

## MANAGEMENT OF CONFLICTS IN AGRARIAN NATURE USE OF TERRITORIAL COMMUNITIES

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### Abstract

*The purpose of this study is to develop recommendations for the conflict in agrarian nature use management on the basis of assessment, analysis and mapping (on the example of the community of Velyka Andrusivka of the Kirovohrad region of Ukraine). To achieve the goal, the methods were used: analytical, SWOT analysis, interviewing, cartography, chemical analysis. The article includes the results of the chemical analysis of water from the wells of the Velyka Andrusivka community and the results of the SWOT analysis of the conflict in nature use between the community of Velyka Andrusivka and the “VKiK” pig farming complex. The existence of a conflict within the community was confirmed and recommendations for its resolution were formed. A number of ecological and social recommendations for this specific community have been developed on the basis of existing methods of resolving conflicts in nature use. The data and recommendations obtained during the research can be used to resolve the conflict in the community of Velyka Andrusivka and similar conflicts in agrarian nature management.*

**Key words:** conflicts in the field of agrarian nature use, community, pig farm, pollution, well, waste management

### INTRODUCTION

Conflicts in the field of nature management are quite widespread in Eastern Europe. They are often caused by contradictions between different household subjects. They can cause a huge negative impact on household structure, environment and common health. In most cases, conflicts in the field of nature management can be described as consequences of controversy, occurred within social-economic territorial system, or between several systems, caused by limited amount of natural resource or it's quality decreasing [9]. The reasons and conditions, which may cause such conflicts are as varied, as are social-economic formations, natural conditions, and features of public mentality. These conflicts become imminent because of increasing of sphere of influence of mankind itself and it's increasing impact on natural environment. Therefore, they involve not only nature and mankind, but also different subjects of nature use, which begin confrontation between each other for right to use said environment and it's resources. In other words, conflicts in the field

of nature management may occur, when one of nature users has a concern about planning or current providing of other nature user's project, which does not submit to the principals of rational nature using, or just does not fit the conception of it's using of one of the users [8; 11]. These conflicts may have local or global interstate nature [13]. In such a conditions timely distinction and searching of optimal methods of solution of these conflicts as well as methods of optimization of affected natural systems is crucial.

There are different ways of solving of such conflicts in different countries, based on cultural and mentality features of particular society. As good example of such a variety can be astonishingly different methods of solving of the same type of conflicts in the field of nature management (between nature users and environmental institutions) in Finland and Kazakhstan. In both countries there is a problem of local seal population decreasing because of unregulated fishing and intentional or unintentional actions, that can be classified as poaching. In case of Finland, the active society was the main actor of

conflict solving. Volunteers and petitions to government allowed to restrain and minimize interactions between men and seal population of lake Saimaa by establishing zones of the lake, forbidden for men to visit, and providing measures to increase number of seals. It was environmental and volunteer organizations, who took the initiative and provided necessary measures, which can be determined as result of high level of personal responsibility of each citizen. Kazakhstan acts marginally differently: the main actor here is a state itself, to be specific, it's enforcers, because of low initiative level of each particular individual, as well as of citizenry society and particular traditional features of interactions of individuals between each other and of institutions between each other. The main method is resolving a mass ambushes on unregulated fishers, to take their catch from them, frequent armed skirmishes between enforcers and poachers, which cause injuries and deaths of people. These actions have a low level of efficiency.

Methods and effectiveness of conflict resolution in the field of nature management depend primarily on the cultural, legal and economic features of the territory in which it occurred. Therefore, it is crucial to understand conflict's history, duration, former attempts to resolve it, main stakeholders, their motives and positions in the conflict before providing the methods of it's solving. Based on these data, it is possible to understand which part of stakeholders can initiate a compromise or a final solution to the problem, or what kind of external force must be involved to change the balance of power in the conflict.

The purpose of the research is applying recommendations on solving the conflict in agrarian nature use of territorial community, based on methods of conflict mapping and conflict analysis (on example of territorial community (TC) of Velyka Andrusivka of Kirovohrad region of Ukraine.

## MATERIALS AND METHODS

In this research next methods were used: analytical, SWOT-analysis, interviewing, conflict mapping, chemical analysis.

Empiric hypothesis is based on assumption, that wastes of the local pig farm enterprise increase water hardness; the white precipitate on plastic tools, that had a direct contact with well water – are sulfates, nitrates and other salts, mixed with water from the enterprise.

In June, 2020 the field research was provided, to investigate the current state of the conflict between government, enterprisers and citizens. The research included several stages: (1) interviewing citizens of Velyka Andrusivka in order to determine their attitude to the conflict, and to identify possible sources of the problem, or its new aspects that were not taken into account before;

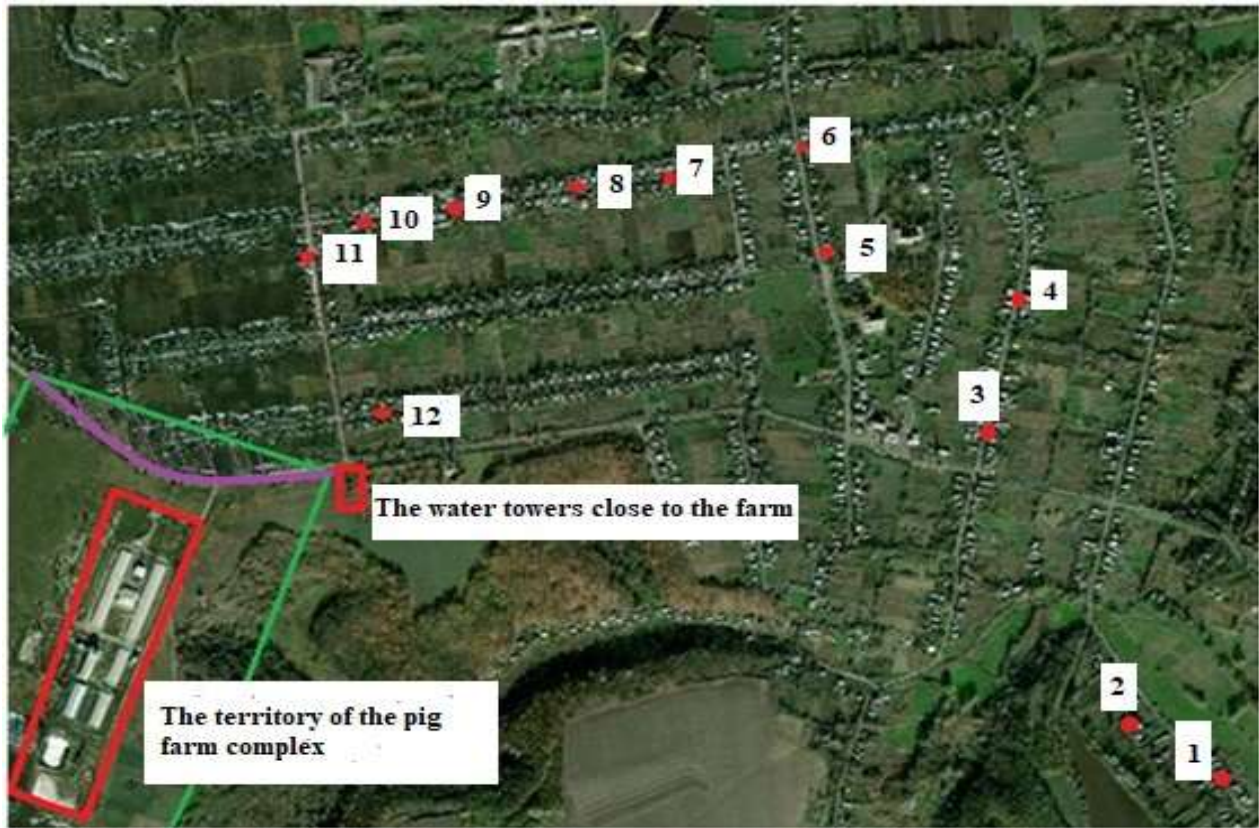
(2) collecting water samples from wells of Velyka Andrusivka, for further analysis;

(3) analysis of the collected samples for compliance with sanitary standards.

The expedition was held on July 4, 2020, during which 12 water samples was collected. Samples were taken in different parts of the village located at different distances from the pig farm. This will allow to investigate the dependence of water pollution on proximity to it. This will also be helped by an increase in the number of complaints from citizens as they approach the pig farm. Interviewing was spontaneous, due to the fact that not everyone who provided their water for testing agreed to provide information, possibly due to the pressure exerted by local authorities on people raising the issue of conflict.

Map 1 shows the sampling map during the expedition. The places where water samples were taken are shown with red dots, the serial number of the sample is in white squares. Also on this map, the territory of the pig complex, which is quite close to the village, and the water towers are marked. The sanitary zone that was meant to be is marked in green (500 m against the real 372 m). The area of violation is marked in purple. Due to the small distance of its location from the village, residents complain about the unpleasant smell coming from the complex. It is possible to raise the issue of payment of compensation from the management of the complex. The main indicators that will be analyzed are pH, total hardness and total salinity, or mineralization. The indicator of

mineralization is crucial in proving the fact that waste from the pig farm entered the groundwater.



Map. 1. Water sample collection map of Velyka Andrusivka  
Source: authors' scheme based on data of Google Maps.

## RESULTS AND DISCUSSIONS

### The most common conflicts in the field of nature management within TC

Considering the fact that society interacts with the natural resource complex on a large number of different levels, it is quite logical that in order to cover the entire spectrum of possible conflicts in field of nature management, there is a system of their classification and description according to the work by V. V. Sabadash [9]: "According to the basic component of the ecosystem, due to which a conflict may arise, regarding its involvement in production, consumption or exchange, they are divided into land, water, forest, mineral, food, assimilation and complex. All of them are possible within the boundaries of territorial communities, especially in cases where the unification of settlements of different sizes and levels of influence took place. The dominant settlement, which has the majority of

representatives in the community council, and also has, thanks to a larger share of the population in the overall structure, a larger share of votes during public meetings and voting, can, if desired, implement its own priorities in matters of the use of natural resources".

The most common are conflicts related to the distribution of resources between internal communities. This type of conflict includes both contradictions between internal communities and between separate settlements of the TC regarding the distribution of funds or other resources between them, infrastructure, to be specific. Mostly, they are related to the fact that some internal communities consider this distribution to be unfair and such that it satisfies the interests of some at the expense of the interests of others. Such conflicts can unfold both between the administrative center and the periphery, and between peripheral settlements [8].

**Description, features, participants and classification of the conflict in nature management in TC of Velyka Andrusivka**

TC of Velyka Andrusivka is located in the northeast of the Kirovohrad region. To the south of it is the city of Svitlovodsk, and to the east it is washed by the Dnieper river.

Both of these factors create favorable conditions for the potential economic development of TG, both economically and recreationally.

General information about the pig farm given in Table 1.

Table 1. General information about the pig farm

Title	FARM “VKiK”
Short title	FG “VKiK”
Code	34141366
CEO	Kozyarchuk V. V.
Status	Registered
Location	Ukraine, 27520, Kirovohrad region, Svitlovodsk district, Velyka Andrusivka, complex No. 1
Type of the enterprise (according to KVED)	1.46 Pig farming
Use of water for industrial needs from underground sources, thousand m <sup>3</sup> /year	76.515
Place of discharge (within/outside the settlement)	The cesspool, located in the village Velyka Andrusivka of the Svitlovodsk district of the Kirovohrad region, the basin of the Dnipro River; Accumulator, located in the village. Velyka Andrusivka, Svitlovodsk district, Kirovohrad region, Dnipro river basin
Waste water category	tap, industrial
Main waste or indicators for measuring water quality	BOD5, BOD2, ammonium nitrogen, phosphates, chlorides, SPAR (synthetic surfactants), nitrates

Source: formed by the authors according to the data of the Ukrainian inspection portal [7; 10].

By 2019, the State Environmental Inspection has recorded a number of violations, the main of which are listed below using data from the inspection portal from the report on a routine inspection dated May 29, 2019: “measures have not been taken to control compliance with the approved standards of maximum allowable emissions of pollutants; Instrumental measurements were not carried out on the border of the sanitary protection zone and the Program for conducting production laboratory control of emissions approved by the Main Department of the State Production and Consumer Service in Kirovohrad region was not followed” [7]. “The enterprise is not on the state register as an object that causes or may cause a negative impact on public health and the state of an atmosphere” [7]. “The inventory of waste sources does not include waste containers from pesticides and agrochemicals; the journal of accounting for waste and packaging materials and containers according to the standard form No. 1-VT is not kept in full (accounting for waste of worn overalls, waste

from welding works, metal shavings, paper and cardboard waste, containers from pesticides and agrochemicals, damaged needles is not kept or used and others); the indicator of the total generation of waste needs to be adjusted; no changes have been made to the Registration card; no contracts have been concluded for the transfer of waste containers from pesticides and agrochemicals, used needles, liquid sewage (sewage)” [7]. In general, a number of violations were recorded in relation to atmospheric air pollution and waste management. Also, as of May 29, 2019, the company did not have a permit for the special use of a well in Velyka Andrusivka, but received it on July 8, 2019 [10]. The following information was obtained after interviewing one of the deputies of Svitlovodsk council. In the village of Velyka Andrusivka, water from the local water supply supplied by KP “Gospodar” corrodes zinc buckets and makes holes in them with frequent use. There is a very high probability of damage to the pipes. There is an assumption that waste from a pig farm located

on the territory of the village and owned by the Svitlovodsk private enterprise “VKiK” gets into the aquifers from which water is pumped by local entrepreneurs. This farm was founded by the former mayor of Svitlovodsk, known for his corruption scandals and political intrigues and persecution of opponents during his tenure as mayor. There are also complaints from residents that the water in many village wells below the level of the main streets suddenly disappeared, despite the fact that this had never happened before. This phenomenon is also associated with the penetration of waste from the pig farm into groundwater. It is also known that at the request of local farmers, the pig complex supplies them with waste as fertilizer for the fields. This may be the main cause of waste entering groundwater. In 2014, they tried to resolve the conflict through inspections and the involvement of the Svoboda party, experts found a violation of the sanitary zone (328 meters from the village instead of 500) and the absence of a permit for handling waste of 1–3 hazard class [1]. Features of the conflict. Resonance in local media, active discussion of the problem in social networks.

Problem context:

- (1) lack of dialogue between local authorities and citizens, which leads to inactivity of the former;
- (2) the scandalous personality of the founder of the pig complex, which complicates the process of finding the optimal solution;
- (3) lack of dialogue between the villages of the TG, which is a consequence of the conflict situations of the past years.

Participants and parties:

- (1) supports the termination of pig farm activities related to the deterioration of water quality – the community and some deputies;
- (2) supports the continuation of activities – representatives of the pig farm;
- (3) the authorities of the TG do not want disclosure and deterioration of the image.

### Conflict classification

According to current methods of conflict classification, the studied conflict can be classified.

- 1) According to the basic component of the ecosystem, due to which a conflict can arise,

this conflict is based on water;

- 2) According to the territorial feature, it should be considered local, because its boundaries are determined by a defect in the village water supply system, and it does not go beyond them;

- 3) According to the hierarchy of participants, this conflict is intergroup, because in this case there are two clearly defined interest groups: the village community and the management of the pig farm together with the authorities. The latter can be separated into a separate group, because they have interests that coincide, but partially, with the interests of the management.

- 4) According to the affiliation of the participants, this is a conflict between users and intermediaries, because in this case water is public property. In this case, administrative bodies and representatives of the government act as mediators.

- 5) It seems difficult to classify this conflict according to the duration of the conflict, because its duration has already reached more than half a year, that is, it no longer fully fits the term of a short-term conflict, but it has not yet turned into a long-term conflict. It should be noted that with the nature of the authorities of the TG, such a course of events does not seem impossible, because it is in the interests of the authorities not to publicize it, which will lead to its freezing, with the intimidation of representatives of the active community in order to save money that could be spent on examinations, measures with cleaning and monetary compensation to the population. But for now, this conflict is closer to the short-term class in terms of time frame, but could potentially become long-term.

- 6) By role of the ecological component in the mechanism, this conflict should be considered real, because in this case we are talking about the unmediated direct role of the resource in the conflict. Its poor quality is a problem in itself. It is also not fictional, which is confirmed by the analyzes conducted by two different authorities. Also, it is not used intentionally by any political forces to discredit the existing authorities, and therefore there is no increased forcing and problem exaduration within TC.

7) According to the measure of uncertainty, it is fashionable to consider this conflict as a conflict in conditions of certainty, because all parties to the conflict are sufficiently well informed about the prerequisites, course and manifestations of the conflict situation. This increases the probability of finding the optimal solution, but cannot guarantee it due to the subjective characteristics of the owner of the pig farm.

8) In terms of the direction of action, this conflict is characterized by pronounced verticality, because it cannot cover new territories or participants, locked within the boundaries of the village water supply. But it worsens over time due to deterioration of mood among the population.

9) According to the degree of manifestation, this is currently an open conflict, because the parties have openly expressed their goals and brought them to the media.

10) According to the results of the resolution, the conflict is constructive, because its solution does not necessarily involve the destruction of one of the participating parties and can be achieved through dialogue and

consensus.

11) It is not yet possible to classify this conflict according to methods of resolution, since in these conditions it is not known what methods will be used to resolve the conflict despite the recommendations provided below.

12) According to the factors of occurrence, this conflict can be characterized as a conflict caused by a scarcity of resources, caused by the low quality of the mentioned resource.

### Results of field research, mapping and SWOT analysis of the conflict

According to the testimonies of proactive villagers, water problems started in the year of 2019. Then the pig complex had to drill a new well to replace the old one, during the operation of which an incident occurred, and a foreign object was dropped into it, which, according to the assumptions made, was the engine of some unit. After that, a new well was drilled, probably without due consideration of the effect on groundwater circulation, around the same time many village wells downstream of the plant dried up.

Table 2. Indicators of total mineralization, total hardness and pH for collected water samples

No	Tot. min., mg/dm <sup>3</sup>	Characteristic (Total mineralization)	pH	Characteristic (pH)	Total hardness	Characteristic (Tot. hardness)
1	520	Very high hardness index, use is dangerous for health	8.730	Meets standards for tap water	12.8	Very hard water
2	511	Very high hardness index, use is dangerous for health	9.197	Alkaline environment. Does not meet standards for tap water	12.8	Very hard water
3	377	High hardness index, use without a filter is not recommended	9.066	Alkaline environment. Does not meet standards for tap water	12.2	Very hard water
4	383	High hardness index, use without a filter is not recommended	9.537	Alkaline environment. Does not meet standards for tap water	8.0	Hard water
5	376	High hardness index, use without a filter is not recommended	9.542	Alkaline environment. Does not meet standards	10.0	Hard water
6	322	High hardness index, use without a filter is not recommended	9.043	Alkaline environment. Does not meet standards for tap water	6.4	Medium hardness
7	384	High hardness index, use without a filter is not recommended	9.454	Alkaline environment. Does not meet standards for tap water	8.8	Hard water
8	386	High hardness index, use without a filter is not recommended	9.493	Alkaline environment. Does not meet standards for tap water	8.0	Hard water
9	294	Classified as a tap water	9.303	Alkaline environment. Does not meet standards for tap water	8.8	Hard water
10	322	High hardness index, use without a filter is not recommended	9.091	Alkaline environment. Does not meet standards for tap water	6.2	Medium hardness
11	389	High hardness index, use without a filter is not recommended	9.473	Alkaline environment. Does not meet standards for tap water	8.0	Hard water
12	319	High hardness index, use without a filter is not recommended	9.473	Alkaline environment	6.4	Medium hardness

Source: results of authors' research based on the data of the SanPiN 2.2.4-171-10 "Hygienic requirements for drinking water intended for human consumption".

The water level in some has only significantly

decreased, and residents of the rural outskirts

continue to take water there. But it would be incorrect to immediately associate this phenomenon with the drilling of a well, due to the fact that in recent years the summer was very dry and characterized by a small amount of precipitation, which could cause a decrease in the groundwater level. The results of the analysis of the collected water samples are shown in Table 2.

The results of the analysis show that in all cases the water does not meet the standards for well water in terms of pH and total mineralization, and in 9 out of 12 cases it does not meet the requirements for total hardness, according to SanPiN 2.2.4-171-10 “Hygienic requirements for drinking water intended for

human consumption”. In all mentioned cases, we are talking about a high level of water hardness and high water alkalinity. The highest indicators of mineralization and hardness can be observed in samples 1 and 2 – these samples were taken from wells that people use for drinking water and for domestic purposes. Long-term use of water with a high level of hardness has a negative effect on the digestive and cardiovascular systems, leads to the formation of calculi in the body. Regular use of alkaline water, in turn, leads to stomach ulcers and gastritis, and also negatively affects the cardiovascular system.

Table 3. Indicators of nitrates in selected water samples

№	Nitrate content, mg/dm <sup>3</sup>	Maximum permissible concentration (MPC), mg/dm <sup>3</sup>	Characteristic
1	417.9	50	The indicator significantly exceeds the MPC
2	427.0	50	The indicator significantly exceeds the MPC

Source: results of authors’ research based on the data of the SanPiN 2.2.4-171-10 “Hygienic requirements for drinking water intended for human consumption”.

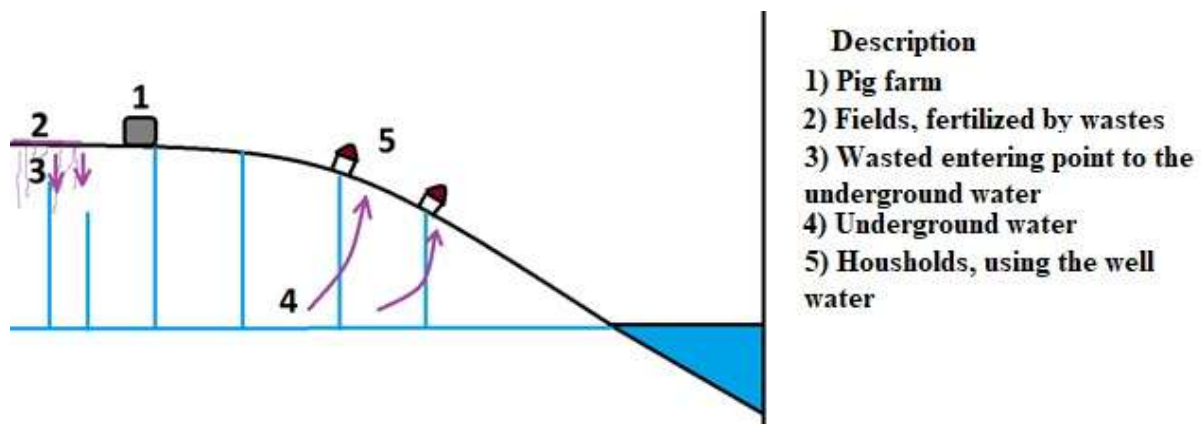


Fig. 1. Schematic representation of waste entering groundwater  
 Source: authors’ scheme.

In both cases, the indicator of nitrate concentration is significantly higher than the norm. The approximate calculation of the amount of compensation for damages caused to the state due to groundwater pollution was carried out in accordance with the methods approved in Order No. 389 dated 07.20.2009 “On approval of the Methodology for calculating the amount of damages caused to the state due to violations of the legislation on the protection and rational use of natural resources”. The indicator of nitrates was taken as a basis. According to the results of the

calculations, the estimated damage from pollution is UAH 237750. It is known that in addition to the incident with the well, the pig complex supplies its waste as fertilizer to neighboring entrepreneurs who irrigate their fields with it. There is a high probability that these fields are above aquifers, and the waste gets into them by being absorbed through the soil, washed away by rains, and the nature of the terrain and the fact that the village is on a slope, and the complex and fields are on top, only intensify this process. Then this water goes to the village water supply. Figure 1

shows a schematic representation of this phenomenon.

In order to develop effective recommendations in the situation that developed in the TC of Velyko Andrusivka it is necessary to characterize the external and internal environment of the conflict, which can be done in two ways at least:

(1) Conflict mapping;

(2) Providing a SWOT analysis.

The mapping of this conflict was carried out according to the method of identifying the main sides of the conflict, namely: the community, as the victims; the management of the pig complex as the culprits; the authorities of the TC as mediators. The complete scheme is presented in Figure 2.



Fig. 2. Mapping of the conflict surrounding the contamination of water from wells by the pig complex  
 Source: authors' scheme.

Table 4. Strengths and weaknesses, opportunities and threats of this conflict

<p><i>Strengths</i></p> <ol style="list-style-type: none"> <li>1) The presence of an active layer of the community</li> <li>2) The possibility of communication and disclosure in the mass media and social networks</li> <li>3) The conditions and the source of the conflict are known.</li> <li>4) A relatively high level of awareness of the community about its rights and the ability to use the available legal tools</li> </ol>	<p><i>Opportunities</i></p> <ol style="list-style-type: none"> <li>1) Providing examinations</li> <li>2) Involvement of public organizations</li> <li>3) International attention</li> <li>4) Modernization of the complex</li> </ol>
<p><i>Weaknesses</i></p> <ol style="list-style-type: none"> <li>1) Odious personality of the head of the pig complex, which hinders the resolution of the conflict</li> <li>2) Low level of civic activity</li> <li>3) Silence of the head of the community about the fact of the conflict</li> <li>4) Reluctance to modernize production and disposal technologies, guided by the save funds priorities</li> </ol>	<p><i>Threats</i></p> <ol style="list-style-type: none"> <li>1) New accidents at the enterprise</li> <li>2) Increasing pressure on the community</li> <li>3) Conflict freezing</li> </ol>

Source: results of authors' research.

In order to develop effective and comprehensive recommendations for resolving the conflict between the pig farm

and the community of Veliko Andrusivka, from the very beginning it is necessary identify its strengths and weaknesses, which



show the state of the internal environment, as well as opportunities and threats, which characterize possible factors that can affect the course of the conflict. The results are shown in Table 4. Based on the results of the analysis, legal methods with the involvement of additional parties in the form of groups of experts and public or political organizations with their legal tools should become the main tools for resolving the conflict. Based on the results of the SWOT analysis matrix, it is possible to apply recommendations for conflict resolution. So, the main cause of the conflict is the fact that the management of the complex did not take into account the location of groundwater when drilling a well, which led to waste from the pig complex entering the village aqueduct, which leads to the deterioration of water quality in general, that is, we can say that the conflict has already led to the loss of ecosystem services [6; 14]. Unfortunately, in Eastern post-Soviet Europe, the level of civil society and understanding of one's own civil and property rights does not allow the full implementation of self-regulatory practices common in the West [2]. These circumstances are worsened by the authoritarian nature of the enterprise management, which leads to the actual freezing of the conflict in a phase disadvantageous for both sides, due to the impossibility of reaching a consensus [4]. Also, the political nature of the owner of the enterprise (former mayor) can be an obstacle on the way to resolving the conflict [5]. Therefore, it is important to involve public organizations and democratic parties in solving the problem in order to attract public attention in neighboring cities and the region as a whole, in order to prevent framing of information about the conflict [3]. It is also important to implement environmental risk management systems [12] that will ensure a reduction in the conflict of interests between agricultural enterprises and society and promote sustainable development.

## CONCLUSIONS

The investigated conflict is characterized as follows: it is an open water vertical local

constructive intergroup real conflict of users and mediators in conditions of certainty, caused by resource scarcity. This deficit, in turn, is caused by the low quality of the considered resource. So far, this conflict is closer to the short-term time frame, but could potentially become long-term. In order to resolve the conflict, using the methods of expert assessments and external environmental audits, the involvement of public and political organizations, and settlement by judicial procedure are necessary:

- 1) organization of protests and forming of public organizations to protect citizens from possible force, legal and psychological methods of pressure and information campaign among the population. Disclosure of information about each case of pressure or threats from management or authorities;
- 2) involvement of public organizations and democratic parties in solving the problem to attract public attention in neighboring cities and the region as a whole;
- 3) conducting an external environmental audit at the enterprise and looking for opportunities to attract subsidy funds for the modernization of pig keeping conditions and waste disposal, raising the issue of material compensation for environmental damage;
- 4) filing a lawsuit against the management of the complex in order to stop operating the existing well and drill a new one taking into account the groundwater regime to prevent waste from getting there and organizing a forensic environmental examination;
- 5) demand modernization, transfer or termination of activities;
- 6) constant “informational pressure” on social networks, photo reports with images that can attract the attention of the community: yellowed flowers that have been watered with water from a well or buckets that have been run over by water, unfit for further exploitation;
- 7) attracting the attention of international human rights organizations to the problem;
- 8) conducting a hydrological analysis of local groundwater, determining the boundary of aquifers and the area of their recharge, on its basis, creating a protection zone. A study of

the experience of the United States in this matter;

9) cessation of fertilization of fields located within these limits, carrying out environmental control of land use;

10) reorientation of local farms to the greening of agriculture, making a markup on the final product for its environmental friendliness.

Among the promising areas of research are the following: development of a standardized methodology for the study of conflicts in the use of nature in territorial communities; preparation of practical recommendations on conflict management in the field of nature use of territorial communities. This study was carried out before the full-scale Russian invasion of Ukraine, it does not take into account the consequences of the war unleashed by Russia on the environment, agriculture, other industries and the new challenges that society as a whole faced. Therefore, issues of post-war restore of the environment, agrarian sector and the economy of Ukraine as a whole, guaranteeing global, national and regional food security are among the priority areas of future research.

## REFERENCES

[1] Annotated report of scientific research work on scientific and hygienic support of the object "Construction of pig complex No. 11 of JV "Nyva Pereiaslavshchyny" LLC in the administrative boundaries of Gostrolutsk village council of Baryshiv district of Kyiv region" (outside the settlement) regarding determining carcinogenic and non-carcinogenic risks for public health. <http://surl.li/edmpg>. Accessed on 20.12.2022.

[2] Brouwer, F. Heinz, I., Zabel, T. (Eds.), 2003, Governance of water-related conflicts in agriculture. New Directions in Agri-Environmental and Water Policies in the EU. Dordrecht, Springer. <https://doi.org/10.1007/978-94-017-0101-3>. Accessed on 20.12.2022.

[3] Buijs, A. E., Bas, A. J. M., Elands, B. H. M., Lengkeek, J., 2011, Beyond environmental frames: the social representation and cultural resonance of nature in conflicts over a Dutch woodland. *Geoforum*, 42(3), 329–341. <https://doi.org/10.1016/j.geoforum.2010.12.008>. Accessed on 20.12.2022.

[4] Choudhury, E., Islam, S., 2015, Nature of transboundary water conflicts: issues of complexity and the enabling conditions for negotiated cooperation. *Journal of Contemporary Water Research & Education*,

155(1), 43–52. <https://doi.org/10.1111/j.1936-704X.2015.03194.x>. Accessed on 20.12.2022.

[5] Grip, K., Blomqvist, S., 2020, Marine nature conservation and conflicts with fisheries. *Ambio*, 49, 1328–1340. <https://doi.org/10.1007/s13280-019-01279-7>. Accessed on 20.12.2022.

[6] Havrylenko, O. P., 2019, Nature management conflicts in the context of loss of ecosystem services. *Scientific Bulletin of KSU. Series Geographical Sciences*, 10, 101–106. <https://doi.org/10.32999/ksu2413-7391/2019-10-14>. Accessed on 14.09.2022.

[7] Inspection portal. [https://inspections.gov.ua/subject/view/about?subject\\_id=27772](https://inspections.gov.ua/subject/view/about?subject_id=27772). Accessed on 20.12.2022.

[8] Nita, M. R., Ioja, C. I., 2020, Environmental conflicts in the context of the challenging urban nature. *Carpathian Journal of Earth and Environmental Sciences*, 15(2), 471–479. <https://doi.org/10.26471/cjees/2020/01>. Accessed on 20.12.2022.

[9] Sabadash, V. V., 2007, Typology of environmental conflicts. *Mechanism of economic regulation*, 1, 22–34.

[10] State Water Resources Agency. <https://mepr.gov.ua>. Accessed on 20.12.2022.

[11] Storie, J. T., Bell, S., 2017, Wildlife management conflicts in rural communities: a case-study of wild boar (*sus scrofa*) management in Ērgļu Novads, Latvia. *Sociologia Ruralis*, 57(1), 64–86. <https://doi.org/10.1111/soru.12122>. Accessed on 20.12.2022.

[12] Sumets, A., Tyrkalo, Y., Popovych, N., Poliakova, J., Krupin, V., 2022, Modeling of the environmental risk management system of agroholdings considering the sustainable development values. *Agricultural and Resource Economics*, 8(4), 244–265. <https://doi.org/10.51599/are.2022.08.04.11>. Accessed on 20.12.2022.

[13] Thondhlana, G., Cundill, G. & Kepe, T. (2016). Co-management, land rights, and conflicts around South Africa's Silaka nature reserve. *Society & Natural Resources*, 29(4), 403–417. <https://doi.org/10.1080/08941920.2015.1089609>. Accessed on 20.12.2022.

[14] Wanzten, K. M., Ballouche, A., Longuet, I., Bao, I., Bocoum, H. et al., 2016, River Culture: an eco-social approach to mitigate the biological and cultural diversity crisis in riverscapes. *Ecohydrology and Hydrobiology*, 16(1), 7–18. <https://doi.org/10.1016/j.ecohyd.2015.12.003>. Accessed on 20.12.2022.