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RESULTS OF THE SOCIOLOGICAL RESEARCH «KAKHOVKA RESERVOIR: PAST, PRESENT, AND FUTURE»

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The full-scale russian invasion of Ukraine has caused great human, environmental, and economic losses. The situation was complicated by the destruction of the Kakhovka hydroelectric power station dam, which drained the reservoir and destroyed the main source of water supply for southern Ukraine. This negatively affected the environment and triggered a socio-economic crisis in the regions dependent on irrigated agriculture. Therefore, in the post-war period, an important step is to reassess the priority of sustainable development goals for southern Ukraine to ensure the survival, return and continued existence of the population, and the potential for development of the territories. In this context, it is essential to consider public opinion and the perspective of the local population regarding regional strategies and measures for the post-war restoration of the affected areas. The results of our social research showed that 79.4% of respondents depended on the Kakhovka reservoir for their livelihoods and economic activities, and 85.7% of respondents believed that the prosperity of the Kherson region depended on the functioning of the reservoir. It was found that 81.5% of respondents consider it necessary to restore, fill, and operate the reservoir using new technologies. In particular, 65.8% of respondents believe that post-war recovery decisions should be based on the collective vision of scientists, government and local authorities, international experts, and business representatives. It was discovered that 54% of respondents preferred the awareness of the scientific community, the authenticity and reliability of information in scientific publications. 88.0% of the respondents are of the opinion that draining the Kakhovka reservoir is a complex problem of ensuring the continued existence of the region in terms of economy, ecology, and social security. Discussion of the problems of restoring the Kakhovka reservoir is relevant since 94.8% of respondents currently live in the damaged areas or plan to return there after the war. Thus, the scale and damage from the destruction of the Kakhovka reservoir by the occupying forces is determined by the severity of environmental and socio-economic consequences, as well as the possibility of post-war restoration of damaged territories according to the local population's vision.

Key words: population, survey, impact of the war, post-war recovery, sustainable development.

Introduction. Since the beginning of the full-scale russian invasion of Ukraine, the country has suffered great human, environmental and economic losses. According to the State Environmental Inspectorate of Ukraine (https://www.dei.gov.ua/), environmental losses exceed 72.9 billion USD. In particular, losses of land resources amount to 11.02 billion USD, losses from soil contamination amount to 54.16 billion USD. The scale of the damaged areas is expanding daily, and the ecological damage is increasing. Within the combat zones, the soil is recorded to contain 15-30 times [1, 178594; 16, 166122] more petroleum products and heavy metals than the norm, which makes it impossible to use these lands for growing crops since the products are potentially dangerous for consumption. According to the Association of Sappers (https://www.uda.org.ua/en/), about 4.8 million hectares of agricultural land in Ukraine are mined, and 13.6 million hectares need to be surveyed for mines. It should be noted that about 26% of Ukraine's territory remains occupied, so it is difficult to determine the real ecological state of these territories and the depth of the social crisis.

The large-scale environmental and social crisis was deepened by the destruction of the Kakhovka hydroelectric power plant dam on June 6, 2023 [20, c. 631-647; 19, c. 275-288; 9, c. 82-104]. The flooding of the surrounding areas caused the deaths of many people and the destruction of housing, infrastructure, and businesses [14, c. 1181-1186]. The environmental consequences of the reservoir's destruction included its drainage and drying up of other water bodies, evaporation and lowering of the groundwater level, movement of salts into the topsoil and an increase in their concentration, along with the expansion of land areas affected by secondary salinization and alkalization [9, c. 82-104]. The level of danger in these territories is heightened by the occupation of the left bank of the lower Dnipro River, where 82% of Ukraine's irrigated lands are concentrated [13, c. 104-120]. These territories include the Autonomous Republic of Crimea, part of the Kherson and Zaporizhzhia regions. According to the Ministry of Agrarian Policy of Ukraine (http://www.minagro.kiev.ua/), the occupation and loss of the irrigation source cause annual economic losses for land users equivalent to 4.0 million tons of grain crops (1.5 billion USD). This reduces the level of food security both in Ukraine and in the world as a whole, since Ukraine was the main exporter of grain to Egypt, Indonesia and Lebanon [2, c. 102418]. In particular, the destruction of transport and energy infrastructure caused an increase in fuel, fertilizers, seeds, and equipment prices, significantly reducing crop production profitability. It should be highlighted that Ukraine is one of the guarantors of global food security; 400 million people have food thanks to the export of Ukrainian agricultural products. Notably, after the start of the war, world market prices for grain rose to the level of the 2007/08 food crisis [18, c. 1-13], which emphasizes the strategic role of Ukrainian agriculture in the world.

Military operations and the drying up of water sources, primarily the Kakhovka reservoir, made it impossible to irrigate agricultural lands and fill the hydro-reclamation network of southern Ukraine. There is a disruption of the hydrological regime, water levels, increased temperature pressure on the soil surface, accelerated evapotranspiration, catastrophic levels of water deficit, degradation and decline of soil properties, loss of the vegetative quality of plants and their drying out, suppression and degradation of ecosystems, fires, soil exposure, desertification of irrigation zones [4, 100167; 9, c. 82-104; 6, c. 357-373; 15, 100182; 11, c. 783]. Such adverse effects will have prolonged consequences of worsening the ecological situation and intensifying the socio-economic crisis in the territories of southern Ukraine. Therefore, research should study the suitability of territories for human life, their return and further existence of settlements, conducting economic activities, and the potential for sustainable territorial development. In this context, it is important to consider public opinion and the position of the local population regarding the directions of regional strategies and measures for the post-war restoration of disturbed territories, to revise goals and ensure sustainable development of regions by socio-economic needs and the ecological state of territorial ecosystems, considering climate change. The purpose of our research is to conduct a social study "Kakhovka Reservoir: Past, Present, Future", the results of which should serve as the basis for making management decisions in the post-war reconstruction of war-torn territories of southern Ukraine.

Material and methods.

Characteristics of the Kherson region's territory

The social research focuses on the Kherson region of Ukraine (Fig. 1).

The region is located in the southern part of Ukraine within the Black Sea lowland. In the northwest, Kherson region borders Mykolaiv region, in the north – Dnipropetrovsk region, in the east – Zaporizhzhia region of Ukraine, in the south along the Syvash and Perekop Isthmus – the Autonomous Republic of Crimea. The region comprises 49 territorial communities (9 urban, 17 township, and 23 village ones) and five districts (Beryslavskyi, Henicheskyi, Kakhovskyi, Skadovskyi and Khersonskyi).

The region includes 656 settlements. As of January 1, 2021, the population was 1,016.7 thousand people, including 624.7 thousand people of urban population, and 392.0 thousand people of rural population. According to the Kherson Regional Military Administration (https://khoda.gov.ua/), as of March 2024, approximately 156,000 people remained in the region, including 68,000 urban residents, which is 6.5 times less than the pre-war population.

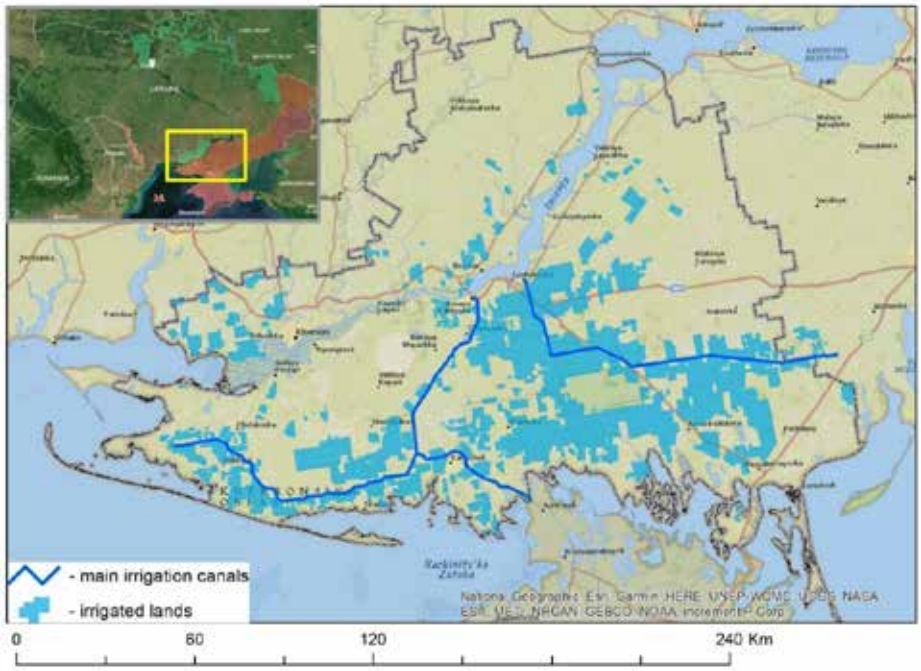


Figure 1. **Territorial affiliation of respondents from the Kherson region (on the map, in the upper left corner, the territories of Ukraine occupied by russia are highlighted in red, the location of the Kherson region is highlighted by the yellow square) (Source: Developed by the authors)**

The total area of the region is 2846.1 thousand hectares, including 1971.0 thousand hectares of agricultural land (69.25% of the region's territory), of which arable land is 1777.6 thousand hectares (90.2% of the agricultural land territory). The main soil types in the region are southern black soils, which cover 43.7% of the total agricultural land area, and dark chestnut soils, which account for 30.7 % (Pichura et al. 2023a). The region accounts for 20% of Ukraine's irrigation systems, covering an area of 426.4 thousand hectares, which constitutes 21.65% of the region's agricultural land. The actual use of irrigated land between 2003 and 2021 ranged from 250,000 to 315,000 hectares (Pichura et al. 2023b). Three main irrigation systems are concentrated on the left bank of the Kherson region: the Kakhovska irrigation system, covering 243.1 thousand hectares, the Kalanchtska and Krasnoznamenska irrigation systems, covering 102 thousand hectares. The source of water intake for these systems was the Kakhovka reservoir. On the right bank of the Kherson region, there is a part of the Inhuletska irrigation system, which has an area of 18.2 thousand hectares, supplied from the Inhulets River (a right tributary of the Dnipro River). Local irrigation systems were also utilized in the region, covering an area of 22.4

thousand hectares, while the area of local irrigation amounted to 40.7 thousand hectares. It is worth noting, that rice irrigation systems covering an area of 8.1 thousand hectares were located on the left bank of the region [8, c. 188-198].

Water management value of the Kakhovka reservoir

The Kakhovka reservoir had an area of 2,155 km^2 and was created in southern Ukraine between 1955 and 1958 to generate electricity, develop the fishing industry and recreation, nourish plants in water protection zones and nature conservation sites, and provide fresh water for enterprises, irrigation systems, and the sanitary and household needs of approximately 6 million people. Before the destruction of the hydroelectric dam, the reservoir water body had the following characteristics: total volume – 18.2 km^3, useful volume – 6.8 km^3; normal pool level – 16.0 m, dead storage level – 12.7 m, maximum depth of the reservoir – 32.0 m, average depth – 8.5 m, seasonal water level fluctuations amounted to 3.3 m; maximum length of the water area – 230 km, maximum width – 25.0 km, average width – 9.3 km, shoreline length – 869.0 km; the multi-year runoff varied from 28.3 to 61.7 km^3/year. The capacity of the constructed hydroelectric power plant (HPP) was 329,000 kW; the maximum discharge capacity of the HPP was 2,600 m^3/s.

It should be noted that the ecological state of the reservoir area during its operation, based on surface water quality indicators, was unsatisfactory, but the reservoir was the only source covering the water deficit of the Steppe zone of Ukraine. The reservoir's water reserves were used to supply water to 140 settlements with a population of over 1 million people. Considering all the factors of the reservoir's impact on the socio-economic life of Ukraine, the destruction of the reservoir deprived 6 million people of a source of drinking water, and 13 million people experienced restrictions in meeting their household needs. Experts have estimated the environmental damage at more than $60 billion. It is worth noting that the Kakhovka reservoir was the main source of irrigated agriculture, covering about 800,000 hectares of agricultural land. Kakhovskyi Canal, North Crimean Canal, Dnipro-Kryvyi Rih Canal were the main lines of irrigation system. In the last pre-war years, the volume of surface water use was 1.21-1.34 km^3, including 4.89-7.98% for drinking and sanitary needs, 71.15-73.56% for production needs, 18.04-23.60% for irrigation, and 0.36-0.42% for other needs. The reservoir area was also an artery of navigation and the basis for the functioning of the port of Nikopol, an important center of recreation and fishing, and the existence of hydro resources. In Ukraine, more than 22% of the fish market was provided by freshwater fish caught in the Kakhovka reservoir. The combination of natural and economic conditions contributed to the formation of the region's tourism industry, which opened up new opportunities for local communities, promoted the development of various types of business, and rooted and strengthened the agricultural sector of the Kherson region.

The social research "Kakhovka Reservoir: Past, Present, Future" was conducted using the questionnaire method

The study consisted of two blocks: 1) a survey of respondents from the local population of the Kherson region based on quantitative (number, age group) and qualitative (population categories – gender, type and field of activity) indicators; 2) analysis and synthesis of scientific results of the consequences of the destruction of the Kakhovka dam and the draining of the reservoir to provide information and visual support for the discussion of specific questions in the questionnaire.

The questionnaire contains 16 questions (Tab. 1), which allowed us to determine the position of socially active citizens regarding the post-war reconstruction of the Kherson region and the role of the Kakhovka reservoir in it.

Table 1. **Questions and answers of the social research questionnaire "Kakhovka reservoir: past, present, future"**

Question	Answer variants
1. Your gender	– Male – Female
2. Your age	– 18-25 – 26-40 – 41-55 – 55+
3. What type of activity were you engaged in before the war?	– Student – Hired employee – Own business – Without permanent employment – Retiree
4. Your type of activity now	– Military – Student – Businessman(woman) – Hired employee – Currently unemployed – Retiree
5. Rate your standard of living before the war	– It was always difficult – Income depended on seasonal work – Stable, sufficient income – I had a high level of income
6. Did you have any pre-war plans to move to other regions or countries?	– Yes – No
7. Did your activities before the war relate to agriculture?	– Yes – No
8. Were your activities previously related to the existence of the Kakhovka Reservoir (fish farming, land irrigation, recreation)	– Yes, it was the basis of my business – Yes, my work is connected with its existence – For me, it was a recreation area – Never thought about it – It was a source of water supply and irrigation
9. Do you associate the prosperity of the Kherson region with the Kakhovka reservoir?	– Yes – No

Table 1 (Continued)

10. Do you think the coverage on television and social media of the scale of the Kakhovka dam disaster is complete?	– I think the coverage was sufficient – There was a lot of information, but it was not meaningful – The information was important only for the affected region – It is necessary to involve more scientists in the coverage of the consequences of the disaster who are engaged in research and the territory of the Kherson region
11. Were you involved in the survey to express your position on the consequences of the disaster?	– Yes, I am an active citizen – My family and I have suffered as a result of this terrible crime – I am used to experiencing horrors alone – I participated in the survey
12. Do you consider it necessary to discuss the restoration of the Kakhovka Reservoir's functioning?	– Yes, this is the main source of water supply and irrigation, so reconstruction should be carried out – Yes, restoration should be conducted using modern technologies, the restoration project should aim at revitalizing the Kherson region – I do not know these issues, this should be dealt with by specialists and authorities – What happened, happened – nothing needs to be done
13. Who, in your opinion, is most knowledgeable about the post-war economic recovery of the Kherson region?	– Government and local self-government bodies – International experts – Business representatives – Scientists – All of the above specialists together
14. The issue of draining the Kakhovka reservoir is a problem:	– Economic – Social – Environmental – It covers all the listed areas (economic, environmental and social)
15. What sources of information do you consider reliable and truthful?	– TV – Social networks – Newspapers – Scientific publications – I don't trust anyone
16. Do you plan to return to the Kherson region after the war?	– I live here now, I haven't left anywhere – My home is now in the occupied territory, after liberation I plan to return – It's too early to decide for sure – I don't plan to return

The study was conducted in January-February 2025. 189 respondents from the Kherson region took part in the survey. The survey was conducted using the CAPI method – computer assisted personal interviews using Google Forms. Data collection was carried out using two methods: 1) face-to-face interviews; 2) the method of sending SMS messages to residents of the Kherson region with their prior consent. The quantitative characteristics of the sample represent the population of the Kherson region by age: 18-25 y.o. – 42 people (22.3%), 26-40 y.o. – 69 people (36.7%), 41-55 y.o. – 63 people (33.5%), over 55 y.o. – 14 people (7.4%). The qualitative characteristics of the gender had the

following ratio: 124 male (65.6%), 65 female (34.4%). According to the age and gender structure, it was found that interest in a certain topic was shown by men of working age, who belong to the category of socially active citizens.

The survey was conducted among residents of communities in the Kherson region who showed initiative to participate in the survey, and their lives and activities were directly related to the functioning of the reservoir in the pre-war period. For this purpose, questions 3, 4, 5, 6, 7, 8, 9 were included in the questionnaire. The answers to these questions made it possible to determine the territorial affiliation, living conditions, type and scope of activity, and public position of the respondents.

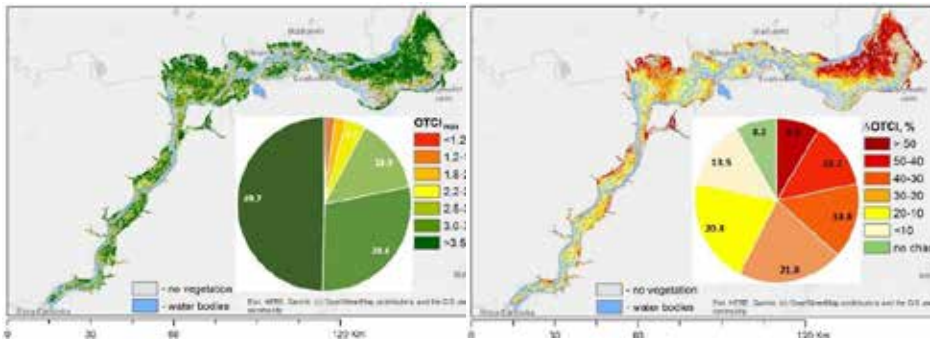
Results and discussion. Based on the survey results of 189 respondents from the Kherson region, it was determined that in the pre-war period, 48 people (25.4%) were students, 106 people (56.1%) were employees, 19 people (10.0%) had their own business, 9 people (4.8%) were unemployed, and 7 people (3.7%) were retirees. The respondents characterized their level of security before the war as follows: 6 people (3.2%) had a high level of income, 139 people (73.5%) had a stable income, 23 people (12.2%) had seasonal income, and 21 people (11.1%) admitted to a difficult financial situation, the latter category included the unemployed, retirees, and students. Only 19% of respondents in the pre-war period considered the possibility of moving to other regions of Ukraine or to other countries.

During wartime, as of the beginning of 2025, there were changes in the employment structure of respondents, in particular, 77 people (40.8%) are students, 62 people (32.8%) are employees, 25 people (13.2%) are military personnel, 10 people (5.3%) are entrepreneurs, 8 people (4.2%) are temporarily unemployed and 7 people (3.7%) are retirees. Research has shown that the war and its consequences negatively affected the business sector and the level of employment of the local population. This led to a reduction in the number of entrepreneurs by almost 2 times and a decrease in the number of employees in various fields of activity by 23.3%, which significantly worsened the economic situation in the Kherson region and affected the standard of living of the local population.

It is important to mention that before the war, the share of respondents employed directly in agriculture was 38%, while 62% of respondents were employed in other areas. Therefore, to determine the dependence of the living conditions of all respondents on the functioning of the Kakhovka Reservoir, a question was asked about the impact of the reservoir on their activities and living conditions. It was established that 79.4% of respondents acknowledged the dependence of their activities and living conditions on the Kakhovka reservoir, including 1.6% of respondents who considered the reservoir as the basis of their business, 13.8% who linked their work to its existence, 36.5% who viewed it

as a recreational area, 27.5% who recognized it as a source of water supply and irrigation, and 20.6% who had never considered the impact of the reservoir on their lives. It is essential to highlight that 85.7% of respondents believe that the prosperity of the Kherson region depended on the functioning of the Kakhovka reservoir, while 14.3% did not recognize such dependence.

The destruction of the Kakhovka HPP dam led to a natural and climatic transformation of the drained territory of the reservoir (Fig. 2) and a catastrophic moisture deficit in the southern regions of Ukraine [19, с. 275-288; 21, с. 147-164; 9, с. 82-104; 6, с. 357-373; 11, с. 783].



a *b*

Figure 2. **Formation of vegetation cover and change in chlorophyll in plants of the Kakhovka reservoir bed for September 2023 and 2024: *a* – maximum favorable conditions for chlorophyll accumulation, $OTCI_{max}$; *b* – decrease in chlorophyll content (ΔOTCI, %) as of September 2024 relative to the $OTCI_{max}$ value. The Terrestrial Chlorophyll Index (OTCI) indicator was used to calculate the chlorophyll content in the leaves of vegetation cover (Source: Pichura et al. 2025a)**

Military operations and related activities of the occupation forces caused the reservoir to drain, which made it impossible to irrigate agricultural lands and fill the hydromelioration network. In turn, this resulted in increased temperature stress on the soil surface, accelerated evapotranspiration, deterioration of soil properties, soil degradation, loss of good vegetative characteristics of natural vegetation, its desiccation, fires, soil exposure, and desertification of the irrigation zone. As of July 15, 2021, the average Normalized Difference Moisture Index (NDMI) [3, с. 257-266; 17, 101405] value in the irrigation zone of the left bank of the Kherson region (Fig. 3) was 0.12 (variation from -0.14 (bare soils) to 0.4 (areas with good moisture and vegetation)). As of July 14, 2024, the average NDMI value was -0.13 (variation from -0.26 (bare soils, dry vegetation) to 0.0 (areas with water stress and desiccated vegetation)).

The consequences of the dam collapse and the draining of the Kakhovka reservoir were covered by the media, displayed on the information websites of

the relevant government and local government bodies, and on social networks. In this regard, the question arose about the completeness of television and social media coverage of the scale of the Kakhovka dam collapse disaster. It was found that 13.8% of respondents considered the coverage sufficient, 11.1% believed that there was a lot of information, but it was generalized, meaningless and limited, and 9.0% of respondents considered the information presented to be important only for the population of the affected region. It should be noted that 66.1% of respondents consider it important to involve scientists who conduct research and who live in the Kherson region in covering the consequences of the disaster. This indicates the high level of public trust in the scientific community.

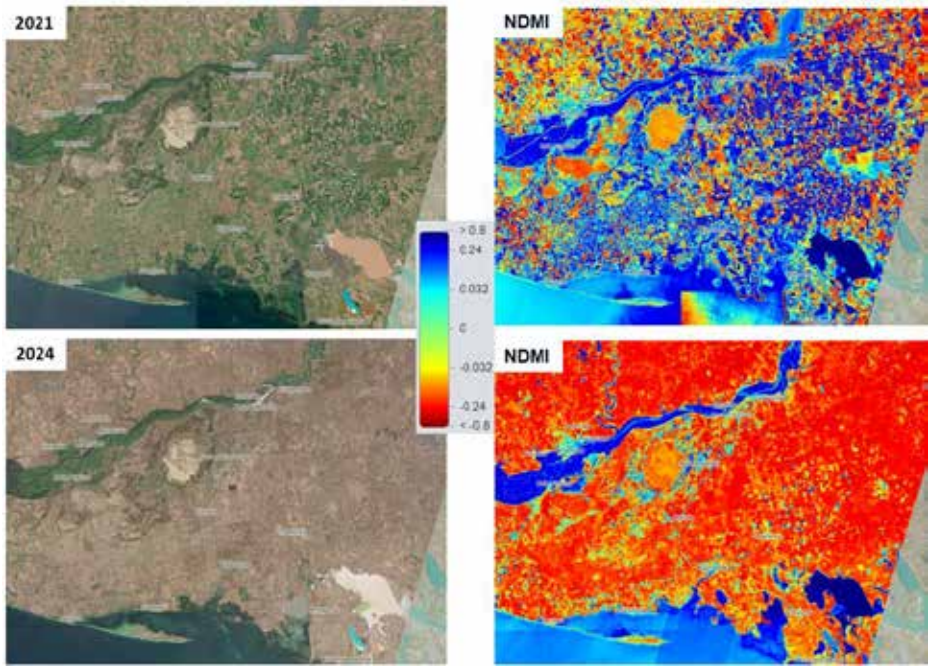


Figure 3. **Natural and climatic transformation of the territory of irrigated agriculture in Kherson region as a result of military operations, comparison of Sentinel 2 L2A satellite images for July 2021 and 2024: images on the left – Truecolor; images on the right – Normalized Difference Moisture Index (NDMI) used to determine the level of plant moisture (Source: Developed by the authors)**

Alongside scientific research, an active public stance and participation in social studies by local residents affected by the flooding or whose lives depend on the functioning of the Kakhovka reservoir are equally important. Therefore, to conduct in-depth and large-scale scientific research into the consequences of the war and develop post-war measures to restore the disaster areas, it is nec-

essary to consider the opinions of the local population of the Kherson region. It was found that 26% of respondents take an active public stance in covering and disseminating the consequences of the disaster, 35.4% have previously participated in surveys, 20.1% of respondents recognize themselves as victims of the disaster, and 18% of respondents are mainly experiencing the consequences alone. As a result of analyzing the answers to this question, it is necessary to pay attention to the problem of socialization of affected people, whose isolation can cause deterioration of their health and psycho-emotional state. After the destruction of the Kakhovka power plant dam, three possible scenarios for the post-war functioning of the Kakhovka reservoir territory are discussed in the public space (Fig. 4) [7, c. 118-154; 11, c. 783]: scenario 1: reconstruction of the hydroelectric power plant dam and restoration of the reservoir according to the conditions of its previous existence [19, c. 275-288; 21, c. 147-164; 9, c. 82-104; 6, c. 357-373]; scenario 2: nothing needs to be done, allowing for the potential formation of a natural vegetation ecosystem [5]; scenario 3: creation of a natural-artificial reservoir system using modern technologies, involving partial water filling and the establishment of a quasi-natural environment [19, c. 275-288; 21, c. 147-164; 9, c. 82-104; 6, c. 357-373].

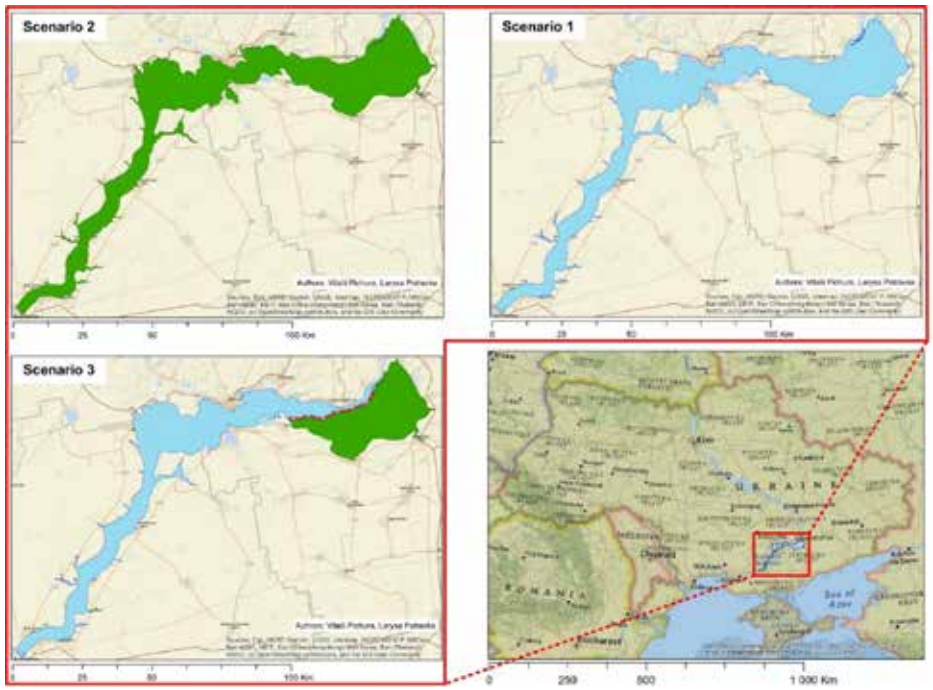


Figure 4. **Scenarios of the Kakhovka reservoir territory functioning (Source: Pichura et al. 2025b, Pichura and Potravka 2025c)**

The quasi-natural environment is a "second nature" environment that includes all elements of the natural environment that have been artificially transformed and modified by people. The quasi-natural environment, unlike the natural environment, is not capable of self-sustaining and requires periodic investment of resources. Therefore, a prerequisite for preserving and maintaining the quasi-natural meadow and forest environment is the artificial supply of water to this area. To create a quasi-natural environment, have proposed separating the upper shallow part of the reservoir by a dam (Fig. 5), which occupies 725 km^2 or 34% of the reservoir's territory [7, c. 118-154].

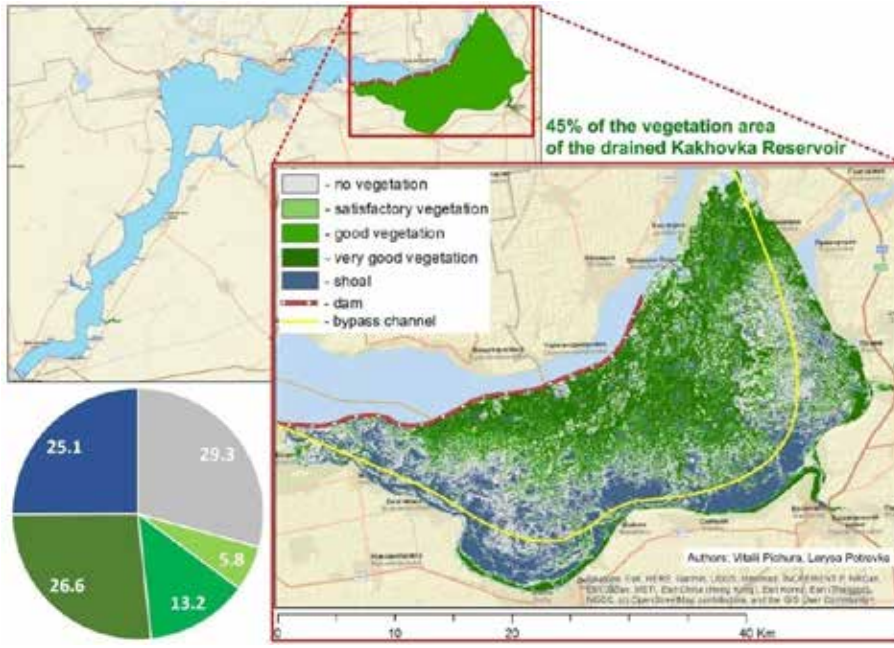


Figure 5. **Scenario 3 – Natural and artificial system of the Kakhovka reservoir (Source: Pichura et al. 2025b, Pichura and Potravka 2025c)**

The development of post-war recovery programs under the third scenario involves considering the opinion of local residents. It was found that 56.6% of respondents support the third scenario of restoring and operating the Kakhovka reservoir using modern technologies, the restoration project should be aimed at restoring the life in the Kherson region, 24.9% of respondents consider the restoration and operation of the reservoir under the first scenario sufficient, 12.2% of respondents chose the second scenario without restoring the reservoir, and 6.3% admitted that they did not know about these issues, so they rely on experts and authorities. Thus, under scenarios 1 and 3, 81.5% of respondents

expressed their opinion on the necessity of restoring, filling, and operating the Kakhovka reservoir. The opinions of the local population must be considered when making management decisions concerning the post-war operation of the reservoir territory. Our research confirms the previous results of a social survey conducted by scientists from Kherson State University, which found that 75.0% of the population of the southern regions of Ukraine supports the restoration of the Kakhovka hydroelectric power plant and the filling of the reservoir. It should be emphasized that the ability of the local population to adapt in the post-war period is predominantly determined by ecological and resource factors, first of all, the availability of water resources.

Awareness, in-depth research, and coverage of the true consequences of the Kakhovka disaster establish a deep trust in scientists among the local population. This is confirmed by the respondents' answers to the question: "Who, in your opinion, is most knowledgeable about the post-war economic recovery of the Kherson region?" The distribution of responses is as follows: 19.6% of respondents preferred scientists, 14.6% preferred other categories of specialists, including 7.3% – government and local self-government bodies, 4.2% – international experts, 3.1% – business representatives. It should be noted that 65.8% of respondents believe that the decision on the post-war reconstruction of the Kherson region should be based on the collective expert opinion of all groups of specialists.

The involvement of a wide range of experts will provide an opportunity for an objective analysis of the situation, and the development of a strategy and action plan for the post-war restoration of ecocide territories will be aimed at the sustainable development of the region. Expert conclusions should be based on the depth, scale, credibility, and transparency of research results, and be supported by the expertise of specialists in researching the condition and future functioning of the Kakhovka reservoir territory. The high level of public trust in scientists is confirmed by survey results showing that 54% of respondents consider information from scientific publications reliable and trustworthy, while 12.2% trust social networks, and 3.7% trust television. Notably, newspapers were not selected by any respondents as a reliable source of information. However, 30.1% of respondents express distrust toward all information sources, a consequence of the occupiers' information pressure during the occupation, which forced people to isolate themselves from the information space. The distrust of the population is a complex consequence of the occupation, which will complicate the discussion and coordination of post-war reconstruction projects in the deoccupied territories, which will significantly increase the risks of their effective implementation. The respondents' views on the scale of the Kakhovka disaster were distributed as follows: 19.9% of respondents consider the reservoir's drainage an environmental issue, 2.1% emphasize its economic nature,

while none identify it as a social issue. The vast majority – 88% of respondents – view the drainage of the Kakhovka reservoir as a complex problem affecting the region's economy, ecology, social security, and protection.

Reviewing how sustainable development goals are implemented when forming strategies to restore war-damaged territories is a pressing issue for ensuring the survival, return and continued existence of the local population. It should be noted that 45% of respondents currently reside in the Kherson region and do not plan to leave, 16.6% have housing in the territory temporarily occupied by the enemy, 33.2% of internally displaced respondents plan to return after the war, and only 5.2% of respondents do not plan to return. Therefore, the patriotic and responsible public position and vision of the respondents should serve the foundation for the post-war reconstruction and restoration of the environment and living conditions in the Kherson region. It should be emphasized that historically, land cultivation and the development of irrigated agriculture contributed to the spread of settlements deeper into the territory of Kherson region. As of January 2025, 72.11% of the territory of Kherson region is occupied, with about 93% of the region's irrigated land, 425 settlements (65% of the total), and 13 districts (68% of the region's districts). The following districts of the region are currently occupied: Verkhnyorohachytskyi, Velykolepetyskyi, Nyzhnyosirohozkyi, Hornostayivskyi, Kakhovskyi, Ivanivskyi, Oleshkivskyi, Holoprystanskyi, Skadovskyi, Kalanchatskyi, Chaplynskyi, Novotroitskyi, and Henicheskyi. The situation in the occupied territories of the region is complicated, characterized by signs of a social and humanitarian crisis. The majority of settlements suffer from a lack of drinking water and water resources to meet household needs. Agriculture is fragmented, which is confirmed by our research results. The principal task of post-war recovery is to restore the water supply and irrigation system in the Kherson region, as the availability of water resources is the primary condition for the population to revive the agricultural sector as the leading sector of the Kherson region's economy.

Conclusion. Social research is an essential component in assessing the consequences of war, while studying public opinion on post-war recovery strategies and measures will increase the effectiveness of management decisions in achieving sustainable development of the territories in the post-war period. The results of the social research "Kakhovka Reservoir: Past, Present, Future" are based on the answers of 189 respondents. Ninety percent of respondents described their pre-war standard of living as fairly high, which was ensured by the stable income they received in the form of wages. As of today, the number of entrepreneurs has halved, and the number of employees in various fields of activity has decreased by 23.3%. The economic situation in the region has been complicated by the conditions that emerged after the destruction of the Kakhovka hydroelectric power plant dam and the draining of the Kakhovka reservoir. The

survey revealed that 79.4% of respondents associate their activities and livelihoods with the Kakhovka reservoir, while 85.7% believe that the prosperity of the Kherson region depends on its functioning. Therefore, it is essential for scientists to comprehensively highlight the consequences of ecocide, as the level of trust in researchers among the population is high. A total of 66.1% of respondents consider it important to involve scientists in addressing the consequences of the disaster and determining the directions for the further restoration of the territories. The respondents mostly considered themselves people with an active public stance. Regarding the publicly presented scenarios for restoring the territory of the drained Kakhovka reservoir, 81.5% of respondents expressed the opinion that it should be restored by filling and operating it and that the development of the restoration project should be based on the shared position of scientists, authorities and local governments, international experts and business representatives. In particular, 54% of respondents consider the information provided by scientists to be the most reliable. Most respondents (88.0%) view the drainage of the Kakhovka reservoir as a complex problem that impacts the region's future in areas of economy, ecology, and social security. The issue of considering public opinion on the post-war restoration of the Kakhovka reservoir is relevant, as 94.8% of respondents currently live or plan to return to the Kherson region.

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РЕЗУЛЬТАТИ СОЦІОЛОГІЧНОГО ДОСЛІДЖЕННЯ «КАХОВСЬКЕ ВОДОСХОВИЩЕ: МИНУЛЕ, СУЧАСНЕ ТА МАЙБУТНЄ»

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Повномасштабне російське вторгнення в Україну спричинило значні людські, екологічні та економічні втрати. Ситуацію ускладнило руйнування греблі Каховської гідроелектростанції, що призвело до осушення водосховища та знищення основного джерела водопостачання для південної України. Це негатив-

но вплинуло на довкілля та спричинило соціально-економічну кризу в регіонах, залежних від зрошуваного землеробства. Тому в післявоєнний період важливим кроком є переоцінка пріоритетів цілей сталого розвитку для південної України, щоб забезпечити виживання, повернення та подальше існування населення, а також потенціал для розвитку територій. У цьому контексті необхідно враховувати громадську думку та погляди місцевого населення щодо регіональних стратегій і заходів для післявоєнного відновлення постраждалих територій. Результати нашого соціального дослідження показали, що 79,4% респондентів залежали від Каховського водосховища для забезпечення засобів до існування та економічної діяльності, а 85,7% респондентів вважали, що процвітання Херсонської області залежить від функціонування водосховища. Було встановлено, що 81,5% респондентів вважають за необхідне відновлення, наповнення та експлуатацію водосховища з використанням нових технологій. Зокрема, 65,8% респондентів вважають, що рішення щодо післявоєнного відновлення мають базуватися на колективному баченні вчених, державних і місцевих органів влади, міжнародних експертів та представників бізнесу. Виявлено, що 54% респондентів віддають перевагу поінформованості наукової спільноти, автентичності та надійності інформації в наукових публікаціях. 88,0% респондентів вважають, що осушення Каховського водосховища є комплексною проблемою забезпечення подальшого існування регіону з точки зору економіки, екології та соціальної безпеки. Обговорення проблем відновлення Каховського водосховища є актуальним, оскільки 94,8% респондентів наразі проживають у постраждалих районах або планують повернутися туди після війни. Отже, масштаби та збитки від руйнування Каховського водосховища окупаційними силами визначаються серйозністю екологічних і соціально-економічних наслідків, а також можливістю післявоєнного відновлення постраждалих територій відповідно до бачення місцевого населення.

Ключові слова: населення, опитування, вплив війни, післявоєнне відновлення, сталий розвиток.

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