## APPLICATION OF QUALIMETRY TO THE ASSESSMENT OF AGRICULTURAL LAND IN CONDITIONS OF UNDERDEVELOPMENT OF THE LAND MARKET

## Daria V. Baranova

Saint Petersburg State Agrarian University, 2, Peterburgskoe shosse St., Pushkin, Saint Petersburg, 196601, Russia, Ph. D. Student, Department of Land Management, phone: (996)945-56-17, email: evbarano-va2010@yandex.ru

## Victoria A. Pavlova

Saint Petersburg State Agrarian University, 2, Peterburgskoe shosse St., Pushkin, Saint Petersburg, 196601, Russia, Ph. D., Head of the Department of Land Management, phone: (981)804-94-72, email: vikalpav@mail.ru

Due to the underdevelopment of the land market, a huge number of problems in the field of cadastral valuation of agricultural land, there is a need to solve them and to increase the reliability of the evaluation results. In the conditions of the unformed land market, the authors propose the use of the method of qualimetric modeling to assess the lands of this category. In order to implement it, the authors have developed a "tree" of price-forming factors included in the evaluation model, as well as qualimetric scales for each factor, on the basis of which an integral quality indicator is calculated and an optimal dependence reflecting the influence of "price-quality" is revealed. The results of the study allow us to conclude that it is possible to use this method and obtain the value of agricultural land, which is able to reflect modern market realities, create incentives for rational land use, and prevent the disposal of land of this category from economic turnover.

**Keywords:** qualimetric modeling, agricultural land, cadastral assessment, «tree» of price-forming factors, integral quality indicator

## REFERENCES

1. Official website of the Federal Service for State Registration, Cadastre and Cartography. (n. d.). Retrieved from https://rosreestr.ru [in Russian] (accessed October 18, 2021).

2. Sapozhnikov, P. M. (2019). The main problems in carrying out the state cadastral assessment of agricultural land. *Imushchestvennye otnosheniya v Rossiyskoy Federatsii [Property Relations in the Russian Federation]*, 12(219), 111–115 [in Russian].

3. Gribovsky, S. V. (2019). On the quality of cadastral valuation of real estate for tax purposes. *Imush-chestvennye otnosheniya v Rossiyskoy Federatsii [Property Relations in the Russian Federation]*, 9(216), 24–29 [in Russian].

4. Bykova, E. N., & Butina, V. V. (2014). Determination of the cadastral value of agricultural land, taking into account encumbrances in their use. *Inzhenernyy vestnik Dona [Engineering Bulletin of the Don]*, 2, 70–85 [in Russian].

5. Azgaldov, G. G., & Raichman, E. P. (1973). *O kvalimetrii [On qualimetry]*. Moscow: Standards Publ., p. 172 [in Russian].

6. Makarov, V. M., & Semeykina, N. M. (2016). Qualimetric modeling in the evaluation of land plots. *Rossiyskoe obshchestvo otsenshchikov [Russian Society of Appraisers]*, 83, 26–39 [in Russian].

7. Margaryan, R. A. (2019). Problems and prospects of property taxation in the Republic of Armenia. *Nalogi i nalogooblozhenie [Taxes and Taxation]*, 1, 1–7 [in Russian].

8. Hovsepyan, E. V. (2016). Application of the information system in real estate management in the Republic of Armenia. *Vestnik AGTU. Seriya: Ekonomika [Bulletin of the AGTU. Series: Economics]*, 4, 22–32 [in Russian].

9. Jorge, I., Juan, C., & Favian, G. (2019). A machine learning approach to big data regression analysis of real estate prices for inferential and predictive purposes. *Journal of Property Research*, *36*, 59–96.

10. Dubrovsky, A. V., Ilyinykh, A. L., Malygina, O. I., Moskvin, V. N., & Vishnyakova, A. V. (2019). Analysis of price-forming factors influencing the cadastral value of real estate. *Vestnik SGUGiT [Vestnik SSUGT]*, 24(2), 150–169 [in Russian].

11. Makht, V. A., Rudy, V. A., & Osintseva, N. V. (2018). Uchet i otsenka sel'skokhozyaystvennykh zemel' po kachestvu i vidam ispol'zovaniya [Accounting and evaluation of agricultural land by quality and types of use]. Omsk: KAN Publishing Center, 72 p. [in Russian].

12. Sinitsa, Yu. S., & Komarov, S. I. (2020). Evaluation of agricultural lands: Russian and foreign experience. *Imushchestvennye otnosheniya v Rossiyskoy Federatsii [Property Relations in the Russian Federation]*, 6(225), 42–49 [in Russian].

13. Moskvin, V. N., Boikov, K. S., Novoselov, Yu. A., & Sokolova, T. A. (2014). Assessment of cadastral and market value of real estate objects by expert methods. *Izvestiya vuzov. Geodeziya i aerofotos"emka [Izvestiya Vuzov. Geodesy and Aerophotosurveying]*, 4, 189–194 [in Russian].

14. Bykova, E. N., & Dyachkova, I. S. (2021). Application of economic and mathematical methods for modeling the size of the territory of cultural heritage objects (on the example of the city of Orenburg). *Izvestiya vuzov. Geodeziya i aerofotos"emka [Izvestiya vuzov. Geodesy and Aerophotosurveying]*, 65(2), 209–220

[in Russian].

15. Baranova, D. V., & Pavlova, V. A. (2021). Qualimetric modeling of cadastral valuation of agricultural land. In Sbornik materialov mezhdunarodnoy nauchno-prakticheskoy konferentsii molodykh uchenykh i obuchayushchikhsya: Ch. 2. Intellektual'nyy potentsial molodykh uchenykh kak drayver razvitiya APK [Proceedings of the International Scientific and Practical Conference of Young Scientists and Students: Part 2. Intellectual Potential of Young Scientists as a Driver of Agricultural Development] (pp. 120–124). St. Petersburg: SPbGAU Publ. [in Russian].

Received 25.11.2021

© D. V. Baranova, V. A. Pavlova, 2022