeably, however there are basic differences between them and it is important to explain and to understand them, because the term „economic development” has a lot of similarities with the concept of green economy. Economic growth can be described as an increase in the production of products (goods and services) compared from one period of time to another. It can be measured in nominal or real terms. Measure of real growth takes into account inflation. The higher level of inflation rates the lower level of real economic growth is. Traditionally, aggregate economic growth is measured in terms of gross domestic product – GDP. It is the most popular and extensively used indicator of the economic situation a certain country, continent or the whole world. However, there are some imperfections inherent in it – the GDP does not take into account the costs of environmental pollution resulting in premature deaths, diseases and deteriorating living conditions.

Economic development is concentrated on both sides of the economy of a certain country – qualitative and quantitative. It takes into account such factors as healthcare system and access to it, including medical facilities, purchasing power per capita, quality of housing, increase of employment opportunities, conservation of the environment, access to drinking water, sanitation systems, education and spread of it, literacy rate, eradication of poverty, sustainable and balanced transport network⁹, etc. Having broader point of view on the economy of a certain country, it is easier to assess its economic situation and in particular the level of well-being of citizens, however there are also other, non-material factors affecting satisfaction with life.

Being aware of imperfections of GDP as a measure of the economic situation in a particular country, Mahbub ul Haq, a Pakistani economist living and wor-

⁸ The number of international migrants reaches 272 million in 2019, it has increased of 51 million since 2010. Currently international migrants comprises 3,5 per cent of the global population, *The number of international migrants teaches 272 million in 2019, continuing an upward trend in all world regions*, September 17, 2019, <https://www.un.org/development/desa> [access 17.09.2019].

⁹ The problem of sustainable transport development is presented in the publication written by B. Pawłowska, *Zrównoważony rozwój transportu na tle współczesnych procesów społeczno-gospodarczych*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2013.

king in Great Britain, proposed a new aggregate indicator in 1990. It measures not only GDP but also comprises human aspects such as life expectancy, education and gross national product *per capita*. Later it was adopted by United Nations Development Programme to measure countries' level of development. The indicator is named Human Development Index but, although it better illustrates the level of development of a certain country, it does not measure pollution or environment degradation.

Many economists are aware of the imperfections and shortcomings of the GDP as a measure of economic growth and suggest developing a new indicator, better illustrating the real level of achieved development, in particular focused on environmental aspects of human life. In 2018 OECD published a report prepared by the High-Level Group on Measurement of Economic Performance and Social Progress led by J. E. Stiglitz, J. P. Fitoussi and M. Durand, presenting the results of the project focused on developing and improving GDP as an indicator of economic growth. It is worth quoting one of the paragraphs from this report: „We need to move „Beyond GDP” when assessing a country's health, and complement GDP with a broader dashboard of indicators that would reflect the distribution of well-being in a society and its sustainability across its social, economic and environmental dimensions. The challenge is to make the dashboard small enough to be easily comprehensible, but large enough to summarize what we care about the most¹⁰”.

DEFINITIONS OF GREEN ECONOMY

There are several definitions of green economy and some of them are worth presenting. The most widely used and popular is the definition proposed by the United Nations Environment Programme (UNEP)¹¹ where the concept of green economy is described as follows: „a green economy can be perceived as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive¹²”. There are many similarities to the concept of economic development presented above, except that the green economy definition strongly emphasizes ecological aspects. The essence of a green economy lies in growth in income and level of employment driven by both public and private investments,

¹⁰ J. E. Stiglitz, J. P. Fitoussi, M. Durand, *Beyond GDP. Measuring What Counts for Economic and Social Performance*, OECD Publishing, Paris 2018, p. 13.

¹¹ The United Nations Programme for Environment was established by United Nations Conference on the Human Environment in Stockholm in 1972.

¹² *Green Economy – Introduction. Setting the stage for a green economy transition*, <https://why-greeneconomy.org/information/unep-green-economy-report> [access 30.04.2019] see also: L. R. Kahle, E. Gurel-Atay, Eds, *Communicating Sustainability for the Green Economy*, M.E. Sharpe, New York 2014.

focused on reduction of carbon emissions and pollution of environment. They should enhance efficient usage of energy and other resources, protect biodiversity and ecosystems. It is necessary to accelerate such investments by special policy reforms, supported by instruments ranging from changes in law, through public expenditure, to tax breaks, etc. Natural capital is not boundless and must be perceived as a critical economic asset which should be protected, rebuild if necessary and possible and left for the next generations. In the Green Economy Report, published by the UNEP in 2011, it is a statement that „to be green, an economy must not only be efficient, but also fair. Fairness implies recognizing global and country level equity dimensions, particularly in assuring a just transition to an economy that is low-carbon, resource efficient, and socially inclusive¹³”. Economic growth, environmental responsibility and social development are fundamental elements included in International Chamber of Commerce definition saying that green economy is „an economy in which economic growth and environmental responsibility work together in a mutually reinforcing fashion while supporting progress on social development¹⁴”.

Green Economy Coalition’s definition describes green economy as „a resilient economy that provides a better quality of life for all within the ecological limits of the planet¹⁵”. Finally, it is worth presenting the definition of the Danish 92 Group¹⁶, because it highlights various aspects of green economy, that „it is not state but a process of transformation and a constant dynamic progression. The green economy does away with the systematic distortions and dysfunctions of the current mainstream economy and results in human well-being and equitable access to opportunity of all people, while safeguarding environmental and economic integrity in order to remain within the planet’s finite carrying capacity. The economy cannot be green without being equitable¹⁷”. First of all, it must be emphasized that the term has a dynamic character and it has to be stressed that it is consistent with the Nordic countries value system in which human coexistence with the natural environment plays a major role.

Green economy refers to sectors (e.g. energy), topics (e.g. pollution), principles (e.g. polluter pays) or policies (e.g. economic instruments). It can also desc-

¹³ UNEP Report, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, 2011, www.unep.org/greeneconomy [access 30.04.2019].

¹⁴ C. Allen, S. Clouth, *A Guidebook to the Green Economy, Issue 1: Green Economy, Green Growth, and Low-Carbon Development – history, definitions and a guide to recent publications*, UN Division for Sustainable Development, UN Department of Economic and Social Affairs, New York 2012, p. 63, http://uncsd2012.org/content/documents/528GreenEconomyGuidebook_100912_FINAL.pdf [access 1.05.2019].

¹⁵ *Ibidem*.

¹⁶ The Danish 92 Group is a coalition of 23 Danish NGO’s working on issues related to the environment and development. The group was established in 1991 with the mandate of coordinating the Danish NGOs’ preparations for the United Nation’s Conference on Environment and Development (UNCED) in Rio de Janeiro, in 1992.

¹⁷ C. Allen, S. Clouth, *op. cit.*, p. 63.

ribe an underpinning strategy, such as the mainstreaming of environmental policies or a supportive economic structure. Resource efficiency is a closely related concept, since the transition to a green economy depends on meeting the twin challenges of maintaining the structure and functions of ecosystems and finding ways to cut resource use in production and consumption activities and their environmental impacts. It is important to integrate economic and environmental policies and create opportunities for new sources of economic growth and avoid unsustainable pressure on the quality and quantity of the natural capital. It is necessary to employ a set of economic and legal tools such as a relevant tax system and regulations, subsidy and trading systems. A noteworthy case of appreciating the importance of the green economy may be the first world's magazine devoted to these issues, which is being published in South Africa, entitled „Green Economy Journal”.

BLUE ECONOMY

The definitions of blue economy are similar to green economy but they are more specific and relate to oceans, seas and coastal areas. Although the term is newer than the term „green economy”, it is sufficiently defined, which is reflected in a relatively large number of attempts at explaining the term. A brief review of selected definitions proves that the essence of them is very similar to the definitions of „green economy”. The definition proposed by the World Bank says that „sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem¹⁸”.

In the 2018 Annual Economic Report on EU Blue Economy it is described as „all economic activities related to oceans, seas and coasts. It covers a wide range of interlinked established and emerging sectors¹⁹”. It is emphasized that Blue Economy should be treated as „a vital component of Europe's coastal economies²⁰” because oceans contribute to overall prosperity and wellbeing of the European societies. Blue Economy can enhance innovativeness, create investment, and new work places, and in consequences contribute to economic and social development.

The Centre for the Blue Economy defines blue economy as follows: „it is now the widely used term around the world with three related but distinct meanings – the overall contribution to the ocean economics, the need to address the environmental and ecological sustainability of the oceans, and the ocean economy as a growth opportunity for both developed and developing countries²¹”. In yet

¹⁸ *What is the Blue economy?*, The World Bank, 6 June, 2017.

¹⁹ *The 2018 Annual Economic report on EU Blue Economy*, EU, 2018, p. i.

²⁰ *Ibidem*.

²¹ *Our History and Methodology*, Middlebury Institute of International Studies at Monterey <https://www.middlebury.edu/institute/academics/centers-initiatives/center-blue-economy/about/history> [access 2.05.2019].

another definition it is stated that „blue economy also includes economic benefits that may be not marked, such as carbon storage, coastal protection, cultural values and biodiversity²²”.

The World Wild Fund begins its report headed „Principles for a Sustainable Blue Economy” with two senses given to this term: „For some blue economy means the use of the sea and its resources for sustainable economic development. For others, it simply refers to any economic activity in the maritime sector whether sustainable or not²³”. A sustainable blue economy „must respect ecosystem integrity, and that the only secure pathway to long-term prosperity is through the development of a circular economy²⁴”.

CIRCULAR ECONOMY

Circular economy is a new economic model supporting implementation of the green and blue economy concepts. The model is based on the assumption that the value of products, materials and resources should be maintain in the economy as long as possible. The purpose is to reduce waste to a minimum. In particular raw materials need to be repeatedly recycled in more than one industry. The concept of product life cycle is not relevant any more to circular economy – products should be used many times as a result of various economic processes. The concept of linear economy is based on the following cycle: raw materials acquisition – production – use – waste utilization and due to EU recommendations should be gradually replaced by the circular economy: production – use – use of waste as raw materials in the next production cycle, and so on.

It is worth saying that the European Union’s priority is to implement the new principles of the ecological policy protecting limited resources as the answers to green and blue economy demands. The plan takes into account a very wide range of legislative proposals that aim to reduce food waste, develop quality standards for secondary raw materials. It also includes a strategy on plastics that addresses issues related to their recycling. The circular economy package contains proposals for setting new waste management goals, which should be achieved by 2030. The target is to significantly increase the level of waste recycling. According to the European Commission, some sectors face serious challenges in the context of the circular economy that result from the characteristics of their products and value chains, their environmental footprint, and often dependence on non-European

²² S. Bertazzo, *What on Earth is the „Blue economy”?* Human Nature Conservation International, <https://www.conservation.org> [access 2.05.2019].

²³ *Principles for a Sustainable Blue Economy*, http://wwf.panda.org/our_work/oceans/publications/sustainable_blue_economy_reports.cfm [access 2.05.2019].

²⁴ *Ibidem*.

materials. As a result, in the circular economy package there are five areas requiring a special approach: plastics, food waste, critical raw materials, construction and demolition waste, biomass and bioproducts.

CONCLUSIONS

Limited natural resources and inappropriate system of their utilization together with the rapid population growth make a significant threat for the future of the mankind. Awareness in this respect was an incentive to begin discussions about the need to change the economic paradigm. It is necessary to take care of the environment and to efficiently use all resources, in particular the scarce ones. The concepts of green and blue economy, circular and sharing economy have to show that at the centre of global attention are the solutions to the most serious problem that humanity is dealing with. It is necessary to rethink the existing paradigms of the economy and introduce new ones as the answer to contemporary and future challenges our planet faces.

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