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PROBLEMS OF INTERACTION BETWEEN GOVERNMENT AND SOCIETY ON ECOLOGICAL SAFETY IN KHARKIV REGION (UKRAINE)

The issue of the environmental safety is extremely important for rural areas of Ukraine. The resilience of Ukraine's ecosystem is affected by catastrophic pollution of air, water, and soil. This is due to the excessive concentration of the chemical, oil, and gas industry facilities, the Chernobyl accident in 1986, the problems of ammunition production, its storage and destruction, and so on.

However, not only in Ukraine but also in other countries there are signs of a global environmental crisis. Despite the huge scientific achievements and the high level of new technologies, ecosystems around the world are quite vulnerable in terms of environmental security.

In Ukraine, irrational use of natural resources, water basins, and agricultural lands can be observed. The system of household and industrial waste management is inefficient. The fighting caused by Russian aggression and continuing in the eastern territories of Ukraine since 2014 also has a negative impact on the ecological state of the environment.

This situation has led to the intensification of social movements to protect the environment in Ukraine and the Kharkiv region, in particular. However, in Ukraine, there have been frequent cases when rural authorities have ignored public initiatives to protect the ecosystem. This led to environmental protests from the public. For example, in recent years, there have been many protests in the Kharkiv region related to the catastrophic pollution of the Uda River, which has suffered the greatest anthropogenic pressure due to the polluted water discharge. Finally, government officials approached the public to support important environmental initiatives aimed at addressing pressing environmental security issues for Kharkiv's rural residents.

In general, the creation of effective communications and cooperation of the Kharkiv authorities with the residents of rural areas as to environmental safety can create conditions for sustainable development of rural areas.

Keywords: power, society, ecological safety, rural areas, Kharkiv, Ukraine.

Introduction. The issue of environmental safety is extremely relevant for rural areas of Ukraine and Kharkiv region, in particular. The sustainability of the ecosystem of Ukraine is influenced by a group of various factors: catastrophic pollution of air, water and soil. This is due to the excessive accumulation of chemical and oil and gas industry facilities, the Chernobyl accident in 1986, the problems of ammunition production, its storage and destruction, and so on.

In Ukraine, an irrational use of natural resources, water basins, agricultural lands can be observed¹. The system of household and industrial waste management is inefficient. The fighting caused by Russian aggression and continuing in the eastern territories of Ukraine since 2014 also has a negative impact on the ecological state of the environment².

¹ Остафійчук, Я. (2014). Соціоекологічні проблеми розвитку сільських територій: сучасний вимір та перспективи вирішення. *Соціально-економічні проблеми сучасного періоду України*, 3, 379-387. <[http://ird.gov.ua/sep/sep20143\(107\)/sep20143\(107\)_379_OstafiychukYV.pdf](http://ird.gov.ua/sep/sep20143(107)/sep20143(107)_379_OstafiychukYV.pdf)> (2022, February, 20).

² *Стратегія національної безпеки України, 2020* (Верховна Рада України). *Офіційний сайт Верховної Ради України* <<https://zakon.rada.gov.ua/laws/show/392/2020#Text>> (2022, February, 21).

Rural areas of Kharkiv region, located in the northeast of Ukraine, also suffer from air, soil, water and other pollution. Issues of radiation safety for rural areas of Kharkiv region are problematic as well.

The issue of river pollution is also a big problem for rural areas of Kharkiv region. After all, this region has an extremely low supply of water resources, being on 24th place among the regions of Ukraine on this indicator¹.

Unfortunately, in recent years there has been catastrophic pollution of the Uda River, which is a tributary of the largest river in Kharkiv region – the Siverskyi Donets. The water resources of the Uda River are used by many territorial communities in rural areas of Kharkiv region. The Uda River suffered the greatest anthropogenic pressure due to the discharge of polluted water. That is why in recent years in Kharkiv region there have been many environmental protests related to the pollution of this river.

In general, environmental problems have led to the intensification of social movements to protect the environment in Ukraine and Kharkiv region, in particular. However, there have often been cases when rural authorities ignored public initiatives to protect the ecosystem.

Accordingly, the problem of forming effective practices of interaction between the authorities and the public for the success of environmental initiatives in rural areas is becoming important, which determined the topic of the research.

The methodological basis of the study was the use of methodological approaches from different areas of socio-political and public management knowledge to analyze the problems of environmental safety in rural areas of Kharkiv region of Ukraine.

The article uses general scientific methods of cognition in the analysis of environmental threats in rural areas of Kharkiv region, in particular, empirical, analytical, comparative and descriptive.

In order to identify the key features of the concept of «environmental security», we have done analysis of the legal framework of Ukraine, in particular, «Environmental Security Strategy and Adaptation to Climate Change until 2030»² and «National Security Strategy of Ukraine»³ and others⁴.

Latest «Environmental Passports» of Kharkiv region were analyzed to identify the main environmental threats to rural areas of Kharkiv region⁵.

In order to investigate practices of cooperation between the public and the authorities in finding and eliminating environmental threats in rural areas of Kharkiv region (on the problem of pollution of the Uda River), a content analysis of sites of Kharkiv Regional State Administration, Kharkiv Regional Council and key media resources was carried out.

Thus, **the main purpose** of the article is to analyze problems of interaction between government and society on ecological safety in Kharkiv region, Ukraine.

The main text. Ecological safety of rural areas is extremely important for modern Ukraine. Ecological compatibility means the absence of threats to humans and the environment. For the safety of the environment, the legislation establishes certain criteria, standards, norms, in accordance with which the state of the environment is assessed. We are talking primarily about the absence of environmental pollution (its purity), its resource intensity (depletion), environmental sustainability, and others.

Environmental safety is one of the highest priorities for human life. Unfortunately, in Ukraine, as it is stated in the National Security Strategy of Ukraine, «living environment, air quality, drinking water, food, which affects human life and health have been deteriorating»⁶.

¹ Харківська обласна державна адміністрація (2021). *Екологічний паспорт Харківської області на 2020 рік*, 10. <https://kharkivoda.gov.ua/content/documents/1110/110928/Attaches/ekologichniy_pasport_harkivskoyi_oblasti_za_2020_rik.pdf?sv> (2022, February, 20).

² *Стратегія екологічної безпеки та адаптації до зміни клімату на період до 2030 року, 2021* (Кабінет Міністрів України). *Офіційний сайт Верховної Ради України* <<https://zakon.rada.gov.ua/laws/show/1363-2021-%D1%80#n17>> (2022, February, 20).

³ *Стратегія національної безпеки України, 2020* (Верховна Рада України). *Офіційний сайт Верховної Ради України* <<https://zakon.rada.gov.ua/laws/show/392/2020#Text>> (2022, February, 21).

⁴ *Про Основні засади (стратегію) державної екологічної політики України на період до 2030 року, 2019* (Верховна Рада України). *Офіційний сайт Верховної Ради України* <<https://zakon.rada.gov.ua/laws/show/2697-19#Text>> (2022, February, 20).

⁵ Харківська обласна державна адміністрація (2021). *Екологічний паспорт Харківської області на 2020 рік*, 10. <https://kharkivoda.gov.ua/content/documents/1110/110928/Attaches/ekologichniy_pasport_harkivskoyi_oblasti_za_2020_rik.pdf?sv> (2022, February, 20).

⁶ *Стратегія національної безпеки України, 2020* (Верховна Рада України). *Офіційний сайт Верховної Ради України* <<https://zakon.rada.gov.ua/laws/show/392/2020#Text>> (2022, February, 21).

Ukraine ranks 60th in the world according to the Environmental Performance Index. According to this Index, the worst indicators are the following categories: «air quality, conditions for biodiversity conservation, the state of ecosystem services, sanitation and waste management»¹.

In Ukraine, there is a rather critical situation with the processing and disposal of those wastes that pose environmental threats. Thus, «about 500 million tons of various wastes are generated annually (industrial, hazardous, household, wastes of agricultural production, etc.); waste accumulation is more than 13 billion tons»².

The negative impact on the ecological state of the environment is also caused by the fighting caused by the Russian aggression, which has been going on in the eastern territories of Ukraine since 2014³. Thus, due to the armed aggression of the Russian Federation against Ukraine, according to the UN, «ecosystems were destroyed on at least 530 thousand hectares, including 18 protected areas with a total area of 80 thousand hectares»⁴. The territories of Donetsk and Luhansk oblasts are on the verge of ecological catastrophe. The reason for this is the pollution of soil, water and air, which occurred due to the flooding of coal mining enterprises in the occupied territories of Ukraine. Uncontrolled flooding of mines leads to deterioration of drinking water quality, to dangerous groundwater pollution.

A critical situation with the environmental safety of rural areas is also observed in Kharkiv region. Kharkiv region is located in the northeast of Ukraine.

Rural areas of Kharkiv region suffer from air, soil, water pollution, etc.

In Kharkiv region there are quite significant emissions of pollutants into the atmosphere: in 2020 they amounted to 94.1 thousand tons (Table 1)⁵.

Table 1

**Emissions of pollutants into the atmosphere of Kharkiv region
by type of economic activity in 2020**

Types of economic activity	Emissions	
	thousand, ton	percent to total
Total:	94,1432	100
Agriculture, forestry and fisheries	2,0712	2,2
Mining and quarrying	12,5997	13,38
Manufacturing industry	5,1329	5,45
Supply of electricity, gas, steam and air conditioning	70,9339	75,35
Water supply; sewerage, waste management	0,7453	0,79
Construction	0,01118	0,01
Wholesale and retail trade; repair of motor vehicles and motorcycles	0,1937	0,21
Transport, warehousing, postal and courier activities	1,5024	1,59
Temporary accommodation and catering	0,0066	0,00
Information and telecommunications	0,0137	0,02
Financial and insurance activities	0,0002	0,00
Real estate transactions	0,1282	0,14

¹ *Стратегія екологічної безпеки та адаптації до зміни клімату на період до 2030 року, 2021* (Кабінет Міністрів України). Офіційний сайт Верховної Ради України <<https://zakon.rada.gov.ua/laws/show/1363-2021-%D1%80#n17>> (2022, February, 20).

² Ibid.

³ *Стратегія національної безпеки України, 2020* (Верховна Рада України). Офіційний сайт Верховної Ради України <<https://zakon.rada.gov.ua/laws/show/392/2020#Text>> (2022, February, 21).

⁴ *Стратегія екологічної безпеки та адаптації до зміни клімату на період до 2030 року, 2021* (Кабінет Міністрів України). Офіційний сайт Верховної Ради України <<https://zakon.rada.gov.ua/laws/show/1363-2021-%D1%80#n17>> (2022, February, 20).

⁵ Харківська обласна державна адміністрація (2021). *Екологічний паспорт Харківської області на 2020 рік*, 8-10 <https://kharkivoda.gov.ua/content/documents/1110/110928/Attaches/ekologichniy_pasport_harkivskoyi_oblasti_za_2020_rik.pdf?sv> (2022, February, 20).

Continuation of table 1

Types of economic activity	Emissions	
	thousand, ton	percent to total
Professional, scientific and technical activities	0,0152	0,02
Activities in the field of administrative and support services	0,0579	0,06
Public administration and defense; compulsory social insurance	0,4814	0,51
Education	0,0826	0,09
Health care and social assistance	0,1507	0,16
Arts, sports, entertainment and recreation	0,0144	0,02
Provision of other types of services	0,002	0,00

Source: *Ecological passport of Kharkiv region for 2020*¹

The most polluting air in the Kharkiv region are enterprises engaged in the supply of electricity, gas, steam and air conditioning – 70.93 thousand tons. In second place in the region for emissions of pollutants into the atmosphere is taken by mining and quarrying enterprises: 12.59 thousand tons².

Radiation safety issues are also essential for rural areas of Kharkiv region. Radiation affects human health through the action of ionizing radiation caused by artificial and natural sources of ionizing radiation (IRS). At the end of 2020, there were 355 enterprises, organizations and institutions in Kharkiv region that use artificial IRS (sources of ionizing radiation): in industry and research institutions – 65, in treatment and prevention facilities – 290³. Artificial sources of ionizing radiation are most often used in medical institutions. As of 31.12.2020 in Kharkiv region 2,478 units of artificial sources of ionizing radiation (IRS) were registered, of which 1,001 units of isotopic IRS and 1,477 units of devices that generate ionizing radiation⁴. In addition, there are radioactive waste disposal sites in Kharkiv region, namely, the RADON Association.

Water resources are quite important for the rural areas of Kharkiv region, the pollution of which, unfortunately, is quite high.

Kharkiv region is located on the watershed of two river basins: the Don (the Siverskyi Dinets river), which occupies about 2/3 of the territory, and the Dnipro, which occupies 1/3 of the region⁵.

The main characteristics of water resources of Kharkiv region are given in Table 2⁶.

Table 2

Water resources of Kharkiv region

Water resources of Kharkiv region, Ukraine	
The total number of rivers	867
The total length of rivers	6405 km
Number of rivers longer than 10 km	172
The total length of rivers longer than 10 km	4650 km
The largest river – the Siverskyi Donets	length 1 053 km; within the region – 375 km

Source: *Ecological atlas*⁷

¹ Харківська обласна державна адміністрація (2021). *Екологічний паспорт Харківської області на 2020 рік*, 8-10 <https://kharkivoda.gov.ua/content/documents/1110/110928/Attaches/ekologichnij_pasport_harkivskoyi_oblasti_za_2020_rik.pdf?sv> (2022, February, 20).

² Ibid, 10.

³ Ibid, 150.

⁴ Ibid, 151.

⁵ Ibid, 10.

⁶ Екологічний атлас (2005). Харківська область – водні ресурси <<http://only-maps.ru/sovremennye-karty/ekologichnij-atlas-xarkivsko%1%97-oblasti-vodni-resursi.html>> (2022, February, 20).

⁷ Ibid.

The Siverskyi Donets River is the largest river in Kharkiv region. In Kharkiv region there are six medium rivers: the Oskil, the Uda, the Lopan, the Merla, the Oril, the Samara. The rest of the region's rivers belong to the category of small ones.

Kharkiv region has an extremely low supply of water resources and ranks 24th among the regions of Ukraine on this indicator (1.8% of the total water resources of Ukraine, taking into account the inflow from adjacent territories)¹. Therefore, it is important to prevent river pollution.

The problem of pollution of the rivers of Kharkiv region is mainly that almost all treatment facilities work with environmental misconducts. Sewage treatment plants in cities that are the centers of territorial communities in rural areas (Izyum, Chuhuiv, Bohodukhiv, Krasnohrad, Pervomaiskyi, Balakliya, Valky, Zmiiv) need reconstruction or overhaul. As a result, insufficiently treated waters are discharged into the rivers the Siverskyi Donets, the Uda, the Merla, the Kharkiv, the Berestova, the Oril, the Mzha², which has a negative impact on rural areas of Kharkiv region.

In recent years, there has been catastrophic pollution of the Uda River, which is a tributary of the largest river in Kharkiv region – the Siverskyi Donets. The Uda River suffered the greatest anthropogenic pressure due to the discharge of polluted water. That is why in recent years in Kharkiv region there have been many environmental protests related to the pollution of this river.

The tributaries of the Uda River are two rivers: the Lopan and the Kharkiv, which flow through the megalopolis city of Kharkiv. Water resources of the Uda River are used by various territorial communities in rural areas of Kharkiv region.

The problem of pollution of the Uda River is multifaceted. Thus, discharges from municipal sewage treatment plants №2 (Bezlyudivska biological treatment plant) enter the Uda River³. These discharges (Table 3) form the content of ammonium nitrogen, nitrite nitrogen, petroleum products in the Uda River⁴.

Table 3

**Excess average annual concentration of the pollutants in wastewater
from the Bezlyudivska biological treatment plant,
which enter the Uda River**

Pollutants	Maximum allowable concentrations of water body, mg/dm ³	Average annual concentration, mg/dm ³
Petroleum products	0,461	1,5
Ammonium nitrogen	2,1	2,3

Source: Ecological passport of Kharkiv region for 2020⁵

In addition to these problems, in recent years a significant problem for the Uda River has been the discharge of untreated wastewater from Temnivka Correctional Facility № 100.

The pollution of the Uda River is due to the activities of the enterprise for processing plastic bottles for recyclables, which employs prisoners of Temnivka Correctional Facility⁶. Temnivka Correctional Facility is located near the banks of the Uda River.

Plastic pollution of the river has been observed in rural areas of three territorial communities of Kharkiv region (Zmiiv, Bezlyudivka and Novopokrovka territorial communities) since 2015. The lack of pre-treatment filters for emissions causes catastrophic pollution of both the river and rural areas. Residents of rural areas near the Uda River have periodically demanded that the Temnivka Correctional Facility install cleaning filters at the plant. The residents also demanded to clear the river from plastic waste.

¹ Харківська обласна державна адміністрація (2021). *Екологічний паспорт Харківської області на 2020 рік*, 10 <https://kharkivoda.gov.ua/content/documents/1110/110928/Attaches/ekologichnyy_pasport_harkivskoyi_oblasti_za_2020_rik.pdf?sv> (2022, February, 20).

² Ibid, 192.

³ Ibid.

⁴ Ibid, 193.

⁵ Ibid.

⁶ Суспільне. Новини (2021). *Забруднення річки Уди: екологи перевіряють діяльність цеху з переробки пластику в колонії* <<https://suspilne.media/117107-zabrudnenna-ricki-udi-ekologi-pereviraut-dialnist-cehu-z-pererobki-plastiku-v-kolonii/>> (2022, February, 20).

This situation has led to the intensification of social movements in defense of the Uda River in Kharkiv region. However, there have been cases where the authorities have in some way ignored public initiatives to protect the ecosystem. This has only led to an intensification of environmental protests by the public.

Finally, representatives of the authorities of three rural territorial communities in Kharkiv region – Zmiiv, Bezlyudivka and Novopokrovka – began to demand inspections of the plastic processing plant.

In March 2021, Ecological Inspection Commission inspected the activities of the plastic processing enterprise in the Temnivka Correctional Facility. In addition, water samples were taken from the Uda River by environmentalists invited by the initiative group. It turned out that the Uda River is littered in many places. Moreover, a lot of waste accumulates near the penitentiary institution – Temnivka colony.

As local authorities did not take active action to address the environmental threats to rural areas posed by pollution of the Uda River, the public protested again. Thus, on May 13, 2021, a community picket took place near the Regional Department of Criminal Punishments, to which the Temnivka Correctional Facility is subordinated. The participants of the picket stated that the enterprise of the correctional facility was dumping plastic into the Uda River. Temnivka Correctional Facility administration did not even deny this: they have problems with sewerage.

In May 2021, a whole «island» of garbage appeared on the Uda River near the village of Babai. Volunteers organized a «Clean Udy» campaign to clear the river of «islands» of garbage. Volunteers cleared this garbage in May 2021 for three consecutive Saturdays. «More than 20 tons of garbage was taken from the river», said the organizer of the action, public activist Artem Prykhodko¹.

The next community ecological picket took place in front of Kharkiv Regional Administration building on June 10, 2021. It was on this day that the plenary session of Kharkiv Regional Council was taking place. Therefore, environmental activists sought to draw the attention of the authorities to the pollution of the Uda River with harmful substances, which affects the surrounding rural areas. In particular, they demanded that the local authorities apply to the Ministry of Justice of Ukraine with a request to allocate funds for treatment facilities for the Temnivka Correctional Facility².

Eventually, due to constant public pressure, the authorities began to respond to the pollution of the Uda River. On August 3, 2021 Kharkiv Regional Council called a meeting of the working group on solving problematic issues related to river pollution³. The working group also considered issues related to the purity of water resources in Kharkiv region.

During the meeting, Ruslan Gavrikov, a representative of Temnivka Correctional Facility, said that the institution had completely stopped discharging sewage into the Uda River. At the same time, the rights of prisoners in this situation should be ensured, so the colony had set six waste water collecting tanks up with a total capacity of 83 cubic meters. An agreement had also been concluded with an organization that deals with the removal of wastewater by specialized vehicles.

It turned out that in order to fully resolve this situation, the colony needed financial support to pay for the services of sewage removal. It was stated that the issue of purchasing their own sewage vehicle for Temnivka Correctional Facility was being considered.

During the meeting it was noted that the standing commission of Kharkiv Regional Council on Ecology supported the issue of monitoring natural resources in the region. In particular, it was a question of monitoring by means of satellite observation.

The problem of pollution of the Uda River was also considered by deputies of Kharkiv Regional Council at a meeting of the Commission on Ecology in September 2021. According to information from the regional prosecutor's office, criminal proceedings were initiated against three employees of Temnivka Correctional Facility, said the chairman of the commission Oleksandr Kukhar⁴. It was also noted that state funds were allocated for the development of a preliminary project for the treatment facilities reconstruction of Temnivka Correctional Facility.

¹ Цветкова, С. (2021). Харків'яни третю суботу поспіль розчищають річку Уди. *Суспільне. Новини* <<https://suspilne.media/134877-harkivani-tretu-subotu-pospil-rozchisaut-ricku-udi/>> (2022, February, 20).

² Цветкова, С. (2021). «Годі ховати голови в пісок»: під Харківською облрадою – потрібний пікет. *Суспільне. Новини* <<https://suspilne.media/138060-godi-hovati-golovi-v-pisok-pid-harkivskou-oblradou-potrijnij-piket/>> (2022, February, 20).

³ Харківська обласна рада (2021). *Темнівська колонія припинила скидання нечистот в річку Уди*. <<http://oblrada.kharkov.ua/ua/press-center/news/26786-temnivska-koloniya-pripinila-skidannya-nechistot-v-richku-udi>> (2022, February, 20).

⁴ Харківська обласна рада (2021). *Відбулось засідання комісії з питань екології*. <<http://oblrada.kharkov.ua/ua/press-center/news/27039-vidbulos-zasidannya-komisiji-z-pitan-ekologiji>> (2022, February, 20).

Thus, the representatives of the authorities reached out to the public in order to support important environmental initiatives aimed at solving urgent problems of ensuring environmental safety for residents of rural areas of Kharkiv region.

In general, effective communications and cooperation of Kharkiv authorities with the inhabitants of rural areas in the field of environmental safety can create conditions for sustainable development of rural areas.

However, the issue of the Temnivka Correctional Facility has not yet been fully resolved. The colony does not have its own treatment facilities, no funds have been allocated from the budget so far. And the Uda River is periodically polluted with harmful substances, which has a negative impact on the surrounding rural areas.

Conclusions. Thus, the issue of environmental safety for rural areas of Ukraine and Kharkiv region, in particular, is crucial. Problems of climate change, air pollution, river pollution, radiation pollution due to the Chernobyl accident, etc. negatively affect the resilience of the ecosystem.

Rural areas of Kharkiv region suffer from air, soil, water pollution, etc. Those enterprises which are engaged in the supply of electricity, gas, steam and air conditioning in the Kharkiv region are those which pollute air the most. There are also quite high emissions of pollutants into the atmosphere from mining and quarrying companies. Issues of radiation safety for rural areas of Kharkiv region are also essential.

In addressing the environmental protection of rural areas, the interaction between government and society is becoming important, but not always effective.

The situation of catastrophic environmental pollution has led to the intensification of environmental social movements in Kharkiv region. However, there have been often cases when rural authorities ignored public initiatives to protect the ecosystem. This has led to environmental protests from the public.

In recent years, there have been many protests in Kharkiv region related to the catastrophic pollution of the Uda River, which has suffered the greatest anthropogenic pressure due to the discharge of polluted water. Finally, government officials approached the public to support important environmental initiatives aimed at addressing pressing environmental security issues for Kharkiv's rural residents. Accordingly, the dialogue between the public and the authorities on the pollution of the Uda River has been partially established. However, an effective solution to the problem is still far away.

It was stated that effective communication and cooperation of Kharkiv authoritative bodies with the inhabitants of rural areas in the field of environmental safety can create conditions for sustainable development of the rural areas.

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