ISSUES AND CHALLENGES REGARDING THE DETERMINATION OF THE NORMATIVE MONETARY VALUATION OF LAND PLOTS WITHIN THE TERRITORY OF THE TERRITORIAL COMMUNITIES

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Abstract. A detailed study and analysis of the methodology for the normative monetary valuation of land plots approved by the Resolution of the Cabinet of Ministers of Ukraine dated November 3, 2021 No. 1147 was carried out regarding the possibility of its application, and the identification of problems arising in the process of its implementation. The main aspects of the normative monetary valuation of land plots and its influence on the development of territorial communities in Ukraine are considered. The methodical, economic and regulatory problems of determining the normative monetary valuation of land plots according to the current methodology as an important economic tool for regulating land relations and economic stimulation of rational use and protection of land have been studied and analysed.
Methodological and technical deficiencies were identified in the process of determining the normative monetary valuation of land plots of territorial communities and calculating the size of the normative monetary valuation of a separate land plot.

It was established that although according to the Law of Ukraine "On Land Valuation" the normative monetary value is "capitalized rental income", the current method of its determination is not based on the income that can be obtained from the use of the land plot, but on fixed tabular norms, which are differentiated according to population of the administrative center of the community. Only for agricultural lands, the income from their use is taken into account according to the current methodology, however, they are taken into account through soil quality scores, which have not been updated since the 1980s.

It was revealed that due to the fact that there is no indexation of the normative monetary valuation of agricultural land, the revenues of local budgets do not increase by at least UAH 0.6 billion every year on the scale of Ukraine.

**Key words:** normative monetary valuation, land plots, territorial communities, local budgets, methodical recommendations.

**Problem statement.** Land, as a spatial and productional basis, has always played an important role in the development of society and economy. Its rational use becomes a key task aimed at ensuring sustainable development and optimizing the effective use of this natural resource. One of the main tools for achieving this goal is the monetary valuation of land plots.

Normative monetary valuation of land plots should be based on a systematic approach to determining their value, which takes into account various factors and indicators. This assessment is based on the rental value of the land plots. The Law of Ukraine “On Land Valuation” defines the normative monetary valuation of land plots as: “capitalized rental income from a land plot, determined according to established and approved standards”.

By resolution No. 1147 of November 3, 2021, the Cabinet of Ministers of Ukraine approved the methodology of normative monetary valuation of land plots
(hereinafter – the Methodology), which combines previous methodologies of normative monetary valuation of land in Ukraine. Its purpose is to carry out normative monetary valuation (NMV) of land plots, regardless of their categories and forms of ownership, located on the territory of communities. This is done within the framework of the organizational unity of the assessment process and considers the requirements of current legislation, updating the assessment methodology in accordance with it [1].


It is important to note that the normative monetary valuation of land plots of territorial communities is the basis for determining the land tax. This tax, in turn, is a source of filling the budgets of territorial communities and plays an important role in financing the development of infrastructure, social programs and other needs of citizens.

Accordingly, the methodology of normative monetary valuation of land plots, approved by Resolution of the Cabinet of Ministers of Ukraine No. 1147 of November 3, 2021, requires detailed research and analysis regarding the possibility of its application, and the identification of problems arising in the process of its implementation. In this article, we will consider the main aspects of the normative monetary valuation of land plots and its impact on the development of territorial communities in Ukraine.

Analysis of the latest scientific research and publications. A. Tretyak, V. Tretyak and A. Volska carried out a study and analysis of the current
Methodology, which, according to them, provides for the simplification of the current methodologies of normative monetary valuation of land in Ukraine. The above-mentioned scientists see the inconsistency of the essence of the normative monetary valuation, which by law should reflect the capitalized rental income, and according to the Methodology, it is based on the costs for the development of the territory, and not on the income that can be obtained from the use of the land plot, depending on the category of land and the purpose of the land plot. They also focused on calculating the normative assessment of agricultural land plots and comparing their value calculated according to the current Methodology and the previous one [5].

**The purpose of the research** is the study and analysis of methodological, economic and regulatory problems of determining the normative monetary valuation of land plots according to the current Methodology as an important tool for regulating land relations and stimulating the rational use and protection of land.

**Materials and methods of scientific research.** As part of the study, technical documentation on land management regarding the normative monetary valuation of land plots of the Hleiuivatska rural territorial community of the Dnipropetrovska oblast was developed. Within its framework methodological, economic and normative problems of determining the normative monetary valuation of land plots according to the current Methodology were analysed. The legislation in the context of regulatory monetary valuation of land plots was studied.

**Presenting main material.** Our analysis of the current Methodology of normative monetary valuation of land plots should begin with the fact that it really combined three different Methodologies that were in force before the adoption of the current one. All these three methods related to different parts of the territory of the community, or lands of different purpose. Accordingly, there was a need to develop three separate technical documentation on land management. However, a situation often occurred when local self-government bodies ordered the development of only one or two types of technical documentation, accordingly, a normative monetary valuation was not carried out for all lands of the community. The current Methodology solves this problem if its development is ordered for the entire territory
of the community. The authors of the Methodology and the Cabinet of Ministers of Ukraine, which approved it, gave the opportunity to local self-government bodies to order the normative monetary valuation of land plots for part of the community's territory. However, the author of the Methodology did not specify how this part of the territory is determined [1].

One of the advantages of the current methodology, which we drew attention to, is that assessment districts are defined not only within the boundaries of settlements, but also beyond them. In case of the intended use of a land plot change from agricultural to non-agricultural, it is possible within the same technical documentation to determine its normative monetary value as non-agricultural at the expense of the $K_{m4}$ coefficient determined for this plot within the assessment district [1].

Speaking about the determination of coefficients, we note that many methodological and technical issues arise when calculating the $K_{mts}$ for agricultural land. Unlike the $K_{m4}$ coefficient (for which clause 10 of the methodology clearly defines rounding to the third decimal place), for $K_{mts}$ the rounding rule is not defined by the methodology. Accordingly, there are no legal grounds to round it up to the third decimal place, which introduces a certain misunderstanding in the calculation process. However, for plots with an area of more than 30 hectares, depending on the soil quality score, rounding to the third place after the decimal point of the $K_{mts}$ coefficient affects the final value of the normative monetary valuation of the land plot. Accordingly, the larger the area of the plot, the greater will be the discrepancy, which may affect the size of the land fee or rent. As part of the research, having made the appropriate calculations, it was established that for a conditional land plot with an area of 10,000 hectares, when the value of the $K_{mts}$ coefficient is rounded to the tenth decimal place, there will be no discrepancy in the final value of the normative monetary valuation of the land plot from the same calculation without rounding the value of the $K_{mts}$ coefficient, regardless of values of other components of such calculation. Since the conditional land plot with an area of 10,000 hectares is larger than the largest agricultural land plot registered in the State Land Cadastre, we used
rounding to the tenth decimal place as part of the development of technical documentation on land management regarding the normative monetary valuation of land plots of the Hleiuvsatska rural territorial community of the Dnipropetrovska oblast [1].

The formula for calculating the coefficient of $K_{mts}$ for agricultural land is given in clause 12 of the Methodology, but it is not specified how to calculate this coefficient, if there are several agricultural production groups of soils and/or several types of land on the land plot. Clause 20 of the Methodology specifies that: “in the case of the location of land plots within several assessment districts and/or administrative-territorial units and/or forest categories, the normative monetary valuation of such land plots is determined as the sum of the normative monetary valuations of their parts located in the respective land assessment districts and/or administrative-territorial units, and/or forest categories”, but nothing is said about the above-mentioned cases, which occur much more often. Accordingly, the question arises as to how to calculate the normative monetary value of land plots, within which there are different types of land and different agricultural groups of soils [1].

The first problem in such a case is that the spatial location of land types within land plots is not available among the information of the State Land Cadastre. That is, there is no spatial accounting of land types, which makes it impossible to establish a spatial intersection between land types and soils in the presence of different types of lands and different agro-production groups of soils at the same time. Therefore, as part of the work on the normative monetary valuation of the lands of the Hleiuvsatska rural territorial community, we made a decision to assume that the soils are evenly distributed among all land types, because otherwise it is impossible to calculate the value of the normative monetary valuation of land plots on which there are simultaneously different land types and different agricultural production groups of soils according to the current Methodology. This is not so much a shortcoming of the Methodology as a global problem, since there is no spatial accounting of land types in Ukraine. However, we believe that the Methodology should contain an indication of how the normative monetary value of such land plots is calculated.
The second problem is that the order of calculation is not determined by the Methodology. In the third clause of the methodology, the formula is given, according to which the normative monetary value of the land plot is calculated, that is, the plot itself, not its parts, not the type of land and not the agricultural group of soils. However, for land plots for which $K_{m4}$ is determined by assessment districts, the Methodology allows determining the normative monetary valuation for parts of such a land plot if such a land plot is located simultaneously in several assessment districts. On the other hand, for agricultural land plots, the possibility of defining an NMV for a part of the land plot is not provided for [1].

There are two approaches to calculating the normative monetary valuation of land plots according to the formula given in point 3 of the Methodology. One of them is that, by analogy with assessment districts, it is possible to calculate the normative monetary assessment of various land types. If there are different soils within these land types, also for each soil within each of the land types. Then, based on the sum of all the obtained values, find the normative monetary value of the land plot. Another way is to determine the $K_{mts}$ for the land plot as a whole by calculating the weighted average $K_{mts}$ of each of the land types based on the weighted average $K_{mts}$ of each of the agricultural groups, after which, based on the weighted average $K_{mts}$ of each of the land types, determine the $K_{mts}$ of the land plot and carry out the calculation of the normative monetary valuation of the land plot. Mathematically, each of these examples is correct, but due to rounding at different stages of calculations, the result of calculations by both methods may have differences [1].

We also encountered another technical problem in the process of developing a normative monetary valuation of land plots of the Hleiuivatska rural territorial community, namely, the fact that the soil data received from the State Geocadastre may be inaccurate and contain errors. The first problem we encountered is manifested at the edges of land massifs, namely situations arise when soil maps do not cover parts of land plots on the edges of land massifs. Most of such parts do not exceed 1% of the area of the land plot, and accordingly, due to the inaccuracy of cartographic materials, it is essential to assume that the soil on this part of the land plot is the same
as on the adjacent part of the land plot, as it is situated along its border and is only several meters wide. However, it is impossible to reliably establish this fact without soil surveys, and in accordance with Clause 12 of the Methodology, if the agricultural production group of soils or its quality score for the land plot or its part is not determined, the quality score of the natural-agricultural district for the corresponding land type is used. Also, based on the requirements for automation, we decided to accept the quality score of the natural-agricultural district for all parts of land plots, which are not covered by soil maps, regardless of their area [1].

Another problem that we encountered in the process of working on the development of technical documentation on the normative monetary valuation of land plots of the Hleiuvatska rural territorial community is possible errors in the quality scores of agricultural groups of soils. For example, in the materials provided by the State Service of Geodesy, Cartography and Cadastre of Ukraine regarding agricultural production groups of soils in the territory of the Dnipropetrovska oblast, for part of the agricultural production groups of soils, the quality score for all agricultural land types is the same, for example, for the agricultural production group of soils 65e (chernozem, ordinary weakly washed heavy loam) quality score in the provided data, for all lands is 38, and for the agricultural group of soils 60e (chernozems, ordinary medium-humus and low-humus heavy loams and their residual and weakly saline variations), the score of pasture quality is equal to the score of arable land (45) and is greater than the scores of gardens (40) and haymakers (24). This situation is repeated for the quality scores of other agricultural groups of soils.

This is not a problem or shortcoming related to the Methodology, but it leads to a distortion of the results of the normative monetary valuation of land plots, when the normative monetary valuation of a less productive type of land approaches the normative monetary valuation of a more productive type of land or exceeds it. We consider such data to be erroneous, because pastures generate the lowest rental income among all agricultural lands. Accordingly, their quality score on highly productive soils should not be equal to the quality score of arable land and higher
than the quality score of gardens. If you turn to Appendix 9 of the Methodology, which lists the quality scores of land types for each natural-agricultural district, then for the most part the quality score of pastures is the lowest, only sometimes being equal to or greater than the quality score of haymakers in the corresponding natural-agricultural district [1]. This fact confirms our assumptions about errors in the soil data, the origin of which is unclear to us.

There is one more critical question regarding the quality scores of agricultural groups of soils. Normative monetary valuation in accordance with Article 1 of the Law of Ukraine “On Land Valuation” is “capitalized rental income from a land plot, determined according to established and approved standards”, and quality scores are, according to the Methodology, the only indicator that determines the rental income from the use of agricultural land plots [1, 6]. Accordingly, their reliability is key to the correct determination of the normative monetary valuation of land plots. Based on our research, we claim that the quality ratings of agricultural groups of soils currently do not correspond to the modern realities of agricultural land use.

Quality points of agricultural production groups of soils, approved by Resolution No. 1147 of November 3, 2021 [1], were last updated in the 1980s and were formed based on a set of the most common agricultural crops grown in each natural-agricultural district. Agricultural production has undergone significant changes for more than thirty years, namely, the set of crops, their varieties and growing technologies have changed, as well as the yield of these crops has increased while increasing the efficiency of the technological process. Accordingly, quality scores must be updated, also taking into account the presence and absence of irrigation or drainage on land plots. That is, it is necessary to differentiate the quality score of agricultural production groups of soils in terms of availability of access to reclamation networks.

Quality points of agricultural production groups of soils are not the only indicator that determines rental income from the use of agricultural land plots, but in general the only indicator that expresses income within the framework of the Methodology, which currently unites all land plots regardless of their location and
intended purpose. If we talk about residential and public build up areas, as well as industrial lands, then for them, the normative monetary value is determined according to the norm of capitalized rental income, which is determined according to Appendices 1 and 2 of the Methodology, and this is a fixed tabular value. A. Tretyak, V. Tretyak and A. Volska criticize this approach, because: “the new Methodology determines that for the lands of populated areas, the basis of assessment is not the rental income, but the amount of “expenses for the development of the territory” that were used in the previous methodology”, on the other hand, the Law of Ukraine “On Land Assessment” determines that NGO is a capitalized rental income [1, 5, 6]. This problem is exacerbated by the fact that, while previously the method required for each settlement a separate calculation of “expenses for the development of the territory”, from which the norm of capitalized rental income was determined, now this norm is a fixed tabular value, which is the only one for all land plots in the territory of the territorial community, and also differs in value depending on the population of the administrative centre of the community [1, 2]. Therefore, the norm is completely detached from the actual potential yield of land plots of a separate settlement, for which the normative monetary value is determined.

Let’s give one example. In the process of developing technical documentation on normative monetary valuation of land plots on the territory of the Hleiuuvatska rural territorial community and studying the territories of neighboring communities, we encountered an interesting case. For example, quarries and dumps of PJSC “Northern Mining and Processing Plant” and PJSC “ARCELORMITTAL Kryvyyi Rih” are located in the territories of several communities. At the same time, on the territory of the Hleiuuvatska rural territorial community, the basic value, or the norm of capitalized rental income, of such a plot of land in accordance with Appendix 1 of the Methodology is UAH 87 per m², on the other hand, a similar value for the same industrial object on the territory of the Novolativska rural territorial community is UAH 76 per m² [1].

In order to understand how these values are determined, please refer to Appendix 1 of the Methodology. So, the norm of capitalized rental income for land
plots on which such industrial facilities are located is determined by the population, not even of the entire community, but only of its administrative centre. For example, as the population of Hleiuvatka village is more than a thousand people, the norm of capitalized rental income for land plots on the territory of the Hleiuvatska rural territorial community is UAH 87 per m², and on the territory of Novolativska – UAH 76 per m² [1]. Therefore, we conclude that, according to the current Methodology, the norm of capitalized rental income for land plots on which industrial objects of the same type are located is determined not by the profitability of these objects, but by the population of the administrative centre of the territorial community in which this land plot is located. Accordingly, we assert that there is no economic basis, not to mention the potential profitability of land plots, when determining the norm of capitalized rental income. Such an approach distorts the NMV indicators of land plots, which entails biased amounts of land tax and rent for land use.

Another problem is that the normative monetary valuation of land plots is not built on the basis of the potential income received from the use of the land plot, not only does not contribute to the capitalization of land plots, but also often devalues them. The approach, according to which the maximum value of the indexation coefficient is clearly defined by Article 289 of the Tax Code of Ukraine (15%), is also questionable, because under such an approach, land plots depreciate in the event that inflation exceeds 15% [7].

As for agricultural lands, according to the notification of the State Geocadastre, they are indexed with a value of 100 percent, so they are not actually indexed [8]. Accordingly, these land plots depreciate from year to year, as a result of which the local tax base in this part does not grow, so the growth of revenues to local budgets lags far behind economic realities. That is, tax revenues from the payment of land fees in absolute numbers grow more slowly than inflation, and this issue is especially acute in rural communities.

For example, the normative monetary valuation of agricultural land plots on average in Ukraine is close to UAH 30,000 per ha. At least 20 million hectares of
arable land are cultivated in the controlled territory. If we assume that the average rate of land tax is 1%, and inflation for the year was 10%, then as a result, we get a shortfall of UAH 600 million by local budgets on a state scale.

Regarding the devaluation of land plots, in the context of agricultural land, the question arises, what are the indicators of capitalized rental income standards for agricultural land in the amount of UAH 27,520 per ha and a separate indicator for arable land in the cross-section of regions, which for the Dnipropetrovsk oblast is UAH 30,251 per ha [1]. The Methodology does not answer it. Accordingly, we get an average valuation of arable land, which is about UAH 30,000 per ha, or approximately $800 ($1,100 at the time the Methodology was approved) per ha. In 1995, V. Mesel-Veseliak and M. Fedorov, on the basis of the economic assessment of agricultural land in Ukraine carried out in the late 1980s, calculated the normative monetary valuation of arable land at the level of $3,564 per ha on average in Ukraine [9]. Taking into account that from 1995 to 2021, when the Methodology was approved, the economy of Ukraine, and with it the agricultural sector, grew and developed, and the well-being of Ukrainians grew, the drop in the normative monetary value by 3-4 times indicates the possible inaccuracy of the initial data and methodological approaches and needs further research.

Also, the problem of the topological connection of community boundaries and the boundaries of agricultural groups of soils, related to the formation of an electronic document in the form of an XML file, needs to be solved. In order to preserve the topology of the community boundary and the boundaries of agricultural groups of soils, the points of intersection of the boundaries of agricultural groups of soils with the boundaries of settlements should belong to both entities. However, if you calculate the area of the community taking into account the newly formed coordinates of the points of intersection of agricultural production groups of soils and the community boundary, the area of the community differs from the legally defined one, since the area of the community is calculated based on the coordinates of the turning points of the community border without taking into account any other points.
Conclusions and proposals. In the process of developing technical documentation on the normative monetary valuation of lands of the Hleiuvska rural territorial community, we conducted a study and analysis of methodological, economic and regulatory problems of determining the normative monetary valuation of land plots according to the Methodology of normative monetary valuation of land plots, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 1147 of November 3, 2021. We have identified a number of methodological, technical and economic problems and inaccuracies in the Methodology, which complicate the development of technical documentation in accordance with it, and also call into question the economic correspondence of the results with reality.

The norm of capitalized rental income for land plots on which industrial facilities of the same type are located is not determined by the potential income from the use of land plots and, accordingly, the normative monetary assessment, which in accordance with the Law is based on the rent principle, has no reference actual to the rent from use of land plots.

All of the above shortcomings indicate the need to rethink the Methodology, because it should really be based on the rent basis. The use of this Methodology for calculating NMV in communities carries an additional threat of a significant decrease in the tax income in territorial communities and has a negative impact on the land plots market. Also, without eliminating these shortcomings, it is impractical to proceed to a mass assessment of land plots, because it will not only retain all the identified shortcomings and problems but will also contribute to their further accumulation.

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ПРОБЛЕМНІ ПИТАННЯ ТА ВИКЛИКИ ЩОДО ВИЗНАЧЕННЯ НОРМАТИВНОЇ ГРОШОВОЇ ОЦІНКИ ЗЕМЕЛЬНИХ ДІЯНЬКУ У МЕЖАХ ТЕРИТОРІЇ ТЕРИТОРІАЛЬНИХ ГРОМАД

Анотація. Здійснено детальне дослідження та аналіз затвердженої Постановою Кабінету Міністрів України від 3 листопада 2021 р. № 1147 методики нормативної грошової оцінки земельних ділянок щодо можливості її застосування, та виявлення проблем, що виникають у процесі її реалізації. Розглянуто основні аспекти нормативної грошової оцінки земельних ділянок та її вплив на розвиток територіальних громад в Україні. Вивчено та проаналізовано методичні, економічні та нормативні проблеми визначення нормативної грошової оцінки земельних ділянок за чинною методикою як важливого економічного інструменту регулювання земельних відносин та економічного стимулювання раціонального використання і охорони земель.

Виявлено методологічні та технічні недоліки в процесі визначення нормативної грошової оцінки земельних ділянок територіальних громад та обчисленні розмірів нормативної грошової оцінки окремої земельної ділянки.

Встановлено, що хоча відповідно до Закону України «Про оцінку земель» нормативна грошова оцінка є «капіталізованим рентним доходом», чинна методика її визначення базується не на доході, що може бути отриманий від використання земельної ділянки, а на фіксованих табличних нормативах, які диференційовані за чисельністю населення адміністративного центру громади.
Лише для земель сільськогосподарського призначення доходи від їх використання враховуються чинною методикою, проте вони враховуються через бали бонітетів ґрунтів, які не актуалізувалися з 1980-х років.

Виявлено, що внаслідок фактично відсутньої індексації нормативної грошової оцінки сільськогосподарських угідь, надходження місцевих бюджетів щороку не зростають щонайменше на 0,6 млрд грн у масштабах України.

Ключові слова: нормативна грошова оцінка, земельні ділянки, територіальні громади, місцеві бюджети, методичні рекомендації