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## STRATEGIC GUIDELINES FOR THE FORMATION OF THE BIOECONOMY AS A MECHANISM FOR SUSTAINABLE DEVELOPMENT OF THE UKRAINIAN ECONOMY

In general, the strategy of sustainable development is based on a very logical and understandable approach: for the sustainable development of humanity on a planet with limited resources, it is important not to exhaust these resources and not to exceed the planet's natural capacity for self-regeneration. That is, in addition to economic growth, which ensures the material well-being of mankind, the protection and preservation of the natural environment is the second prerequisite for the

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optimistic future of mankind in the long term. At least until we became a space civilization with technological access to the resources of other planets and active use of star energy. But it would also be unworthy of a space civilization to clutter up its home, exhaust the resources of its planet before colonizing others.

The third mandatory component of sustainable development is social development (social inclusion). This thesis is also completely logical - any society and humanity in general cannot feel stable (permanent) as long as there is significant material and social inequality between its members, as long as part of society is physically threatened by hunger, disease and other social risks.

The strategy involves a serious systemic approach to mutual coordination and consideration of the complex interactions between them. In addition, it should be taken into account that each of the components in itself is a complex dynamic system that develops. Therefore, the systematic approach and systematic analysis are the methodological basis of sustainable development.

The strategy of sustainable development is not only a scientific discipline that helps to understand the complex and interconnected world of modern civilization, but also offers effective ways of developing society, protecting us from many possible risks. Both in the scientific and practical spheres, the strategy of sustainable development can be considered as the most progressive and promising guidepost for the development of humanity [1].

A sustainable development strategy is usually understood as a strategy for the development of humanity, civilization and the whole or a separate society, for example, a country or a region. The strategy of sustainable development can be defined as the most effective strategy for the development of modern civilization, which is aimed at the maximum satisfaction of the natural needs of a person who is in harmony with nature and is free from social troubles. The strategy of sustainable development envisages sustainable economic growth of society, which does not harm the environment and is coordinated with the social development of society.

There are three main interdependent component strategies:

1. Economic component – economic development.

2. Ecological component – protection and preservation of the environment.

3. Social component – social development.

This approach to the development of society is somewhat simplified, but it is a certain alternative to the idea of economic growth and enrichment at any cost, including at the expense of depletion of natural resources, pollution of the natural environment, and generation of social conflicts in society.

According to the definition of the International Commission on Environment and Development, "Sustainable development is the development of society in which the satisfaction of the needs of the present generations should not jeopardize the ability of future generations to meet their needs." [2].

The strategy of sustainable development aims to determine such a way of development of society, which makes impossible (or minimizes) the occurrence of conditions that threaten such development for the longest possible time on the scale of the entire civilization. Obviously, this is a serious problem that requires global thinking and collective civilizational responsibility. After all, it is clear that significant economic growth of a certain country, a certain region, a certain group of people is quite possible, which satisfies all the desired needs of this society despite the economic, ecological and/or social troubles in other parts of the world.

But such satisfaction of needs is impossible on the scale of the entire planet, of all mankind, as long as the development mechanism allows local or global economic, ecological and social problems and conflicts. And only when the development of society involves the systematic solution of all critically important economic, ecological and social challenges on the scale of the entire planet, such development will be successful seriously and for a long time. This is exactly what we will call sustainable development.

The Sustainable Development Goals are seventeen goals that include the most ambitious goals and objectives that humanity has ever set. Specifically, the abbreviated name of the Goals speaks for itself:

(1) no poverty,

(2) end hunger,

(3) good health and well-being,

(4) quality education,

(5) gender equality,

(6) clean water and sanitation,

(7) affordable and clean energy,

(8) decent work and economic growth,

(9) industry, innovation and infrastructure,

(10) reducing inequality,

(11) sustainable cities and communities,

(12) responsible consumption and production,

(13) climate action,

(14) life under water,

(15) life on land,

(16) peace, justice and strong institutions,

(17) partnership for the goals (sustainable development) [1].

Bioeconomy is a paradigm and a tool for achieving the goals of sustainable development [3].

Moving from replacement logic to circularity and sustainability. For this, it is necessary to form a sustainable bioeconomy, the normative base of which is the Goals of sustainable development: 2). Overcoming hunger. 6). Clean water and proper sanitary conditions. 7). Renewable energy. 8). Decent work and economic growth. 12). Responsible consumption. 13). Fight against climate change. 15). Preservation of terrestrial ecosystems [3].

Bioeconomy can be considered as an integrated science based on an interdisciplinary approach (Fig. 1).

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Fig. 1 – Interrelationship of economics, bioeconomy, sustainable development economics, biotechnology and other scientific disciplines

Source: developed by the author

Thus, it can be assumed that, according to the principle of "interdisciplinarity", bioeconomy is a set of scientific disciplines that preserve their integrity, each of which interprets it (bioeconomy), considers it exclusively from its own point of view. This approach to revealing the essence of the studied concept is limited and one-sided, so it is not enough to rely on it when it comes to bioeconomy.

The bioeconomy thrives on expertise and collaboration across multiple industries. Together, the industries are developing plants and microorganisms, as well as technical processes for the sustainable production of food, feed, raw materials and valuable materials, as well as bioenergy. Future development requires innovations that equally take environmental, economic and social issues into account. This is where bioeconomy research comes in handy. For all fields of application and sectors of the economy, scientists are looking for solutions based on the effective use of biogenic resources. Bioeconomy research is also aimed at expanding biotechnology. This means knowing how biological systems are organized, how they work and how they interact. Bioeconomy is designed to contribute to the development of more effective application of this knowledge in practice [4].

The predicted shortage of food due to the war in Ukraine and population growth, climate change, the depletion of mineral, mineral, raw and energy resources, environmental pollution, the growth of consumption and the spread of the ideology of consumerism require the search for mechanisms to maintain a balance between the consumption of limited resources and the accumulation of waste, which cause ecological damage to the environment and the population of the planet.

One of the effective ways to solve this problem is the development of bioeconomy, which is designed to solve the problems of more sustainable development of society, storage of resources and at the same time ensuring a high standard of living, the combination of science and technology in the development of modern society.

The bioeconomy ensures the production of renewable biological raw materials and the transformation of these resources and waste into products with added value, in particular, into food, feed, bio-based products and bioenergy [5].

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The war in Ukraine triggered a global crisis, which resulted in rising prices for food, energy and fertilizers, which negatively affected the economies of 74 developing countries with a total population of 1.2 billion:

whereas Ukraine accounts for 11 % of the world's wheat market, 16 % of its barley, 15 % of its maize, 16 % of its rapeseed, 50 % of its sunflower seed oil, 9 % of trade in sunflower seeds and 61 % of its sunflower cake; whereas for Russia, these figures are 20 % (wheat), 16 % (barley), 2 % (maize), 3 % (rapeseed) and 20 % (sunflower cake);

whereas Ukraine has become an important supplier to the EU, being the primary supplier of maize (on average 9.2 megatonnes – 57 % of supplies), rapeseed (2 megatonnes – 42 % of European imports by volume), sunflower seeds (0.1 megatonnes – 15 %) and sunflower cake (1.3 megatonnes – 47 % of imports), and to a lesser extent wheat (1 megatonne – 30 % of imports); whereas Russia is also, but to a lesser extent, an important supplier to the EU of wheat (0.5 megatonnes – 11 %), but mainly of rapeseed cake (0.2 megatonnes – 50 %), sunflower cake (0.9 megatonnes – 34 %) and sunflower seeds (0.3 megatonnes – 35 %);

whereas even before the Russian invasion of Ukraine, global agricultural markets saw a rise in prices, due partly to climate effects and the impact of the COVID-19 pandemic; whereas rising energy prices in Europe are having a significant impact on the agricultural, fisheries and aquaculture sectors, with increased fertiliser prices and higher energy costs for farmers;

whereas since the beginning of the conflict, there has been a sharp increase in world prices for agricultural products (between + 5 % and + 10 % depending on the product), bringing them closer to the prices of the 2007-2008 marketing year [6].

Calls on the Commission to coordinate and support Member States with country-specific recommendations and the exchange of best practices to improve the quality and inclusivity of their educational systems and close gender and socioeconomic gaps in the acquisition of basic skills and the uptake of STEAM subjects in line with the vision of the European Education Area, the green and digital transitions of the EU and SDG4 [7].

In the post-war period, the bioeconomy should be a priority to support Ukrainian economic recovery, as a sustainable bioeconomy returns resources to the real sector, creates jobs, promotes environmental production and consumption, and makes optimal use of limited resources on a circular basis [6].

The bioeconomy is a paradigm and a mechanism for achieving sustainable development goals. Strategic guidelines for the formation of the bioeconomy as a mechanism for sustainable economic development

The bioeconomy is an important priority and the main vector in the concept of sustainable development policy, as it integrates economic and social components aimed at meeting the needs of both current and future generations.

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## SWEDEN'S ECONOMIC DEVELOPMENT GOALS: STRIVING FOR RESILIENCE, INCLUSIVITY, AND SUSTAINABILITY

As a global leader in sustainable development and economic stability, Sweden is making strides to secure its position amidst the evolving economic and environmental landscape. With the overarching aim of creating an economy that is both inclusive and resilient, Sweden's policies are rooted in addressing environmental imperatives, advancing a fair labor market, and enhancing housing affordability. These goals reflect Sweden's commitment to the European Green Deal, the 2030 Agenda for Sustainable Development, and other international frameworks for economic and social progress [1-2].

A key aspect of Sweden's economic strategy is the transition toward a sustainable, low-carbon economy, which hinges on increasing renewable energy