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# РОЗВИТОК ІНКЛЮЗИВНОСТІ У СФЕРІ РЕКРЕАЦІЙНОГО ПРИРОДОКОРИСТУВАННЯ НА ПРИКЛАДІ ПЛЯЖНИХ ТЕРИТОРІЙ

Актуальність. Особливо роль у системі економічного розвитку країни та подальшої інтеграції у Європейський союз відіграє забезпечення інклюзивності у сфері рекреаційного природокористування.— Сучасна інституційна база досить фрагментарна щодо адміністративного регулювання пляжних територій — середовища сукупності цінних природних ресурсів, які є привабливими для розбудови бізнес-діяльності. Це призводить до неможливості здійснення ефективної економічної оцінки територій, збереження їх екологічного стану, і як наслідок перешкоджає слідуванню світовим тенденціям розвитку економіки.

**Мета та завданяі.** Метою статті є розкриття характеристик інклюзивного підходу та окреслення складових організації та розвитку пляжних територій. Формулювання критеріїв створення інклюзивного пляжу. Обтрунтовання впровадження принципів організації інклюзивності рекреаційних природних ресурсів на прикладі пляжів, які отримали статус Blue Flag.

**Результати.** Авторами розглянуто законодавчий базис, стратегії і плани дій з питань охорони морського природного середовища України та його використання. Представлено правила використання берегозахисних споруд, які є місцями масового відпочинку та виявлено в них протиріччя. Задекларовано принципи інклюзивності використання пляжних територій. Проаналізовано стан забрудненості пляжних територій, методики оцінки впливу господарської діяльності на морські екосистеми, стан туристичних потоків та надано пропозиції.

Висновки. Обгрунтовано, що відсутній науковий теоретичний базис, а у законодавчому полі немає єдиного нормативно-правового акту, який регулює питання пляжних територій, їх забруднення, відповідні економічні відносини. Обгрунтовано, що відсутнє зонування пляжних територій та не враховується їх екологічний стан при розрахунку вартості орендної плати. На недостатньо рівні — дотримання соціальних потреб різних верств населення та забезпечення догляду, використання та охорони контактної зони як єдиного цілого. Обгрунтовано необхідність використання податкової політики, рентних платежів, заснованих на економічній оцінці природних рекреаційних ресурсів з урахуванням екологічної складової.

**Ключові слова:** пляжні території, інклюзивна економіка, зона суша-море, інституційне забезпечення, забрудненя, орендна плата, екологічний стан.

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# DEVELOPMENT OF INCLUSIVITY IN THE FIELD OF RECREATIONAL NATURE MANAGEMENT ON THE EXAMPLE OF BEACH TERRITORIES

**Topicality.** Ensuring inclusiveness in the field of recreational nature management plays a special role in the system of economic development of the country and further integration into the European Union. The modern institutional base is rather fragmentary in terms of administrative regulation of beach areas - the environment of a set of valuable natural resources that are attractive for business development. This leads to the impossibility of effective economic assessment of territories, preservation of their ecological status, and as a consequence prevents the pursuit of global economic trends.

Aim and tasks. The purpose of the article is to reveal the characteristics of an inclusive approach and outline the components of the organization and development of beach areas. Formulation of criteria for creating an inclusive beach. Substantiation of introduction of principles of the organization of inclusiveness of recreational natural resources on an example of the beaches which have received the Blue Flag status.

Research results. The authors consider the legislative basis, strategies and action plans for the protection of the marine environment of Ukraine and its use. The rules of use of shore protection structures, which are places of mass recreation, are presented and contradictions are revealed in them. The principles of inclusive use of beach areas are declared. The state of pollution of beach areas, methods of assessing the impact of economic activities on marine ecosystems, the state of tourist flows and proposals are analyzed.

Conclusion. It is substantiated that there is no scientific theoretical basis, and in the legislative field there is no single legal act that regulates the issues of beach areas, their pollution, the relevant economic relations. It is substantiated that there is no zoning of beach areas and their ecological condition is not taken into account when calculating the cost of rent. At an insufficient level - compliance with the social needs of different segments of the population and ensuring the care, use and protection of the contact area as a whole. The necessity of using tax policy, rent payments based on economic assessment of natural recreational resources taking into account the ecological component is substantiated.

Key words: beach areas, inclusive economy, land-sea zone, institutional support, pollution, rent, ecological condition.

Problem statement and its connection with important scientific and practical tasks. Ensuring inclusiveness in the field of recreational nature management plays a special role in the system of economic development of the country and further integration into the European Union. Among the many environmental issues, beach areas occupy an important place - the environment of a set of valuable natural resources that are attractive for business development. Improving the quality of life is an important part of solving the socioecological and economic problem of society. Satisfaction of material and spiritual needs should be carried out not only by increasing the variability of services in recreation areas, but also by maintaining and improving the quality of the environment and human impressions. The current institutional framework is rather fragmentary in terms of administrative regulation of beach areas, including measures to eliminate their pollution. This leads to the impossibility of effective economic assessment of territories, preservation of their ecological status, and as a consequence prevents the pursuit of global economic trends.

Analysis of recent publications on the problem. The Water Code of Ukraine defines coastal areas as the space between land and water bodies located on both sides of the shoreline, composed of marine sediments and the activities of other natural or anthropogenic factors. [2]. In the Land Code, coastal areas are part of the beach area, around sea bays and estuaries and within the coastal protection zone of the seas, the function of which is to protect surface water bodies from pollution and clogging and preserve their water content [2].But in the legislative field there is no normative-legal act, which regulates the issues of beach areas, their use, relevant economic relations and issues of pollution.

The issue of pollution of marine areas is, first of all, a solution to the problem of eliminating marine litter. For the first time in the Ukrainian legislation about such kind of waste as sea litter is mentioned in 1995 in the Water code of Ukraine [1]. We are talking about the ban on dumping waste and litter into water bodies. In the same year in the Code of Merchant Shipping of Ukraine [3] it is determined that, as such, there is no responsibility for dumping litter during emergencies or port errors. However, already in 1996 in the Rules for the protection of inland waters and the territorial sea from pollution and clogging [4] emphasizes the mandatory registration of waste management operations. A more detailed procedure of possible cases during the stay in the internal sea waters and territorial sea of Ukraine of vessels and treatment of this type of waste is prescribed. In 1998, the Law "On Waste" was issued [5],in which the subject of waste is considered in detail. However, it somewhat duplicates the requirements for storage and disposal of waste within water protection zones and sanitary protection zones of water bodies, which are prescribed in the Water Code.

The category of "litter" is defined in the Rules of registration of operations with harmful substances on ships, sea installations and in ports of Ukraine [6] in 2001 and the procedure for registration of litter transactions is given. In the Regulations on the management system of safety of navigation on sea and river transport [7] in 2003 for the first time it is a question of maintenance of a necessary condition of base, territory and water area. Continuation of this topic is the Safety Rules for employees of vessels of the port and auxiliary fleet of fisheries (2007) [8], determining the work to eliminate pollution of the sea and port waters. In the same year, in accordance with the Rules for the Prevention of Pollution from Vessels of Inland Waterways of Ukraine [9] the system of equipping ships and all other vessels with technological schemes of litter collection and treatment and the rules of conduct of crew members as a result of detecting water pollution have been determined.

Today they are present in the legal framework:

- Strategies of protectection the environment from pollution and implement mandatory IMO instruments until 2022;
  - fulfillment of Ukraine's international obligations in the field of merchant shipping safety;
- -implementation of the provisions of directives and regulations of the European Union in the field of international maritime and inland water transport ("road map") [10];
  - -development of seaports of Ukraine for the period up to 2038 [11];
  - waste management in Ukraine until 2030 [12].

All documents were approved only about a year ago. Action plans and measures in accordance with these strategies have not yet been developed. In the regulatory framework among the action plans, there are only outdated documents:

- Emergency Action Plan on the Black Sea to the Protocol on Cooperation in Combating Pollution of the Black Sea by Oil and Other Harmful Substances as a Result of Emergencies [13],
- -National program for the protection and reproduction of the environment of the Azov and Black Seas [14]. The latest document is the Ship Waste and Cargo Residues Management Plan of the Yuzhny Administration, which is filled in detail with the necessary waste management measures. This port is certified according to ISO 14000 environmental management standards.

The economic side of this issue was first considered in 2009 through the "Methodology for calculating the amount of compensation for damages caused to the state as a result of violations of legislation on protection and rational use of water resources" [15]. This Methodology is aimed at the implementation of Directive 2006/11 / EC of the European Parliament and of the Council of 15 February 2006 on pollution caused by certain hazardous substances discharged into the aquatic environment. According to it, the procedure for determining the amount of compensation for damages caused to the state as a result of violation of legislation on protection and rational use of water resources has been established. In the Safety Rules during exploration and development of oil and gas fields in the Black and Azov Seas (2012) [16]. The concept of incinerators is first mentioned - waste incineration plants (weight and volume reduction), which are equipped with waste incinerators. Procedure for providing services to ensure the prevention and elimination of pollutant spills in seaports of Ukraine (2013) [17] determines the organization of reception of litter and waste from vessels, their

transfer to specialized enterprises for further treatment, establishes responsibility for the spillage of pollutants in the waters and on the territory of the seaport.

The latest legal act today is the Rules for the development of oil and gas fields [18], which determine the order of disposal and utilization of marine litter. These points are not described in sufficient detail, only in a few articles, so they need more detail and further research in the direction of waste management.

Allocation of previously unsolved parts of the general problem. The concept of spatial separation of shore and water in the works of Doctor of Economics Stepanov V.M. [19] characterized as a land-sea contact zone. In a broader sense, the contact zones include any active surfaces in the seas: systems such as riverestuary-sea, river-sea-strait-sea, hydrological fronts, upwelling, centers of interaction of ocean fields, waterice systems, bottom-natural ball of water. In table 1 you can see the variety of contact zones.

Characteristics of the land-sea contact zone

Table 1

| Contact area  | Scale    | Definition                                                                                                                                                |
|---------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seaside coast | 1 км     | Seaside coast – strip of the lithosphere surface, where traces of the ancient interaction of land and sea, formed at relatively higher levels than modern |
| Coast         | 10-100 м | The concept of "shore" includes a beach, a surf zone and a cliff                                                                                          |
| Tidal zone    | 1 м      | Covers a depth of up to 5 m                                                                                                                               |

Source: compiled by the authors on the basis [19, p. 9]

In the land-sea contact zone, various sectors of the national economy, maritime complex, which use the marine multifunctional resources of this area, including the coast-coast zone, can develop. It should be noted that land resources can be in state, municipal and private ownership and used by the owner or leased. But natural recreational resources remain state property in terms of rent. For a long time, natural recreational resources, including beach areas, were outside the scope of the economic evaluation system. Currently missing:

- -zoning of beach areas;
- -taking into account the environmental situation when calculating the cost of rent;
- -compliance with the social needs of different segments of the population;
- -providing benefits to entrepreneurs who have personally created recreation areas in declining coastal areas and maintain a high level of their environmental status:
  - -care, use and protection of the contact area as a whole.

The lack of a theoretical basis affects the imperfections of the regulatory framework.

**Formulation of research objectives (problem statement).** The purpose of the article is to reveal the characteristics of an inclusive approach and outline the components of the organization and development of beach areas. Formulation of criteria for creating an inclusive beach. Substantiation of introduction of principles of the organization of inclusiveness of recreational natural resources on an example of the beaches which have received the Blue Flag status.

An outline of the main results and their justification. In Ukraine, beach areas or part of them are mostly leased for a long time by various business entities. Lease agreements provide for the lease of "a complex of shore protection structures in the form of an artificial beach." However, the Law of Ukraine "On the improvement of settlements" [20] declares that beaches belong to the objects of improvement, and engineering constructions of coastal protection value, according to the legislation, cannot be rented.

An artificial beach is the result of the operation of shore protection structures, not the structure itself. On the territory of the beach area of the sea coast such structures are traverses, bumps, breakwaters. The main functional purpose of these buildings is to protect the coast, as well as the preservation and expansion of existing beaches. Therefore, the identification of beaches with buildings is incorrect. In addition, shore protection structures, as a rule, are on the balance of the executive body of city (village) councils and are communal property, not land.

More often land plots in the beach area are leased as communal property, in violation of the procedure provided by the Law of Ukraine "On Land Lease". That is, the budget of the city (village) does not receive the amount equal to the difference between the rent of the land plot of the coastal zone and the rent of the buildings

(traverses, bunks, breakwaters) [21]. The lessee claims only a sandy plot of land, but as part of the assessment, this area is not assessed as land, which significantly reduces its appraised value.

In addition, it should be emphasized that the contract between the tenant and the landlord should not affect the third party - vacationers on the beach. According to the Law of Ukraine № 233-IX of October 29, 2019 "... restriction in any way unimpeded or free access of citizens to the coast of the seas, sea bays, estuaries and islands in inland waters within the beach area, as well as to river banks, reservoirs and islands for general water use, except in cases provided by law entails liability ", » [22].

In a large number of cities (villages) of Ukraine in the rules of equipment and operation of beaches it is defined that beaches - formed by the nature or artificially created objects which are intended

- on the one hand for mass swimming of people (the area of the water area limited by the open sea by signs of a bathing zone with the adjoining site of the coastal territory made of beach material);
- -on the other hand these are active shore protection structures as part of landslide and landslide measures in areas where the bases of the slopes are located in contact with the sea water mirror, to protect the native shores, stabilize landslides, expand or maintain existing beaches and have limited use.

That is, the definition still emphasizes shore protection structures, not plots of land.

In particular, it is prohibited on shore protection structures, which are places of mass recreation:

- -damage and destruction of beach material;
- -conducting economic activities that affect or may affect the development of hazardous geological processes, natural healing factors and ecological balance;
  - -laying cables, including high-voltage underground cables;
  - pipelines, other communications;
- -construction of any buildings and other objects not related to the operational regime and protection of natural and therapeutic factors;
  - discharge of drainage and wastewater;
  - arrangement of car parks, their service points (repair, washing, etc.);
  - -installation of cesspools, accumulators of liquid and solid waste;
  - travel of vehicles not related to the maintenance of this area;
  - -use of deposits of medical resources [23].

We see contradictions - restrictions on economic activity are registered as for coastal protection constructions, and in practice use of a coastal strip is conducted as the land plot:

- -with permits for the construction of buildings and facilities that are not related to the protection of natural and therapeutic factors;
  - discharge of drainage and wastewater;
- -conducting economic activities that affect or may affect the development of hazardous geological processes, natural healing factors and ecological balance.

And most importantly - coastal protection structures are leased. The calculation of the value in all contracts is based on an independent assessment of the property and includes VAT. In the summer season - monthly payments increase by several tens of percent, which makes it possible to cover the tenant's expenses in a few weeks. It is clear that the beach business - is quite profitable.

If we are talking about the lease of beach areas, it can be noted that the calculation of the cost of renting beach areas does not include the environmental component, and this is important not only for conservation and rational use of natural recreational resources, but also to increase interest of vacationers and investors. After all, ecologically clean territory will benefit much more both from the point of view of receiving positive impressions and rest, and from economic. Therefore, to strengthen the economic interest of territorial authorities it is necessary to start using tax policy, rent payments based on economic assessment of natural recreational resources, taking into account the environmental component.

Among the practices and other measures for marine litter and waste management are the Environmental Program of Environmental Protection Measures in Yuzhny, Odessa region for 2017-2020 and a number of separate general measures that can be used to prevent pollution of marine areas and neutralization of pollutants. substances, as a result of possible negative cases. However, so far in Ukraine there are few beaches that have received the Blue Flag. Blue Flag is a leading EU program that promotes environmental awareness, sustainable management of beaches, berths and the development of tourist shipping around the world. They are located in the Odessa region - in the Black Sea, in Hrybivka, in Odessa - Caleton, Blach Sea Riviera Beach and Pier № 1.

Solving the problem of renting beach areas also requires regulation of the principles of inclusiveness in lease agreements. The world experience of inclusive beaches provides their accessibility and comfort in use for people with special needs. The specificity is that not only the beach and the marine environment are equipped

with special infrastructure, but also the hotel is designed for people with disabilities. In the city of Odessa today there are six beaches that have accessories for recreation for such people: Langeron, Dog, Dolphin, Caleton, Chkalovsky and Seagull.

However, the inclusive nature of recreational use of beach areas should be based on access to the free use of natural resources and their environmental friendliness. Inclusive use of beach areas should be based on the principles of the dialectic of anthropocentrism and the nature of centrism:

- -realization of human needs in rest and receiving impressions with observance of ecological use of natural resources;
- -development of high-quality jobs with the involvement of women, children, pensioners and people with disabilities;
  - openness to the tourism business;
  - -creativity;
  - -innovation;
  - -involvement:
  - partnership.

Assessment of the inclusiveness of nature use (beach areas) can be done using a number of criteria that determine the nature and compliance with the requirements of inclusion. In our opinion, they can be divided into three groups: economic, environmental and social (Table 2).

Table 2 Criteria for inclusiveness of recreational nature use (beach areas)

| Economic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Ecological                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Social                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - inclusion in the calculation of regulatory and monetary assessment of beach areas of the environmental component;  - increasing the level of value of natural resources under the beach areas, in order to rationally and effectively assess the land tax of these lands and rent;  - fines for pollution of the beach area, including marine environment.  - increasing the investment attractiveness of beach areas through the organization of information events: fairs, concerts, quest games, seminars, trainings, production of flyers, exhibitions, installations;  - variability of rent for business activities in beach areas depending on the quality of natural resources and care for the area (the higher the value of the resource - the higher the rent, the higher the environmental friendliness - the greater the possibility of using the rate of reduction);  - internationalization of external (negative) effects | - mandatory compliance with the Blue Flag criteria; - clean sanitary and hygienic seawater treatment equipment; - special containers for collecting plastic things, used bottles and metal cans for further processing; - increase of green areas; - increase of green technologies; - increasing the level of greening of transport infrastructure; - improving the quality of beach areas; - control over the accumulation of algae or other vegetation, except for areas specifically designated for this purpose; - improving the quality of the dynamic properties of the resource-ecological system of the biosphere: homeostasis, availability, survivability, stability, reliability. | <ul> <li>increasing the access of residents to the free beach area;</li> <li>increasing the interest of individuals in the preservation and development of cleanliness of beach areas;</li> <li>taking into account the needs of a group of people with disabilities (development and equipment of special beaches);</li> <li>compliance of the recreation environment with sociopsychological attitudes of the individual;</li> <li>creating a strategy for managing beach areas;</li> <li>increasing the scale of the free beach area for the public;</li> <li>securing beach areas for security;</li> <li>control of walking of pets, allocation of special areas of beach areas for their walking, swimming and swimming;</li> <li>convenient conditions for movement along the coast, equipped with special showers and changing rooms for people with special needs;</li> <li>conditions for convenient descent into the sea of people with special needs (sea ramps)</li> </ul> |

Source: author's development

Inclusive use of beach areas should include cleanliness not only of coastal areas but also of the marine environment. An urgent issue in the current conditions of development of innovative technologies is the use of seawater treatment equipment. After all, the destruction of algae and the capture of plastic is not the first year,

but the pollution of water resources includes not only these types of pollutants. Especially cases of pollution occur in the middle of the summer season, with an increase in the number of tourists and vacationers.

Assessment of natural recreational resources should be cost-effective and form a market environment in which beach areas will be used rationally and economically, characterized by sustainable development and protection of natural resources. The inclusiveness of beach areas with ecological cleanliness of beaches and marine environment, economic activity, social requirements should include the entire contact area.

According to the report on the research work of the candidate of chemical sciences Pavlenko M.Yu. (UkrSCES), in the North-Western region of the Black Sea on hydrological and hydrochemical biological and geographical features distinguish 26 ecosystems that provide basic ecosystem services. The development of methodological bases for assessing the impact of economic activity on marine ecosystems is particularly interesting [24]. The evaluation methods considered in this paper can be divided into four groups:

- 1. Analysis of the impact of maritime activities on the marine environment and marine ecosystem services, which includes an assessment of the waste of activities and an assessment of the loss of activities.
- 2. Assessment of the impact of economic activity on marine ecosystem services, which includes an assessment of the reduction in the cost of ecosystem services as a result of marine pollution.
- 3. Valuation of biological resources of marine ecosystems, which includes annual integrated valuation of ecosystem services for marine ecosystems, marine bioresources before and after pollution, cultural services of coastal areas, and recreational resources based on the use of rent exploitation of natural resources.
- 4. Assessment of damage to environmental services and biological resources from marine water pollution, which includes an assessment of the amount of damage to aquatic bioresources calculated for each type of bioresources.

You can get acquainted in detail with the methods in the work itself [24]. However, the assessment of ecosystems is always difficult in terms of complexity and taking into account all available links. In addition, assessing the ecosystem, we will not be interested in enterprises and marine complexes in overcoming negative phenomena. Therefore, we propose to direct the development of assessment methods to a broader comprehensive assessment of both the ecosystems themselves and enterprises and areas associated with them. Here are some suggestions for the above evaluation methods (Table 3):

Table 3 Proposals to improve methods for assessing marine ecosystem services and maritime activities

| Assessment methodology                                                                                                                                                                                                                                                                                                                               | Calculation                                                                                                                                                                                                                                                                                             | Suggestions of the authors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Analysis of the impact of maritime activities on the marine environment and marine ecosystem services                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |
| Estimation of waste intensity of activities. Waste capacity of activities can be determined by the ratio of the amount of waste generated to the total activity of the industry or region of marine nature. This indicator allows you to identify the most "dirty" in environmental terms.                                                           | W <sub>a</sub> = \frac{Vwaste}{Vactivity} where \frac{Wa}{Va} - waste-intensive activities; \frac{Vwaste}{V} - volume of waste generated as a result of economic activity within the maritime region, UAH; \frac{Vactivity}{V} - the corresponding volume of activity within the maritime region, UAH.  | The assessment allows to identify the most "dirty" production for the marine environment within the region, but does not give an idea of the pollution from other regions, ie external effects that can have a much greater impact (such as fertilizers in Ukrainian rivers and eutrophication of marine waters, etc.)                                                                                                                                                                                                    |  |  |  |
| Assessment of the impact of economic activity on marine ecosystem services                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |
| Estimation of reduction of cost of ecosystem services as a result of sea pollution. Carried out in two stages:  I - assessment of the ecosystem service cost before implementation the planned activity;  II - the amount of damage caused to the marine ecosystem service as a result of the planned or functioning economic activity is estimated. | Ci <sup>3</sup> = Ci – Vi where Ci <sup>3</sup> - cost of the i-th marine eco-service after pollution of the marine environment, UAH; Ci - cost of the i-th marine eco- service before pollution, UAH; Vi - economic damage caused to the i-th marine eco-service as a result of marine pollution, UAH. | Assessing the decline in the cost of ecosystem services leads to a decrease in the activities of related enterprises: $Cie^3 = (Ci - Vi) \Psi K_p$ $Rin^3 - \text{profitability of the enterprise due to the reduction of the cost of the i-th marine eco-service after pollution of the marine environment, UAH.  K_n \text{-profitability ratio of the enterprise } K_n = K_i \Psi K_q \Psi K_i  K_i \text{-image ratio; } K_\pi - \text{quality ratio; } K_\pi - \text{quality ratio; } K_\pi - \text{income ratio.} $ |  |  |  |

### Estimation of the value of biological resources of marine ecosystems

Evaluationofculturalservicesofcoastalareas-basedontherecreationalpotentialofthebeachbathing resource

 $R = S \cdot N \cdot T$ 

where **R** - number of "beachbathing" resources (R, man-days) S - beach area, ha; N - ecological and psychophysiological load of the beach, people / ha;

**T** - duration of the beach and bathing season, days.

 $Ee = R \cdot C$ 

**Ee** - economic effect of using the beach as a recreational resource:

**C** – the cost of one visit to the beach, UAH/people-days.

Assessment of the economic effect of ecosystem services should be based only on the implementation of additional services catering facilities, medical rehabilitation services (massage), water transport rental, entertainment facilities. Access to the ecosystem service itself (free stay on the beach, sunbathing and sea bathing) should be free of charge and not subject to economic evaluation. Purely ecosystem services are the basis that attracts to the creation of certain institutions enterprises, enables them to develop. But the payment for the use of public ecosystem services contradicts the principles of inclusiveness in nature management.

## Assessment of losses to environmental services and biological resources from marine water pollution

The amount of damage to aquatic bioresources is calculated for each type of bioresources

 $N = N^{1} + N^{2} + N^{3} + N^{4} + N^{5}$ 

where **N** - total amount of damage to marine biological resources, UAH; **N1** - the amount of damage from the loss of aquatic bioresources, UAH;

**N2** - the amount of damage from the loss of offspring of dead aquatic bioresources, UAH;

N3 - the amount of damage from the loss of growth of aquatic bioresources, as a result of the death of forage organisms (plankton, benthos), UAH;

N4 - the amount of damage from the deterioration of living conditions and reproduction of aquatic bioresources (loss of spawning and breeding sites, wintering, feeding areas, violation of migration routes, deterioration of hydrochemical and hydrological regimes), UAH;

**N5** - costs for restoration of disturbed state of aquatic bioresources, UAH.

Growth of aquatic bioresources (N³) is not always a positive phenomenon for ecosystems. For example, an uncontrolled increase in plant biomass productivity in water areas can lead to eutrophication, which negatively affects the quality of ecosystem services and even makes it impossible to use them. The same applies to the introduction of new species, the overreproduction of alien species, which diversify flora and fauna, but cause great harm to local species.

Source: based on [24]

According to official statistics, solving the problem of marine litter and cleaning of beach areas is developing on a large scale through volunteer work and some coastal maintenance utilities [25].

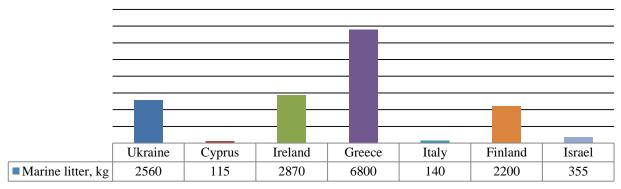


Fig. 1. Marine litter pollution of the territory of the countries for 2020, kg

Source: based on [25]

In Figure 1, you can see that the level of pollution in different countries does not depend on the area and he number of people involved in cleaning up. Ukraine, along with the EU countries, is characterized either by excessive environmental friendliness of the use of relevant natural resources, or still insufficient attention to this issue.

The inclusiveness of beaches, in the context of the possibility of visiting them by all segments of the population, should be characterized by the presence of a sufficient number of free areas for recreation. Free access to beaches in the European Union is prevalent in countries such as Bulgaria, Spain, Portugal, Croatia and others. Most beaches in Ukraine are municipal. However, many hotels have their own beaches, which are only allowed to guests. Here we return to the question of a clear definition of the concept of "beach", its boundaries, zoning of the coastal zone with the attribution of norms and nature of construction, as well as providing benefits to entrepreneurs who did not rent as a majority, but personally created recreation areas in coastal areas in decline, and maintain a high level of their ecological status.

As for tourist flows, which put a significant load on the territory of beach areas, experts note that according to the norms, beaches should accommodate 20% of the population at once, for example, for Odessait is more than 200 thousand people. At the same time, the city's coastline can serve about 200 thousand people at a time [26, 27].

And every year the number of tourists in the city increases. If in 2015 Odessa was visited by 1.5 million people, in 2019 - 3.2 million, 40% of whom are visitors from abroad. In addition, in the 1970s sandy beaches occupied 170 hectares, as of 2020 there were less than 56 hectares. According to other official estimates, the city's beaches can accommodate only 70 thousand people. As for hotel rooms in the city - their capacity is 32 thousand people.

According to the information of the Department of Ecology and Development of Recreational Zones of the Odessa City Council on the implementation of state policy goals in the relevant field of activity and indicators of their achievement within the budget programs for 2019 and currently operates the city program "Equality" for 2016-2019. Council of 03 February 2016 N 262-VII), within which was sent 354 948 UAH, of which: for the current repair of shady canopies of recreation areas for the organization of leisure for people with disabilities on the city beaches of the 11th century. V. Fontana and Luzanivka Hydropark - UAH 200,000. from the general fund.

At the request of the Department of Ecology and Development of Recreational Zones of the Odessa City Council, the project "Reconstruction of the beach for people with disabilities (11th century V. Fontana) from a special fund (development budget) in the amount of 154 948 UAH.

It is clear that inclusiveness involves improving the quality of life - satisfaction of the population with their lives in terms of various needs and interests, covering characteristics and indicators of life as an economic category, recreation, social security, law enforcement and respect for the law, environmentally friendly environment, free time and the opportunity to use it by getting vivid impressions, a sense of calm and comfort.

In accordance with the above to improve the regulatory framework for beach management, we propose to make the following changes:

- addition of the list to the Law "On Lease of State and Communal Property";
- -smendments to the Law "On the improvement of settlements" providing a definition of "beach" and its boundaries, to determine the mechanism of their use in economic activities, as well as the definition of beaches as leased objects;
- -providing a clear definition of the features of recreational facilities in the process of their economic operation, especially taking into account their ecological status in the Law "On Environmental Protection";
- -mandatory zoning of recreational beach areas with the definition of regulatory loads for each of the zones;
  - review of rental methods;
- -creation of a register of tenants, which will collect all data on offenses, terms of lease and provision of services;
- -creation of a register of promising beaches for rent, with the prescribing of requirements and obligations to the tenant for landscaping;
- -improvement of the mechanism of assessment of natural recreational resources taking into account the ecological component;
  - -introduction of a system of differential rent for natural resources, beaches;
  - -development of options for harmonization of the regulatory framework.

Summarizing the above, we can conclude that the management of lease relations for beach areas and marine litter with the preservation of clean beaches do not have the appropriate legal basis. Not all beach areas

in Ukraine are characterized as inclusive. After all, inclusiveness is a process of increasing access to opportunities for natural and material resources, monetary resources, realization of human potential, fair distribution of labor results of all individuals and different segments of the population. Only at the national level are appropriate measures in place, but the regional and local levels are characterized by the lack of specific action plans and measures to address the issue of marine litter and marine litter. There is a legal basis for achieving cleanliness of the maritime spheres, but mainly it concerns transport, housing and communal and port activities, so the legal framework for beach management needs to be changed and improved.

Conclusions and perspectives of further research. The authors consider the legislative basis, strategies and action plans for the protection of the marine environment of Ukraine and its use and substantiate that there is no scientific theoretical basis, and in the legislative field there is no single legal act governing beach areas, their pollution, relevant economic relationships. The concept of land-sea contact zone has been studied and it has been determined that various sectors of the national economy and the maritime complex can develop in this zone. However, there is no zoning of beach areas and their ecological condition is not taken into account when calculating the cost of rent. At an insufficient level - compliance with the social needs of different segments of the population and ensuring the care, use and protection of the contact area as a whole.

The authors determined that beach areas in Ukraine are mainly leased for a long time by various business entities and leased as communal property, in violation of the procedure prescribed by law. The rules of use of shore protection structures, which are places of mass recreation, are presented and contradictions are revealed in them as restrictions in conducting economic activity as for shore protection structures, and in practice - use of the coastal strip as a land plot. It is substantiated that it is necessary to start using tax policy, rent payments based on economic assessment of natural recreational resources, taking into account the environmental component.

The authors declare the principles of inclusive use of beach areas: the dialectic of anthropocentrism and nature-centrism, namely the realization of human needs for recreation and impressions with respect to the ecological use of natural resources; development of high-quality jobs with the involvement of women, children, pensioners and people with special needs; openness to the tourism business; creativity; innovation; involvement; partnership.

The assessment of the inclusiveness of nature use (beach areas) is substantiated through a number of criteria that determine the essence and compliance with the requirements of inclusion. The state of pollution of beach areas, methods of assessing the impact of economic activity on marine ecosystems, the state of tourist flows and proposals are presented.

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