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THEORETICAL ASPECTS OF ENVIRONMENTAL SUSTAINABILITY

Xonxodjaeva Nodira Bahtiyarovna
Associate professor at Tashkent State Pedagogical University, Uzbekistan

Urazbaeva Iroda Kenesbaevna
Student at Tashkent State Pedagogical University, Uzbekistan

ABOUT ARTICLE

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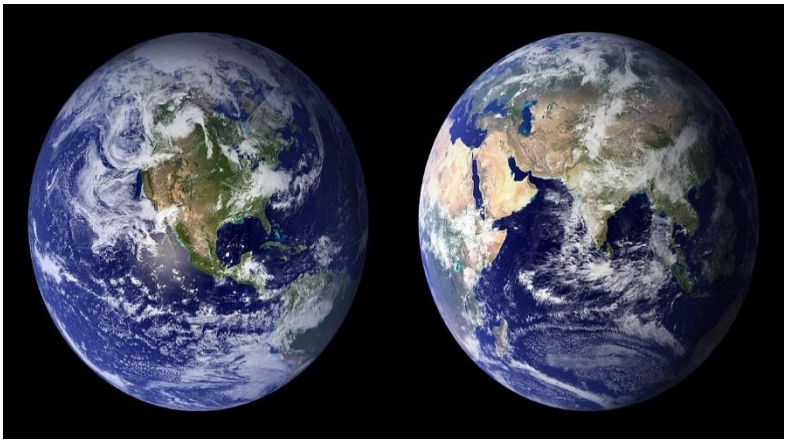
Abstract: In the context of the development of the economic complex of the region, its environmental aspects acquire special significance. The reasons for this are the growing negative impact on the environment and the depletion of the natural potential of the territories. As a result, the issue of managing the environmental protection of the region within the framework of its sustainable development is becoming increasingly relevant. At the same time, one of the tools of this management is the assessment of environmental sustainability of regional development.

INTRODUCTION

Individual and collective human activities have a huge impact on our planet and all living organisms living on it. Given that these activities are undoubtedly leading to environmental degradation, rapid loss of biodiversity and climate change, humanity needs to come up with ways to solve these problems.



Sustainable development, which meets the needs of human life and contributes to the life and development of subsequent generations, is an urgent need for every country, people, and all humanity. But there is doubt about the extent to which this development is possible based on the

concept of "environmental sustainability," which some authors consider an essential element of the sustainable development process.

Fig. 1. Environmental sustainability will allow us to support human life in its current form.

Wetlands and forests are typical examples of biologically resilient systems. For humans, environmental sustainability provides the potential to maintain quality of life and procreation,

Healthy ecosystems provide food that people and other organisms need to live.

There are two main ways to reduce the negative impact of humanity and improve ecosystems. The first is environmental management. This approach is based on information collected through the geosciences, applied ecology and conservation biology. The second approach is the management of resource consumption by humanity, which is based on information collected through economic sciences.

Sustainable economics, sensitive to the environment, also taking into account the social, cultural and financial aspects. Creating a sustainable economy is a modern challenge to the world, at the level of international and national legislation, consumption, urban planning, transport, and affects the lifestyle of every person.

The mission of the Earth Charter is to promote the transition to sustainable living and the formation of a global community based on shared ethical foundations, including respect and care for all living things, the principles of ecological integrity, universal human rights, respect for cultural diversity, economic justice, democracy and culture of the world.

Ways to live more sustainably can be found by reorganizing living environments (e.g. ecovillages, ecocities and sustainable cities, rebuilding economic sectors (permaculture, green building, sustainable agriculture and sustainable architecture), using new green technologies, renewable energy sources.

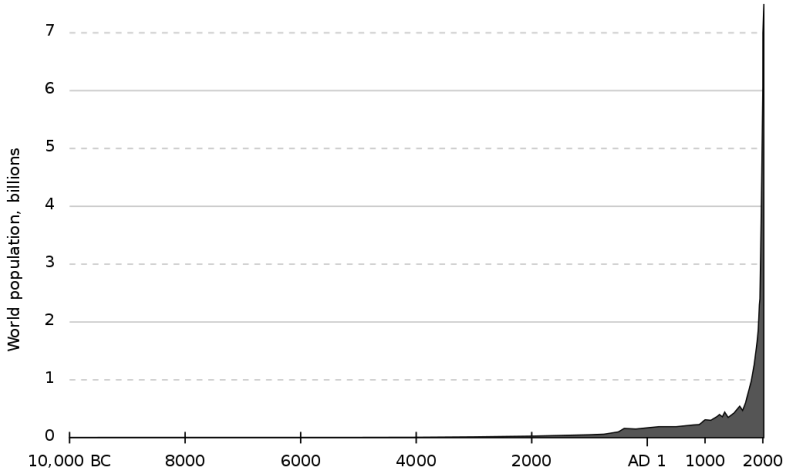


Fig. 2. Global population growth chart.

Graph showing world population growth from 10,000 BC - 2000 depicting exponential growth

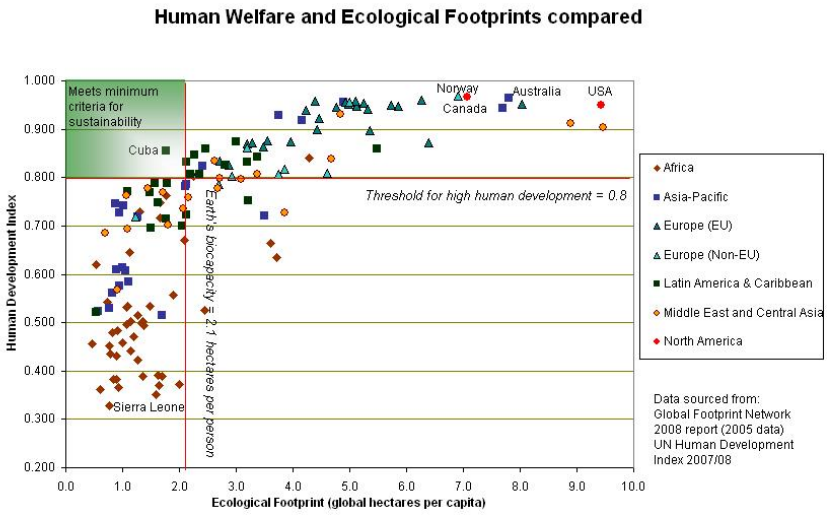


Fig. 3. Ecological footprint of their Human Development Index (HDI)

In Figure 2 you can see the environmental footprint of different countries compared to their Human Development Index (HDI).

The three most common causes of environmental degradation due to human activities include population growth, modern lifestyles and human behavior. In demographic terms, this is because there are too many people living on our planet: between 1950 and 2015, the world's population tripled, and by 2030 it is expected to grow by another one billion people and will reach 8.5 billion people.

Today's methodology for determining living standards focuses primarily on high per capita consumption rates in urban areas and rich countries. In countries that have achieved significant improvements in living standards, the burden on the environment has doubled over the past 20 years. In 2012, in most high-income countries, human impacts on the environment did not meet sustainable development goals. The behavioral explanation views humans as both a source of environmental problems and a potential solution to them, particularly by promoting recycling, cycling and fuel-efficient cars.

Environmental sustainability is the ability of an ecological system to maintain its structure and functions under the influence of internal and external factors. A synonym for this concept is environmental stability. The level of environmental sustainability of countries is quantified by the "Environmental Sustainability Index" (ESI). The index is based on the calculation of 76 parameters, including indicators of the state of ecosystems, environmental aspects of public health, environmental stress, institutional and social capabilities and international activity of the state.

Sustainable development, i.e. environmental sustainability is expected to be achieved in the following ways:

In Figure 2 you can see the environmental footprint of different countries compared to their Human Development Index (HDI).

Among the three most common reasons, explaining the increase in the efficiency of resource use, through the introduction of environmentally friendly and advanced technologies, restructuring in the structure of the economy, environmental management, scientifically sound, recycling and consumption of production waste;

- increasing average life expectancy by improving its quality, environmental and social safety, improving people's health and introducing the "idea of a healthy society" with a healthy lifestyle;
- reducing anthropogenic pressure on nature by reducing emissions, cleaning territories from "historical pollution", waste management, preventing environmental emergencies and improving environmental protection activities based on the introduction of an effective economic mechanism ("green investments" including) and ecosystem transregional the principle of implementing sustainable development programs;
- restoration and conservation of the natural environment, landscapes, ecosystems and biological diversity.

There is no doubt that this environmental program can be implemented practically and in some time reach environmental sustainability equal to 88 ESI points and even exceed this level. But how will this contribute to the sustainable continuous development of society and the solution of its environmental problems?

Modern industrial production as a human tool, with its transformative effect, is oriented from man to nature.

All its key technologies (mining, energy, chemical, metallurgical, information, agricultural, transport, construction, electronics, mechanical engineering, food industry, etc.) are based on the exhaustible resources of natural ecosystems, which are exploited and not developed at all by people. With the most efficient 100% use of gas, oil, coal, land, minerals, fresh water and air, they will begin to run out in the future, and with them the sustainable development of all humanity will slow down and then cease. Low-power "alternative energy sources" and renewable resources (given their natural renewal rate) cannot compensate for this disastrous mass consumption of material means of subsistence and living space.

Absolutely everything that people extract from the environment with their cars turns into waste of consumption and production after a certain time. Even these machines and technologies. EVERYTHING is 100%. For this reason, there is no waste-free technical form of production and technology, and it is fundamentally impossible to create them. Energy (even environmentally friendly) turns into heat, which irreversibly disrupts the thermal balance of the planet. Gas, oil and coal, when burned, are converted into greenhouse CO2, simultaneously burning the planet's oxygen reserves. Metals and other elements end their useful lives in the form of polluting emissions. "Everything is from dust, and everything will return to dust," Ecclesiastes noted at one time.

Due to the huge difference in the speed of development of natural and social natural processes, the earth does not have time to absorb and regenerate this waste. And all of today's environmental activities by humans (including waste management, treatment, recycling and environmental restoration) lead to the fact that this waste is transferred from one toxic form to the next, often much more dangerous, but for future generations. Treatment technologies themselves are sources of pollution! Is it possible to talk about sustainable development by "disposing" of your waste using primitive methods? (For example, the well-known "breakthrough" project in Kazakhstan to clean the bed of the Nura River from mercury will make itself known when, after 100 years of "environmental sustainability", mercury burial grounds begin to collapse and mercury begins to seep into groundwater...)

Environmental sustainability of the planet. Individual and collective human activities have a huge impact on our planet and all living organisms living on it. Given that these activities are undoubtedly leading to environmental degradation, rapid loss of biodiversity and climate change, humanity needs to come up with ways to solve these problems.

Along with initiatives offered by governments, civil society and the private sector, education can play a significant role in bringing about the transformation needed to build environmentally responsible societies. Education helps shape values, perceptions and attitudes. It plays an important role in terms of developing practical skills, developing methods and tools that can be used to reduce dependence on or completely eliminate unsustainable farming practices.

The multifaceted role of education in ensuring sustainable development is not always positive. For example, knowledge can contribute to the spread of unsustainable forms of management, including excessive consumption of resources, and accelerate the loss of relatively environmentally safe knowledge and ways of life of indigenous people. Reorganization and reform of education systems may be required to ensure the positive impact of education.

Conclusion. Many studies have shown that humanity is already consuming more resources than the planet can reproduce.

The Ecological Footprint measures human consumption in terms of the biologically productive land that provides the resources people need and consumes the waste of the average person on Earth.

And also one of the most important incentives for achieving environmental sustainability is the fight against poverty. It is widely accepted that poverty is a consequence of environmental degradation. This result was announced in the Brundtland report[4] and the Millennium Development Goals report.[5]

According to the Brundtland report, “poverty is one of the effects of global environmental problems. In this regard, it is necessary to combat environmental problems and have an understanding of the causes of poverty and international inequality.”[6]

People living in poverty rely more on local ecosystems for basic resources (food and medicine) and general well-being.[7]

As the global population grows, pressure on local ecosystems increases. According to the UN Population Fund, high fertility and poverty are directly related, and the poorest countries in the world also have high fertility and corresponding population growth rates.[8]

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