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## BLUE ECONOMY: THE NEW MODEL FOR SUSTAINABLE DEVELOPMENT

*The article considers the blue economy as a contemporary business model oriented on sustainable and environmentally friendly economy. The model is based on imitating the processes of the Nature itself and its main task is to create various innovative ways to manage and use available resources and thus to deal with environmental problems and climate changes as well. The authors show how blue economy links R&D capabilities with business activities and allows them be implemented within the structure of the local economy.*

*Keywords:* blue economy; sustainable development; business model.

## Борис Дзюра, Мікулаш Чернота «БЛАКИТНА ЕКОНОМІКА»: НОВА МОДЕЛЬ СТІЙКОГО РОЗВИТКУ

*У статті розглянуто «блакитну економіку» як сучасну бізнес-модель, орієнтовану на стійкий економічний розвиток. Дана модель заснована на імітації природних процесів та її основним завданням є розробка інноваційних шляхів управління та використання ресурсів, вирішуючи таким чином екологічні проблеми та долаючи проблеми, пов'язані зі зміною клімату. Продемонстровано яким чином «блакитна економіка» об'єднує наукові дослідження та бізнес-діяльність, інтегруючи їх в структурі місцевої економіки.*

*Ключові слова:* «блакитна економіка»; стійкий розвиток; бізнес-модель.

*Табл. 1. Літ. 13.*

## Борис Дзюра, Мікулаш Чернота «ГОЛУБАЯ ЭКОНОМИКА»: НОВАЯ МОДЕЛЬ УСТОЙЧИВОГО РАЗВИТИЯ

*В статье рассмотрена «голубая экономика» как современная бизнес-модель, ориентированная на устойчивое экономическое развитие. Данная модель основана на имитации естественных процессов и её основной задачей является создание инновационных путей управления и использования ресурсов, решая таким образом экологические проблемы и борясь с изменением климата. Демонстрировано каким образом «голубая экономика» объединяет научные исследования и бизнес-деятельность, интегрируя их в структуре местной экономики.*

*Ключевые слова:* «голубая экономика»; устойчивое развитие; бизнес-модель.

**Introduction.** In 2008 the economy almost stopped to develop itself. The world financial crisis gradually grew into the global economic crisis and had an important influence on the world trade (Jancikova, 2008). The World Bank and other institutions were giving warnings about the continuation of this crisis. Media worldwide were congesting only bad forecasts of analysts. A slowdown in economic growth across the countries and the question of what could galvanize the economy had become the key issue. The time for submission and implementation of possible solutions was rather limited. At least this was the feeling of the day at that time.

At the end of the 20th century, economic theory started intensely supporting the idea of green economy – a bottom-up of economic development of intact environment society with the use of renewable technologies as a source of energy and raw

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materials. Further development of these ideas should have been the blue economy, which states that the basis for economic growth should lay in the logic of natural ecosystems, their complementarity and balance that go beyond the usual resource conservation.

In the post crisis years, the idea to switch to a new type of economy has looked very attractive. One of the possible types of such economies was presented by G. Pauli in his report to The Club of Rome in 2009. He presented the basic principles of the blue economy: any resource can be replaced by other if it is necessary for production; in Nature there is no waste; any by-product is the source for a new product. However, it is not the only one solution. The competitive view is an idea about more well-known green economy which has been "living" and developing itself over recent decades. The United Nations made green economy the a key topic for the Rio+20 World Summit in June 2012. At the summit, green economy is viewed in the context of sustainable development, as the type of economy that "should contribute to eradicating poverty, as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating new opportunities for employment and decent work for all, while maintaining the healthy functioning of the earth's ecosystems" (Resolution of the GA of the UN 66/288 "The future we want", Sustainabledevelopment.un.org, 2015).

**Conflict of definitions: different views on the same things.** Color-coding is a very simple and popular approach to highlight things in the environment field. At the same time, it can be quite confusing. One of the reasons for this is because it is applied to ecosystems, different infrastructure, types of services, economies, and other subjects. For ecosystems, "green" refers to the land or ground ecosystems and "blue" refers to the marine ecosystem as the main color of water.

Big varieties of the definitions of green economy have been developed before, during, and after the Rio+20. Every such definition explained some aspects of green economy but not the economy as a whole. Even nowadays green economy has not a common definition acceptable by all (Blueeconomycluster.eu, 2015).

An example of green economy is energy-efficient buildings that can hold warm or cold temperature longer than regular constructions. Green buildings are not a unique "green" element in the economy. Green economy also involves such sectors like all kind of renewable sources of energy, clean transportation, water management, waste management, agriculture and natural resource management. Especially the application of such approach in developing countries could be viewed as the prevention mechanism of environmental degradation (Gress, 2011).

In recent years, the Pacific Small Island Developing States (Pacific SIDS) started promoting blue economy based on their own vision of it. For Pacific SIDS and other similar countries and territories, green economy is a blue economy in fact, because the focus lays mainly on using marine resources and ecosystems. Such ideas and approaches features the oceans as the key "players" in the blue economy model because oceans cover almost 71% of the surface of our planet.

At the same time different countries have various priorities – blue, brown, gray, green etc. Such uncertainty creates misunderstandings which defines an economy as "green" or "blue". There is general acceptance that the Nature must be at the center of green economy. Consequently, if a country or an enterprise wants to create something "green" they use the systems that copy, as well as possible, natural ecosystems.

In its broadest sense, the term "blue economy" refers to a wide range of economic activities in the maritime sector. In the analysis of San Diego's Maritime Cluster, The Maritime Alliance defined "blue economy" as "the sum of all economic activity having to do with oceans, seas, harbors, ports and coastal zones" (Kildow, Colgan and Scorse, 2009). This definition drew from the work of Dr. Judith Kildow published by the National Ocean Economics Program (The National Report: State of the U.S. Ocean and Coastal Economies, 2009).

**The center of the blue economy.** As mentioned above, islands generally understand water as their center of blue economy, but this is not the only point (Zeri.org, 2015). Canada faces the estimated costs of 88 bln USD as its water and wastewater infrastructure deficit and this estimate is expected to grow under the "business as usual" approach (Blue Economy Initiative, 2014). Canadians understand that the previous century approach to using the water ecosystem is inefficient, very costly and inadequate. Canada must adopt a new model that includes a large portfolio of innovations in the water sphere together with innovative water management. Other developed country that uses the same idea in water management is the USA. Michigan – the city situated near the Great Lakes uses water as a center of its blue economy like Canada do. J. Austin (2014) in his report "Growing Michigan's blue economy" made a comparison of green and blue economies (Table 1).

*Table 1. Blue is the new green (Austin, 2014)*

Green economy	Blue economy
Wind, solar, battery, bio-mass, next energy technology creation	Water cleaning, monitoring, conservation products and services
Building retrofits, turbine machining, solar panel production, transit-building: "green collar jobs"	Building retrofits, water infrastructure repair, Filter making, "blue-collar" jobs
"Greenways", parks, open-space: "green" places	"Blue-ways", wetland preservation, waterfront renewal, water trails
Green roofs, recycling, local food: "green"	Rain-gardens, grey-water systems, smart water lifestyles

G. Pauli has set up the basic principles of blue economy that include not only water-based ideas. The model of blue economy is based on imitating the Nature and its main task is the creation of innovative ways to manage and use available resources and thus to deal with environmental problems and climate changes. The blue economy is based on innovations which were developed (and still developing) by scientists, researchers, institution and governments in various countries. The model of blue economy utilizes these innovations to achieve its goals. Blue economy connects research and development capabilities with business activities and allows them be implemented in the structure of local economies. The main reason to create innovations is the positive impact on the environment, where production is not endangered but vice versa it is going to increase itself (Pasztorova, 2014).

Some of the basic principles of this blue economy are: "Gravity is the main source of energy, solar energy is the second renewable fuel. Water is the primary solvent (no complex, chemical, toxic catalysts). Natural systems are non-linear. In nature the constant is change. Innovations take place in every moment. Nature only works with what is locally available. Sustainable business evolves with respect not only

to local resources, but also with regard to culture and tradition. Nature responds to basic needs and then evolves from sufficiency to abundance. The present economic model relies on scarcity as a basis for production and consumption" (Theblueeconomy.org, 2015).

In total, Pauli defines and explains 21 principles of blue economy in his book.

Consequently, like green economy, which is not limited to green ecosystem, this blue economy is not limited to the marine ecosystem. It is the economy that responds "to the basic needs of all with what we have. As such, it stands for a new way of designing business: using the resources available in cascading systems, where the waste of one product becomes the input to create a new cash flow" (Pauli, 2010).

Natural systems operate on the principle of full conversion of raw materials from one species to another, which allows for sustainable production, i.e. higher degree of performance. In its concentrated form the essence of blue economy is an integrated consideration of ecological economic effect in the evaluation of all economic activities. The overall effect is a non-linear sum of two different effects on the Nature – the traditional economic and the environmental one. An important aspect of blue economy is a priority preventive measure regarding the negative impact of economic activities on the natural environment (Rockstrom, 2015).

**Further research perspective.** The blue economy model needs more conceptualization and theoretical background like green economy has. At the same time, there are still no available measurements that will help understand the real size of blue economy and determine the main vectors for its development.

**Conclusion.** Increasing pressure on the Earth ecosystems leads to further deterioration of the environment on the one hand, and the overwhelming population growth, on the other. Under these conditions, there exists an issue of strategic direction for further development, which has to be accompanied by preserving the natural capital, in particular, the ecosystem integrity and building social capital.

To implement the concept of sustainable development it is proposed to use the theory of blue economy, based on the mechanisms of existence and interaction of natural ecosystems improved and developed for higher efficiency in the long term. This approach makes it possible to achieve the balance through the use of cascade nutrients and energy without wastes as well as the involvement of all participants responding to their basic needs, as it occurs in the Nature.

Even without common definition what blue economy is, this model of sustainable economy has got all chances to become a great alternative for green economy in the near future.

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