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A VALUATION CLASSIFICATION OF ECOSYSTEM SERVICES

The classic work on ecosystem services called «services of nature» refers to societal dependence on natural ecosystems. (edited by the famous American environmental economist G. Daly 1997). Examples of ecosystem services include water and air purification, precipitation and drought regulation, waste assimilation and detoxification, soil formation and conservation, pest and disease control, biodiversity conservation for agriculture, ultraviolet radiation protection, climate stabilization, and much more [1].

All of the listed goods and services are often combined under the term «ecosystem services». The very definition of ecosystem services remains largely controversial. It seems necessary to provide an overview of the concept of ecosystem services from the point of view of various international organizations, as well as individual foreign and domestic scientists [2].

The term «ecosystem services» first appeared in the work of P. Ehrlich and A. Ehrlich in 1981 (Ehrlich, Ehrlich, 1981) and emphasized the social significance of the functions of nature. In ecology, the term ecosystem function is traditionally used to refer to the set of ecosystem processes operating in an ecological system (Loreau et al., 2002; Hector et al., 2007), regardless of whether these processes are beneficial to humans or not. However, in the late 1960, in the 1970, a number of authors began to describe how specific «functions of nature» serve human society (King, 1966; Helliwell, 1969; Hueting, 1970; Odum, Odum, 1972; Braat et al., 1979, Puzachenko, 1987 ; Rosenberg, 1994)[3].

Ecosystem services are the benefits that people receive from ecosystems (Millennium Ecosystem Assessment, 2005). This definition, first of all, indicates the need for economic (value) identification of ecosystem services [2,8]. In foreign literature, ecosystem services are defined as the contribution of an ecosystem to benefits used in economic and other human activities [4].

In Russian, benefit is interpreted in two aspects: narrow (applied) and broad (public). In the narrow sense, it is profit, income, in the broad sense it is benefit.

Despite different approaches to defining the term «ecosystem services», it can be noted that ecosystem services are the benefits that people derive from ecosystems - dynamic complexes of communities of plants, an-

imals and microorganisms, and the non-living environment, interacting as a functional unity. These benefits are created directly from the interaction of elements within the ecosystems described above [5].

The classification of ecosystem services requires a distinction between the concepts of «function» and «service». The concept of «function» expresses the capital (long-term) value of the ecosystem, and «ecosystem service» – its «current» production. An ecosystem service is a derivative of a «function», but not vice versa.

Recently, special attention has been drawn to the classification presented in the UN report, in which ecosystem services are divided into four categories (UNEP, 2005) [6, 7]:

1) providing services - food, water, wood, various natural materials, genetic resources, natural medicinal plants, etc.;

2) regulatory services that affect air quality, climate, water resources, water treatment, waste treatment, disease regulation, erosion, natural disasters;

3) cultural services - spiritual and religious, aesthetic values, recreation and ecotourism;

4) supporting services – soil formation, photosynthesis and nutrient cycling.

The classification of ecosystem services that has become popular does not fully distinguish between the producing function of ecosystems as a resource for environmental management and a resource for preserving natural balance, i.e., as an ecological resource that integrates the material products of ecosystems and ecosystem services as such.

To date, two main concepts have emerged for the economic assessment of natural resources that are most suitable for determining the cost value of ecosystem services [8]:

- rent concept of the alternative cost of natural resources;
- the concept of the total economic value (value) of nature.

In the documents of the II World Conference on Environment and Development (Rio De Janeiro, 1992), the principle of opportunity costs (opportunity cost) was put forward as a basic principle for building an environmental management economy.

The principle is dominant and determines the concept of the entire system of value relations for sustainable environmental management. This principle reflects the real «movement» of economic relations, the time characteristics of which change due to the need to meet new needs, incl. environmental.

The rent concept of the opportunity cost of natural resources is because it is almost impossible to directly and directly measure the value of

ecosystem services. The most probable and realistic way is the alternative cost of the environmental effect, which is the value of the “lost” differential rent of the reproductive resource intended for its exploitation. Society accepts the loss of the economic value of a resource (in the form of differential rent) in order to preserve its environmental value.

The concept of total economic value (cost) of natural goods and the associated cost-benefit method is based on a broad interpretation of the value of natural goods, the cost of their use and the cost of non-use, with a possible and hypothetical measurement of the value of natural goods. certain structural elements of value: direct, indirect, deferred alternative (representatives of value in use), legacy and realization (representatives of value of non-use), Millennium Ecosystem Assessment, 2005, the emergence of this concept gave impetus to the use and practical expression of all diversity benefits of nature, assessment of its resources for present and future generations.

However, this concept contains controversial provisions. It allows you to simply sum up the value of ecosystem services without taking into account the interconnection of functions and the fact that the provision of one service (function) without the implementation of another is impossible. In addition, the concept involves summing up the cost of natural products (wood, berries, mushrooms, etc.), which have a rental value, and the cost of environmental products (harvested wood, harvested berries, mushrooms, etc.), transformed by human labor ready-to-eat products [8].

The concept of the total economic value of natural goods and the methodological approach to assessing ecosystem services developed on its basis has its limitations. Due to the high complexity of calculations, the need to have extensive and reliable information on the characteristics of each structural element of the assessment, starting from the physical characteristics of an environmental resource (relief, runoff, carbon dioxide absorption, etc.) and ending with the problem of their cost measurement, the methodology does not have Great practical solution. It is advisable to use its individual positions and the results obtained as additional information to determine the value of ecosystem services in comparison with other methods for their valuation. However, in our opinion, using it as the main calculation method will not always be correct.

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MODERN REVIEW AND PROSPECTS FOR FURTHER DEVELOPMENT OF RENTAL RELATIONS

A historical analysis of the development of economic teachings from the birth of capitalism to the present time has shown that scientific movements, despite different visions of the reasons for the emergence of rent and its nature, uniformly perceive the value aspect of the concept.

Rent appears to be the resulting value from the market price of environmental products and arises as a consequence of the inelastic (limited) supply of natural resources, which leads to the need to pay for it by the entire society.

Within the framework of market relations, natural or land rent can be considered as an external effect, i.e. obtaining additional profit when using limited natural resources, which defines it as an independent part of the price of the environmental product.

Initially, the problem of rent concerned only land, and the economic mechanism of its formation was based on the limited land resources, which made land an economic resource.

According to D. Ricardo, rent is a part of the product of the land, which is paid to the landowner for the use of the primary and indestructible