
THE CONTRIBUTION OF THE BIO-SECTOR TO ACHIEVING SUSTAINABILITY IN MODERN SOCIETY

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Abstract: Towards the end of the 20th century, it began to be realized that - humanity lives in a globalizing world of depleting energy sources, shortages of raw materials, food and drinking water; a nature from which hundreds of animals and plants disappear every year, disasters become commonplace, and global warming is taken for granted; a society without regulations, with over-consumptive patterns of consumption, claiming openness, but closed by greed and selfishness, without thinking for future generations; a growing population of the Planet, which means that needs are growing and natural resources are becoming more limited, even on the verge of depletion. All this leads to conflicts between increasing human needs and declining natural resources. Financial crises turn into economic ones, and economic crises into resource crises. Economic growth does not increase human happiness, but leads to growing social inequality and ecological imbalance. Growing environmental problems and the uneven distribution of wealth around the world raised questions more than forty years ago about how to achieve sustainability. As early as the early 1990s, a broad international consensus was formed around a network of principles and goals for sustainable development, known as the paradigm for the effectiveness of development aid, set out in the Millennium Development Program. Two periods for the implementation of Development Goals in 15-year time ranges are formed. In the first period, in 2000, at the Millennium Summit, the Millennium Declaration was signed, launching the Millennium Development Goals 2000-2015. The new Sustainable Development Goals, as natural successors to the Millennium Development Goals, Millennium Development Goals (MDGs) were adopted in August 2015 in New York, during the 70th UN General Assembly, where the world leaders of 193 countries (193 UN member states, two observer countries and 11 other countries) agreed to achieve a better future for all and adopt a new global framework for sustainable development, the "Agenda 2030", called "Transforming the World". It reflects the first international consensus reached that peace, security, justice and social inclusion for all should not be just separate goals, but mutually reinforcing. The program is considered to be crucial for sustainable development worldwide. It sets 17 Global Goals with 169 specific sub-goals, balancing the integration of the three aspects of the concept of sustainable development - economic, social and environmental and outlining the path for sustainable development of the Planet for the period up to 2030. They are universal, inclusive and relevant. for all countries in the world.

The purpose of this report is to present the results of a scientific study conducted among bio-sector enterprises, examining the possibilities for the sector's contribution to achieving the global goals for sustainable development of society. As a result of the research, the specific strategic commitments of the participants in the research, which are to be included in their development plans and programs, are summarized.

Keywords: Bio-sector, bio-enterprises, sustainable development

1. INTRODUCTION

In the autumn of 1987, at the 42nd session of the United Nations, the chairman of the International Commission on Environmental Protection, Gro Harlem Brundtland, presented a report on large-scale studies of the planet's state, summarized in two sections: to him and 2. Ways to overcome the impending planetary ecological catastrophe. The report, known as the Brundtland Report, formulates the demands for the sustainable development of modern society: development must be sustainable and benefit future generations; the use of resources should be in harmony with technological development and institutional change. Along with all the conclusions and recommendations for development, the Brundtland report introduces the concept of "sustainable development" which reads: *Sustainable development is such that achieves meet the vital needs of the present generation without being deprived of this (ie without them interfering with) the possibility and future generations.*²⁹⁷ The leading aspect in this definition is the idea of reconciling the satisfaction of human needs with the scarcity of resources, as well as the equality between present and future generations. In this sense, it contains (covers) two key ideas, covering: 1. The idea of the needs, and in particular the needs of the world's poorest people, and 2. The idea of the constraints imposed by the level of technology and social organizations on the ability of the environment to meet current and future needs.

²⁹⁷ http://europa.eu/legislation_summaries/environment/sustainable_development/index_bg.htm

The Bruntland report demonstrates the need for a radical change in human activity to date and the need to establish sustainable development on a global scale. One year later (in 1988), at the UN General Assembly, the report called "Our Common Future" was considered and approved as a key document with a special resolution to UN member states, giving instructions on how to comply with the basic requirements. and guidelines set out in the document.

The term "sustainable development" gained widespread popularity after the publication of the report of the World Commission on Environment and Development (in 1987), but the conference in Rio de Janeiro in 1992 played a crucial role in promoting the concept of sustainable development in modern society. (3-14 June 1992, Rio de Janeiro, Brazil).

The concept of sustainable development arises as a result of the perceived need for constructive ideas for overcoming the negative phenomena in modern society, threatening humanity with environmental catastrophe and social disorganization. It includes new values and new principles for regulating the processes in the field of economy, environment and social sphere, arousing great interest from the scientific community and business circles around the world. The modern understanding of the essence of the concept relies on a systematic approach to the basic values and the formulation of normative principles, which are the basis for consensus of the development goals. In this regard, the structure is built on the basis of unified, harmonized and balanced three separate systems: environmental, economic and social. (Fig. 1) The three systems, united and complementary, form the pillars of sustainable development - economy, environment, social sphere.²⁹⁸

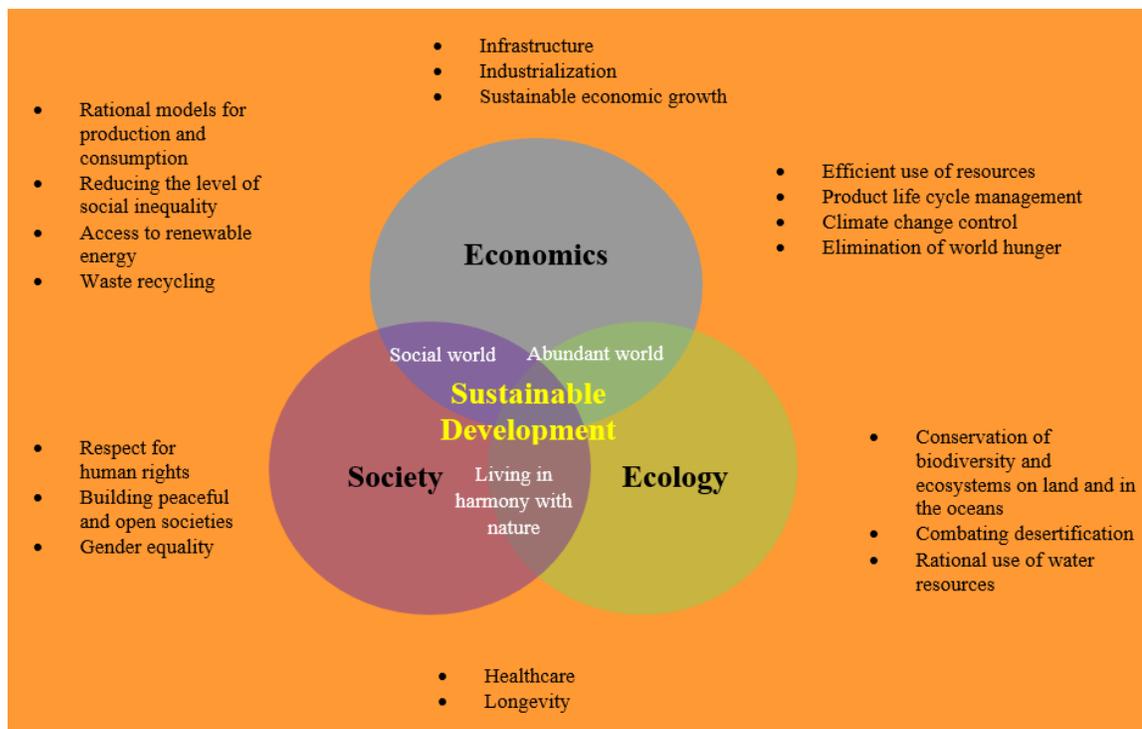


Fig. 1. Structure and main goals in the concept of sustainable development - harmonious development of modern society

The concept of sustainable development is aimed at balanced, environmentally friendly socio-economic development, preserving the potential of natural resources and increasing the responsibility of actions that harm each group of stakeholders. The concept does not describe the state of the system. It is a process that provides changes in the nature of activities in which the resources used, investments, technological process and institutional changes are tailored to meet current and future needs. It is based on the following basic principles:

1. Achieving a level of development where economic activity does not harm the environment (balance between economic and environmental aspects).

2. Maximum use of resources ensuring economic development in the interest of the population (balance between economic and social aspects).

²⁹⁸ Krachunov, H. Sustainable development of production systems. Color Print, Varna, ISBN 978-954-760-222-9, 2010

3. Addressing development challenges not only in the interests of the current generation, but also of future generations who have equal rights to resources. (balance between social and environmental aspects).

2. LITERATURE REVIEW

In general, the definitions of the concept of sustainable development can be grouped as²⁹⁹:

- **Classic. According** to the classical definition of sustainable development (from the Brundtland report, 1987), sustainable development is "that meets the needs of the present without compromising the ability of future generations to meet their own needs". It is interesting to see Aurelio Pechel (founder of the "Club of Rome" in 1968, uniting prominent scientists, politicians and administrators who study the problems of society), for which the development of a sustainable society, which in response to changes in internal and external conditions is able to establish a new balance corresponding to these changes both within itself and in the whole environment of its existence. " For Acad. G. Bliznakov, "Sustainable development is a development that takes into account the fact that planetary resources must be used wisely and sparingly to ensure a dignified life for both present and future generations."
- **Contemporary. According** to the modern definition adopted at the Rio Conference in 1992, the concept is defined as "a process of change in which the exploitation of resources, the focus of investment, the orientation of technological development and institutional change are in harmony with each other and improve both the current, as well as the future potential for satisfying human needs and desires".
- **Socially oriented** - "this development is sustainable, which" guarantees constant growth of quality of life and improvement of personality".³⁰⁰
- **Definitions taking into account the integration of the three elements** - economy, ecology, social responsibility. Integrated sustainable development is defined as "environmentally friendly economic growth leading to an increase in gross domestic product (GDP) based on its dematerialization and such a mechanism of income distribution and redistribution, which is the basis of social security for all members of society."³⁰¹ In this sense, "sustainable development" is a concept that consolidates the traditional notion of the relationship between man and nature, giving it a new meaning, consistent with modern social theory and practice. According to R. Genchev, sustainable development "achieves a balance between social and environmental principles, such as socially justified and environmentally friendly economic development."³⁰² E. Vasileva defines it as "a concept that consolidates the traditional understanding of the relationship between man and nature, giving it a new meaning, corresponding to modern social theory and practice."³⁰³

*In the Bulgarian legislation the concept is concretized and the sustainable development is connected with the unification of two main aspirations of the society: achievement of economic development, providing a growing standard of living and protection and improvement of the environment now and in the future.*³⁰⁴

If we separate the two terms - "sustainable" and "development" separately, it seems that they contradict each other. Sustainability (sustainable), according to the Bulgarian Interpretive Dictionary, represents - durability, immutability, strength or quality. The most common definition of stability is: "A property of a system to retain its basic characteristics with a relatively small change in a parameter."

The term "development", according to the Bulgarian Interpretive Dictionary,³⁰⁵ is defined as dynamics, evolution, improvement, progress, action, growth, etc., ie. associated with change. It is a constant transition from one stage to another - higher, more perfect.³⁰⁶ It is seen as a process that changes the shape or state of something. It follows that development cannot be sustainable. If we look at the two concepts from another point of view: "development" as a process of positive change, and "sustainable" as balance and stability, then combining these concepts, we can conclude that sustainable development is a balanced change of a system in which the fundamental systemic characteristics (interests of the participants, the most important values, ideas and goals of development, etc.) remain unchanged in the process of its positive development.

²⁹⁹ Dimov, N., The Environment - From Environmentalism to Freedom, ed. house Mak, S., 2012, p.395

³⁰⁰ Dimov, N., The Environment - From Environmentalism to Freedom, ed. house Mak, S., 2012, p.395

³⁰¹ Gechev, R., Sustainable development and its features in the transition to a market economy, National University Center "Public Sector Economics", Sofia, 2001, p.4

³⁰² Genchev, R., Sustainable Development: Economic Aspects. Indianapolis, University Press, 2005. ISBN 9780880938600. c. 262.

³⁰³ Vasileva, E., Business Environment and Sustainable Development of the Regions, UNWE Publishing House, S.2019, p.16

³⁰⁴ Environmental Protection Act, prom. SG, issue 91 of September 25, 2002

³⁰⁵ Bulgarian Interpretive Dictionary, Izt. Science and Art, 2015, p. 1010

³⁰⁶ Gilbert, Jane. "Development": The Power Of A World To Define Our World. 2004

The studied definitions make it possible to summarize that sustainable development is a direction for the use of natural resources, which aims to meet human needs while maintaining the natural balance in the environment, so that these needs meet both the present and the distant future. Sustainable development unites the basic aspirations of society: achieving economic development, increasing living standards and protecting and improving the environment now and in the future.

There are four successive levels for the application of the concept of sustainable development. (Fig. 2) These are - global, national, regional and business level. In the transition from the global to the lower levels, the details in the concept increase and concretize. If the global level determines the basic principles of sustainable development, at the national level policies, strategies, plans and mechanisms for their implementation are developed, and at the level of regions (municipalities) and business the implementation of the set goals and adopted measures is carried out.



Fig. 2. Basic levels for implementation of the concept of sustainable development

As early as the early 1990s, a broad international consensus was formed around a network of principles and goals for sustainable development, known as the paradigm for the effectiveness of development aid, set out in the Millennium Development Program.³⁰⁷ Two periods for the implementation of Development Goals in 15-year time ranges are formed. In the first period, in 2000, at the Millennium Summit, the Millennium Declaration was signed, launching the Millennium Development Goals for the period 2000-2015. Two years before this deadline, after intensive negotiations, in order to to set global development goals in the new period (2015-2030), the international community is preparing (with the widest possible representation of all stakeholders) a new, more ambitious package of goals for the next 15 years, taking into account the accumulated experience and the state of the world. The new Sustainable Development Goals are natural successors to the Millennium Development Goals (MDGs). They were adopted in August 2015 in New York, during the 70th UN General Assembly. At the event, the world leaders of 193 countries (193 UN member states, two observer countries and 11 other countries) agreed to achieve a better future for all and adopted **a new global framework for sustainable development**, the "2030 Agenda". called "Let's Transform the World." It reflects the first international consensus reached that peace, security, justice and social inclusion for all should not be just separate goals, but mutually reinforcing. The program is considered to be crucial for sustainable development worldwide. It sets 17 Global Goals with 169 specific sub-goals, balancing the integration of the three aspects of the concept of sustainable development - economic, social and environmental and outlining the path for sustainable development of the Planet for the period up to 2030. They are universal, inclusive and relevant. for all countries in the world. In the table. 1. the groups of indicators and indicators for sustainable development are presented.

³⁰⁷ Petranka, F., A. Valkanova, P. Buchkov, Development Policy: From Development Assistance to Global Development Partnership, BPMR, ISBN 978-619-7484-01-4, Sofia 2018, p.22

Table 1. Groups of indicators and indicators for sustainable development

Group of indicators	Indicators
Group 1: Social	Fighting poverty; demographic dynamics and sustainability; improving education, awareness and education of communities; protection and improvement of human health; improving the development of settlements.
Group 2: Economically	International cooperation to accelerate sustainable development and related local policies; changing production and consumption patterns; financial resources and mechanisms; transfer of environmentally friendly technologies, cooperation and capacity building
Group 3: Ecological	Preservation of the quality of water resources and their supply; protection of the oceans, seas and coastal areas; an integrated approach to planning and rational use of land resources; sustainable management of vulnerable ecosystems, combating desertification and droughts; promoting sustainable agriculture and rural development; forest conservation; conservation of biological diversity; ecological use of biotechnologies; atmospheric protection; environmental management of waste, emissions and wastewater.

Bio-enterprises have a crucial role to play in achieving each of the global goals and overcoming the challenges they pose to modern society. As key players in the process of achieving global sustainability, they need to adopt and apply the principles of sustainability in their development policy. The requirement for integrated application of environmental, economic and social aspects in the implementation of its business practices is key to achieving the global goals of sustainable development. (fig. 3)

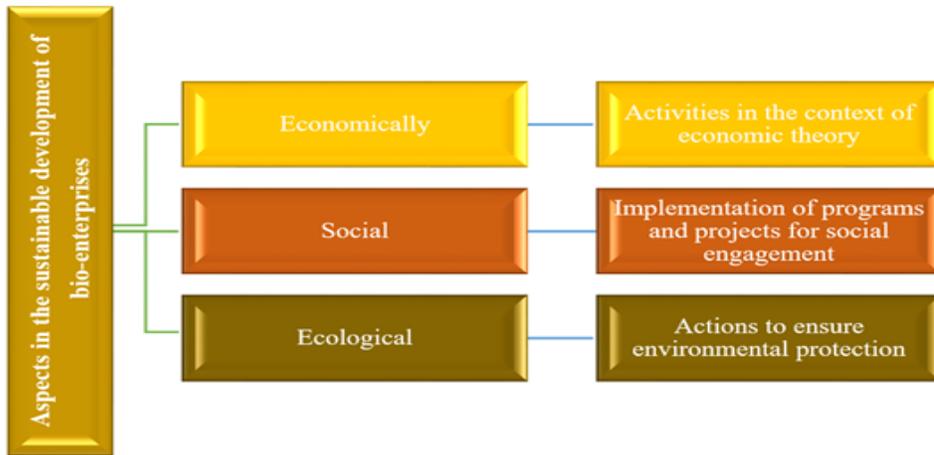


Fig.3 Aspects of the activity of bio-enterprises, in the context of the concept of sustainable development.

A study on the possibilities of the bio-sector to contribute to the achievement of the set goals in the three aspects of sustainable development in the period until 2030 are summarized in table. 2.

Table 2. Commitments of bio-enterprises to the goals of sustainable development

Indicator group	Indicators
Social sphere	Services to be organized and implemented in order to meet real human needs. They must be based on the principles of justice and equality. Ensuring safe, healthy and dignified working conditions. Employees should receive fair pay for their work and be supported through economic incentives, cultural diversity and social engagement. Workplaces and ongoing technological processes in enterprises must be designed in a way that ensures minimization or elimination of chemical, ergonomic, physical and other types of risk. Providing lifelong learning opportunities.
Economic	Ensuring long-term economic and financial stability of production; changing production and consumption patterns; transfer of environmentally friendly technologies, cooperation and

sphere	capacity building. The organization of the business should be oriented towards increasing the efficiency of the use of human capital.
Ecological sphere	Products and packaging must be designed in such a way as to ensure their safety throughout their life cycle. Increasing the relative share of recyclable materials that are used in the production of products and packaging, and in parallel, the energy used in the production process must be generated from renewable and environmentally friendly energy sources. Reduction, destruction or recycling of waste and environmentally incompatible products. Elimination of chemical and physical substances, agents and conditions in the production and sale of products that pose a danger to human health. Non-use of substances harmful or dangerous to human health and to the ecological balance. Achieving energy and resource efficiency; ecological use of biotechnologies; atmospheric protection; environmental management of waste, emissions and wastewater.

3. CONCLUSION

Bio-sector enterprises perceive the concept of sustainable development as a balance between the economic interests of business, the environment, employees, society and future generations. They are aware of their role in the process of achieving sustainability in modern society. The commitments they make in their development policies cover the three areas of the concept of global sustainable development - social, economic and environmental.

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