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РЕГУЛЮВАННЯ ЕКОЛОГО-ЕКОНОМІЧНИХ РИЗИКІВ І ВІДПОВІДАЛЬНІСТЬ ЗА ДОБРОБУТ НАСЕЛЕННЯ: НА ПРИКЛАДІ УПРАВЛІННЯ ВІДХОДАМИ²

Актуальність. Екологічна ситуація має особливе загострення у формі екологічних, зокрема, економіко-екологічних конфліктів, які в Україні протягом останнього десятиліття набули значного поширення та збільшилися чисельно: «буриштинові» конфлікти на заході та в центрі країни; антагоністичні дії на її сході, що мають екологічні наслідки та в тому числі спричинені чинником природних ресурсів. Особливе місце посідають конфлікти, пов'язані з негативним управлінням побутовими відходами (наприклад, у Львові) та небезпечними промисловими відходами (наприклад, у місті Шостка Сумської області). Ця проблема не знаходить свого позитивного вирішення внаслідок того, що свідомо ігноруються інтереси основного реципієнта наслідків дії еколого-економічних процесів – людини. Необхідний гуманістичний підхід і антропоцентричний погляд: об'єктивно уникнути наявності екологічних питань неможливо, але ризикувати життям і здоров'ям людей через екологічні наслідки економічної діяльності ні держава, ні суб'єкти господарської діяльності не мають морального права.

Мета та завдання. Мета дослідження полягає в обґрунтуванні теоретичного аналізу еколого-економічних ризиків у контексті їх регулювання в напрямку підвищення добробуту індивіда та населення загалом і, відповідно, перегляду під таким кутом зору ролі держави та суспільства у вирішенні конфліктних еколого-економічних питань, зокрема, на прикладі управління відходами, на основі принципу відповідальності.

Результати. У статті розглянуто теоретичні положення, що визначають роль держави та суспільства в регулюванні конфліктних еколого-економічних питань (зокрема, в сфері поводження з відходами через упровадження маловідходних технологій), що впливають на добробут людей. Обґрунтована необхідність включення екологічної складової в структуру добробуту поряд із очікуваною тривалістю життя, доступністю та якістю медицини та освіти, ВВП на душу населення тощо. Зазначена проблема може знайти своє позитивне вирішення, якщо не ігноруються інтереси індивіда як основного реципієнта наслідків дії еколого-економічних процесів. Розкрито протиріччя між необхідністю гуманістичного підходу і антропоцентричного погляду, з одного боку, та об'єктивною неможливістю уникнення наявності конфліктно-екологічних питань і в принципі допущення ризику життям та здоров'ям людей через їх наслідки, з іншого. Запропоновано сукупність економічних, політико-управлінських, соціальних, демографічних і культурних показників, які потрібно враховувати при проведенні оцінки ролі держави та суспільства в регулюванні еколого-економічних ризиків у напрямку підтримання добробуту населення. Етапи механізму такого регулювання розглядаються як такі, що включають ідентифікацію еколого-економічних конфліктних ситуацій, обґрунтування комплексності регулювання еколого-економічних ризиків, прогнозу оцінку екологічних збитків, заподіяних унаслідок неврегульованих еколого-економічних ризиків, а також формування рекомендацій щодо створення та подальшого розвитку механізму їх регулювання.

¹ В рамках НДР «Корпоративна соціально-екологічна відповідальність для сталого розвитку: партнерство стейкхолдерів реального, фінансового та державного секторів економіки» (номер держреєстрації 0117U003933)

Висновки. Зроблено висновок про те, що роль держави полягає в створенні рамок, які обмежують еколого-економічну діяльність, яка спричиняє зниження рівня добробуту населення; та мотивує до пошуку нових способів виробництва та менеджменту, що в умовах більш жорсткої державної політики щодо забезпечення добробуту населення дозволяє досягати бажаного рівня економічної ефективності. Суспільство, зі свого боку, відіграє роль замовника змін у такій політиці. Адекватне підтримання добробуту вимагає спільних дій держави та суспільства щодо регулювання еколого-економічних ризиків. У сфері управління відходами вирішення цього питання вимагає, передусім, упровадження маловідходних технологій і підвищення екологічної свідомості виробників і споживачів продукції, яка пов'язана з утворенням відходів. Іншими словами, підвищення добробуту населення залежить також і від того, наскільки відповідально всі зацікавлені сторони будуть ставитися до проблеми відходів, її екологічної та економічної сторін.

Ключові слова: екологічна складова добробуту, екологічний конфлікт, еколого-економічні ризики, регуляторний механізм, відповідальність, управління відходами.

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REGULATION OF ECOLOGIC-AND-ECONOMICAL RISKS AND THE RESPONSIBILITY FOR HUMAN WELL-BEING: FOR EXAMPLE OF WASTE MANAGEMENT

Topicality. The ecological situation has a special aggravation in the form of environmental, in particular, economic-environmental conflicts, which in Ukraine and other countries during the last decade have become widespread and have increased numerically: “amber” conflicts in the west and in the center of the country; antagonistic actions on its east, which have environmental consequences and, including that, caused by a factor of natural resources. Particularly, there are conflicts related to the negative management of domestic waste (for example, in Lviv) and hazardous industrial waste (for example, in Shostka of the Sumy region). The problem does not find its positive solution as a result of deliberately ignoring the interests of the individual as the main recipient of the consequences of the ecological-economic processes. Required humanistic approach and anthropocentric view: it is impossible to objectively avoid the presence of environmental issues, but to risk the lives and health of people through the environmental consequences of economic activity, neither the state nor business entities have no moral right.

Aim and tasks. The objective of the research is to substantiate the theoretical analysis of ecological and economic risks, in the context of their regulation towards increasing the well-being of the individual and the population in general and, therefore, viewing from this angle the role of the state and the society in resolving conflicting environmental-economic issues, in particular, on the example of waste management, on the basis of the principle of responsibility.

Research results. The theoretical positions defining the role of the state and society in the regulation of conflict environmental-and-economic issues (in particular, in the field of waste management through the introduction of low-waste technologies) affecting human well-being is considered in the article. The necessity of incorporating the environmental component into the well-being structure along with the expected life expectancy, availability and quality of medicine and education, GDP per capita, etc. is substantiated. This problem can be resolved positively, if the interests of the individual as the main recipient of the consequences of the environmental-and-economic processes are not ignored. The contradiction between the necessity of a humanistic approach and anthropocentric view is disclosed, on the one hand, and the objective inability to avoid the presence of conflict-environmental issues and fundamentally the risk of human life and health through their consequences, on the other. The complex of economic, political-and-managerial, social, demographic and cultural indicators is proposed that should be taken into account when assessing the role of the state and society in regulating environmental-and-economic risks in the direction of maintaining human well-being. Stages of the mechanism of such regulation are considered as that including identification of ecological-

and-economic situations of conflict, substantiation of complexity of regulation of ecological-and-economic risks, forecast estimation of environmental damage caused as a result of unregulated ecological-and-economic risks, as well as formulation of recommendations for the creation and further development of a mechanism for their regulation.

Conclusions. *It is concluded that the role of the state is to create a framework that limits the ecological-and-economic activity, which leads to a decrease in human well-being; and motivates the search for new ways of production and management, that in a more strict state policy for ensuring human well-being allows to achieve the desired level of economic efficiency. Society from its side plays the role of the consumer of changes in such a policy. Adequate maintenance of welfare requires joint actions of the state and society in regulating ecological-and-economic risks. In the field of waste management, the solution of this issue requires, first of all, the introduction of low-energy technologies and increasing the environmental awareness of producers and consumers of products, which is associated with the generation of waste. In other words, increasing the well-being of the population also depends on how responsible all the parties concerned will deal with the issue of waste, its environmental and economic aspects.*

Keywords: *ecological component of well-being, ecological conflict, ecological-and-economical risks, regulatory mechanism, responsibility, waste management.*

Problem statement and its connection with important scientific and practical tasks. The issue of the relationship between the ecology and the society, the ecology and the economy has become so firmly integrated into our lives and the scientific sphere and at the same time does not actually lose its relevance, which unwittingly causes *dejavu* and, perhaps, even a frustration feeling in the context of the possibilities for the adoption and implementation of effective management decisions in any sphere and at all levels of socio-economic relations: from individual to state. This situation, unfortunately, is typical of many countries of the world, including Ukraine. Special aggravation it gets in the form of environmental, in particular, economic-environmental conflicts, which in our country during the last decade have become widespread and have increased numerically: “amber” conflicts in the west and in the center of the country; antagonistic actions on its east, which have environmental consequences and, including that, caused by a factor of natural resources, in particular, deposits of shale gas; local conflicts in rural areas associated with the uncertainty of many aspects of the mode of use of shared natural wealth, such as water in ponds, pastures in the ravines and in recreation areas on the possibilities of relaxing on the beach etc. Particularly, there are conflicts related to the negative management of domestic waste (for example, in Lviv) and hazardous industrial waste (for example, in Shostka of the Sumy region). Undoubtedly, all these and other similar conflicts have different destructive potential, but in general the picture in the context of the country shows a very threatening situation and, accordingly, the presence of ecological and economic risks, that is, the high probability of environmental damage due to environmental pollution and damage / loss of natural resources. In our opinion, the above-mentioned problem does not find its positive solution as a result of deliberately ignoring the interests of the individual as the main recipient of the consequences of the ecological-economic processes. That is, staging an answer should be sought in the value orientations of the interrelation of environmental, social and economic policies in the state. Required humanistic approach and anthropocentric view: it is impossible to objectively avoid the presence of environmental issues, but to risk the lives and health of people through the environmental consequences of economic activity, neither the state nor business entities have no moral right.

Analysis of recent publications on the problem. The scientific solution to issues related to ecological and economic risks are devoted the works of such scholars as P. Pritchard [1], I. Lerche and E. K. Paleologos [2], M. O'Brien [3] and others. In the works of J. Hannigan [4], P. Kumar and B. S. Reddy [5], P. Dasgupta [6], as well as M. Ya. Lemesheva [7] etc., the results of the analysis of aspects of the well-being concept are presented. The works of such authors as B. Arts, P. Leroy [8], R. F. Durant, D. J. Fiorino and R. O'Leary [9], A. Jordan, R. K. W. Wurzel, A. R. Zito [10] reveal regulation issues in the ecological-economic sphere and environmental policy of the state. In particular, in [10, p. 2-4] explored the deployment of “new” instruments of environmental policy, namely environmental taxes and other market instruments, voluntary agreements; it was noted that environmental taxes are one of the main sources of receipt of national budgets in the countries of the Organization for Economic Cooperation and Development, which is about seven percent of the total state revenues.

Allocation of previously unsolved parts of the general problem. However, in our view, issues related to the definition of the role of the state and society in regulating the ecological and economic risks towards maintaining the welfare of the population poorly investigated and therefore require further development.

Formulation of research objectives (problem statement). In terms of the above the objective of the research is to substantiate the theoretical analysis of ecological and economic risks, in the context of their regulation towards increasing the well-being of the individual and the population in general and, therefore, viewing from this angle the role of the state and the society in resolving conflicting environmental-economic issues, on the example of waste management, on the basis of the principle of responsibility.

An outline of the main results and their justification. In general, ecological and economic risks can be considered, in particular, as the consequences of relevant conflict situations both in their active and latent forms. However, in order to prevent the amorphous nature of the research object (due to the consideration of any ecological and economic processes as conflicts almost leveled the possibility of quantitative evaluation, including criteria for the probability of negative / destructive consequences / causing environmental damage) and clearly define its limits, – it is necessary to specify exactly what we mean by ecological-economic risk.

In our previous studies [11], under the latter (in the wording – “the risk of an environmental conflict”) meant that: a missed opportunity to get the maximum effect by the subjects of ecological and economic activity / participants of the environmental conflict in accordance with the specific situation of the environment due to the destructive effects caused by such conflicts to the affected party of the conflict. Herewith, the interconnection “environmental risk – environmental conflict” has two main aspects: firstly, environmental risk - as a probability of negative technogenic changes in nature – can lead to environmental conflict; secondly, in the context of the study of environmental conflicts, it is expedient to intensify the focus on the environmental risk of the destructive effects of such conflicts.

This definition we will take and as a basis of the relevant issues study in the context of their relationship with socio-economic category of “wellbeing”; at the same time, we consider the conflict from the point of view of its initial social nature and in its broad understanding.

Accordingly, ecological and economic risks can also be seen in their broadest sense (as the risks of any economic activity with negative environmental consequences) and in the narrow sense (indicators of the onset of threshold ecological and economic states).

Opinions on the most susceptible issues of the category of wellbeing outlined in the work of scientist-classic M. Ya. Lemyeshev [7, p. 77-78] are relevant today. In particular, it is noted that at the state level the task of improving the wellbeing of people to a qualitatively new level is declared. To do this, it is necessary to ensure the level and structure of the consumption of material socio-cultural benefits, “... which will most closely correspond to the goals of the formation of a harmoniously developed, spiritually rich person ...”.

However, it is rightly noted that the main thing is the realization of the declared task in practice, rather than the beautiful slogans and the complete irresponsibility of the state and economic actors, which eventually leads to “... destruction of nature and pollution of the environment, ... the growth of morbidity and mortality of people, ... decline of the wellbeing of society in general”.

The topic of well-being in its combined economic and social aspects, as well as the relationship with environmental load issues, is elucidated in detail in [12, p. 287-290]. “When the future of humanity is discussed ... it is useful to define two concepts: human well-being and environmental load (ecological footprint) ... To determine these parameters numerically – a very difficult task ... Human well-being increases when a person is more satisfied with his / her life, while it does not cause the reduction in the well-being of others.” The authors consider these two concepts as parallel. Herewith, the interconnection between them reflects through the ultimate goal of mankind, which is achieved through increasing the welfare of a person and at the same time reducing the ecological load to the minimum possible value.

For its part, the integral indicator of the alternative set of traditional indicators, which measures the welfare of the population, first of all, the GDP per capita and the expected life expectancy, is mentioned. This is about the quality of life index, which includes the following components: overpopulation, food, material consumption and environmental pollution.

On the basis of these ideas, in our opinion, it is necessary to review the relationship between the well-being and the ecological component of human life through the concept of ecological and economic risk (Fig. 1).

In the work [4, p. 120-121] ecological risk is considered in its cross-national perspective; in particular, it is emphasized that “designing of risks” is different in different countries, taking into account such factors as the organization of political and administrative structures, historical and cultural traditions, etc. National political structures take into account the environmental conditions differently, which can be defined as risky and those that subject to research.

According to the conclusions in the paper [13, p. 190-191], in comparison with the “free good”, the total ownership of “common goods” such as national parks, beaches, forests, etc. in Ukraine does not contribute automatically to free behavior of subjects of economic relations (players), as it is envisaged in the game theory. It's about cooperative goods, the specifics of which is based on the collective conditions of their use in the regulation of certain codes of conduct, which are determined by mutual consensus of the players - the community of users. This requires a clear understanding of the various forms of sharing of limited natural resources: from rural communities to traditional communities that manage fishing grounds, pastures and mountain pastures in accordance with the classical principle of shared use – to cooperation in modern communities, in particular, polycentric networks of cooperation, horizontal unions between municipal and other public authorities, private associations and companies, as well as international environmental regimes for the protection of global ecological pools.

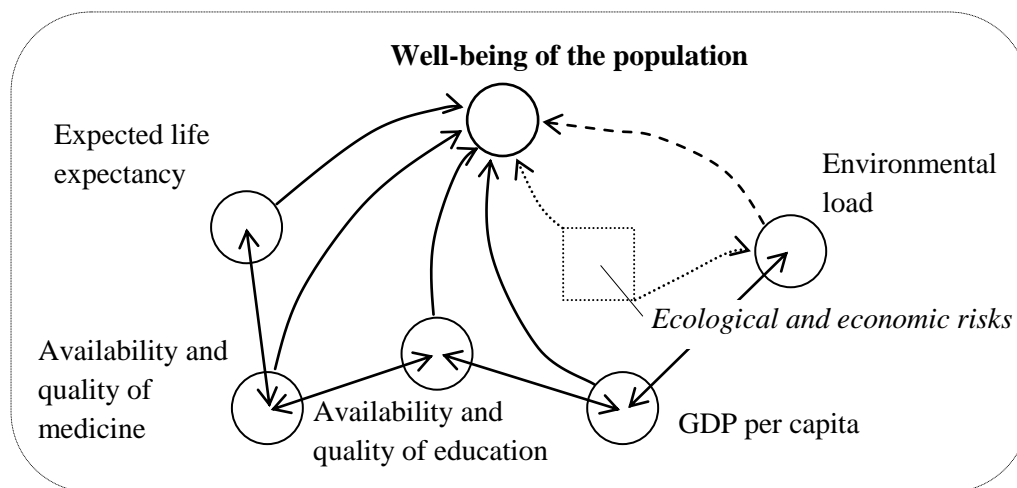


Fig. 1 Ecological and economic risks in the structure of interconnections between the components of well-being

Source: Developed by authors

In one of the most crisis fields reflecting the magnitude of environmental and economic risks and threats to public health, in the field of waste management, a fundamental solution to the problems of resource saving and environmental protection allows the implementation of fundamentally new low-waste and waste-free technological processes and production feedstock to final product. Fundamentally new technological processes and production are the basis of the waste containment strategy, which is currently undergoing significant development, and this direction will have to play a decisive role in the future. However, if the expansion of waste consumption requires addressing primarily organizational issues, then the success of a waste-free production strategy will depend on the resolution of scientific and technical problems, which requires significant costs for research and restructuring of production across whole industries. The existing low-waste and non-waste technological processes and production prove the promise of this direction [14].

Thus, the concept of waste-free production is often considered as the most effective means of solving any environmental problems in the field of waste management. People who traditionally trust science sometimes believe that the most difficult issues of healing, for example, the atmosphere, which require considerable labor costs, can be relatively simply solved with the help of waste-free technologies. But practice shows that all this is not so simple. According to scientists [15, p. 75-90], “waste-free production, which contains the integrated use of raw materials and waste disposal, allows for certain conditions for its provision. In general, such conditions can be represented in the form of three components, namely: technology, organization and economy.”

However, even today, at the end of the first stage of the country's transition to market-based business management methods, it can be stated: “... practice shows that waste-free production is most effective when the processes of processing raw materials, the generation of waste and their disposal can be combined in one process. However, since in most cases these processes are broken off both in time and in space, the formation of waste-free production within the framework of traditional organizational structures is, as a rule,

ineffective. Therefore, the solution to the problem of forming waste-free structures is seen in the choice of progressive forms of organization of production, which radically change the nature of economic interrelations. First of all, it is about the forms of organization of production, which are focused on the integrated use of natural resources, which is caused by the complexity of mineral resources ” [15, p. 126-127; 16].

The strategy of waste-free production is in line with the concept of substitution, which means the replacement of one material (process, device, technology) with another. Substitution is an evolutionary process due to lower cost, the functional advantages of the material being introduced (the process) over the replaced [17].

Whatever high degree of waste-free would not reach technological processes and production, as well as their cooperation on a regional and intersectoral basis, the creation of waste-free production at the national economic level is impossible without the recycling of materials from end-use products [18].

Another factor of environmental and economic risk associated with the field of waste management is the lack of resources. The practice of management shows that in many ways this deficit is artificial. Today, huge amounts of resources called “waste” are dumped in a landfill. Huge money is being spent on somewhere to take out an avalanche of ever-growing waste. And at the same time, even more money is spent on the extraction of valuable natural raw materials, without which it is quite possible to do if waste is used.

In other words, the removal, burying or disposal must be replaced at their recycling. According to Ukrainian legislation (the Law of Ukraine “On Waste”, Article 2), recycling should be understood as the use of waste as secondary material or energy resources. In contrast, waste deletion is defined as carrying out waste operations that do not lead to their disposal; waste neutralization – the reduction or elimination of hazardous waste by mechanical, physico-chemical or biological treatment; waste burial – the final disposal of waste when they are disposed of in designated areas or at facilities in such a way that the long-term adverse effects of waste on the environment and human health do not exceed the established standards; waste disposal – storage and burial of waste in specially designated places or objects [19].

It is clear that the problem of waste recycling is associated with the need to solve a large number of technical, structural (which reflect the inter-sectoral nature of use), organizational and economic problems. Moreover, these problems vary considerably in each of the many types of waste [16]. In general, environmental and economic risks in the field of waste management, in particular with regard to maintaining the well-being of the population, can be minimized under the condition of not only responsible regulation, but also the responsible behavior of all those involved and interested both in improving the quality of the natural environment and in obtaining positive economic results, when applying low-waste technologies.

Analysis of the structure of political coordinating mechanisms in the field of resolving conflicting environmental and economic issues in work [8, pp. 47] is carried out within the framework of the following four dimensions:

- players and their coalitions that are included in the political sphere;
- resources that are distributed among players, leading to disagreements in power, which extends to the mobilization and deployment of available resources and the determination of political vectors;
- the rules of the game are implemented in practice, in terms of formal procedures for the adoption and realization of decisions, as well as informal rules of interaction between players;
- existent current political discourses, which entail the views and narratives of the players (norms, values, problems and approaches to decisions).

As it noted above, consideration of environmental conflicts is important when investigating ecological and economic risks. In addressing the latter, in particular, by conducting negotiations it is recommended to take into account the following provisions [9, p. 330]:

- participation should be voluntary for all participants involved in a conflict situation;
- the parties or their representatives should have the opportunity to participate directly in the process of resolving the conflict;
- any participant and all participants in general should be able to abandon the negotiation process and seek solutions through a more formal process, such as judicial practice;
- the neutral party should not have the formal authority to impose the outcomes of the conflict, its mission is to help the parties to achieve their own results as a result of the negotiations;
- the completion of the conflict resolution process is the agreement with the outcome of the negotiations or other means of reaching a consensus among its participants.

Consequently, on the basis of the foregoing and the recommendations set forth in the papers [3; 8; 20, p. 176-184], in our opinion, when assessing the role of the state and society in regulating ecological and economic risks in the direction of maintaining the well-being of the population, it is necessary to take into account such indicators (calculated both on the country in general and on its territorial breakdown according to ecological criteria, for example, criterion of ecological load, as well as in the places of localization of active environmental conflicts):

1. Economic and political and administrative:
 - the amount and growth of GDP per person;
 - the level of employment and the percentage of employed in the total population;
 - the reception of state funds to the aid fund for the affected areas as a result of extraordinary environmental and man-made events;
 - the level of prices and incomes of the population;
 - the number of petitions (registered, approved and those for which practical actions started) per 1 thousand of population during the year;
 - the state programs: the number of new programs and the number of medium-term programs per 1 thousand of population during the year; the total annual expenditures for new or expanded government programs or activities per person.
2. Social, demographic and cultural:
 - the level of education;
 - the available housing stock, as well as the quality of utilities;
 - the level of medical care, including the amount of annual expenses of the state for medical services per one person;
 - the total annual expenditures on public transport per person;
 - the level of quality of recreational services;
 - population growth: natural and due to migration;
 - the degree of urbanization;
 - the level of poverty: the percentage of families with the incomes below the official poverty level; the percentage of families receiving subsidies from social security funds, etc.

Herewith the quantitative analysis of ecological and economic risks also includes mathematical and statistical provisions, in particular, the theory-game approach [21]. The game theory, which applies not only to the directions of the new political economy and is an integral part of the theory of making managerial decisions, but also applies to mathematical concepts, is necessary to obtain real results in the future as a result of the research of environmental contradictions in economic systems.

A wide view on ecological and economic risks in the context of an analysis of the role of the state and society in their regulation to improve the well-being of the population covers the stages from the actualization of such a problem – to the creation of the appropriate regulatory mechanism for decision-making, namely:

- identification of ecological and economic conflicts and associated with them social, political and other problems;
- determination of the level of potential conflict of ecological and economic situations;
- forecasting the size of the risks of potential ecological and economic conflicts;
- the substantiation of necessity and complexity of regulation of ecological and economic risks;
- mathematical modeling of the process of regulation of ecological and economic risks;
- analytical assessment of the impact of ecological and economic risks on the well-being of the population;
- predictive assessment of environmental damage caused by unregulated ecological and economic risks;
- formation of recommendations for the creation and further development of a mechanism for regulating ecological and economic risks.

Conclusions and perspectives of further research. As a result of the research, it can be concluded that the role of the state is to create a framework that, on the one hand, restricts the activities of economic actors, which leads to a decrease in the welfare of the population due to pollution of the environment and deterioration of the quality of natural goods; and on the other hand, when providing security in its economic,

social and environmental aspects, motivates business entities to find new ways of production and management, which, in a more stringent state policy for ensuring the well-being of the population, can achieve the desired level of economic efficiency. The society, for its part, plays the role of the customer of changes in such a policy, taking into account the interests of individuals and social groups in view of the prospects for the development of a civilized world in which human health and life are the priority of all players in any field of social relations. Adequate maintenance of welfare requires joint actions of the state and society in regulating ecological and economic risks. In the field of waste management, the solution of this issue requires, first of all, the introduction of low-energy technologies and increasing the environmental awareness of producers and consumers of products, which is associated with the generation of waste. In other words, increasing the well-being of the population also depends on how responsible all the parties concerned will deal with the issue of waste, its environmental and economic aspects.

Subsequent studies are related to more thorough research and quantitative assessment of the impact of environmental conflicts, in particular, on waste management, on the welfare as an integrated socio-economic category.

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