

ABOUT CONCEPTS AND TENDENCIES OF DEVELOPMENT OF LAND MANAGEMENT, CADASTRE AND LAND MONITORING

Alexander P. Karpik

Siberian State University of Geosystems and Technologies, 10, Plakhotnogo St., Novosibirsk, 630108, Russia, D. Sc., Professor, Rector, phone: (383)343-39-37, e-mail: rector@ssga.ru

Valeriy B. Zharnikov

Siberian State University of Geosystems and Technologies, 630108, Russia, Novosibirsk, 10, Plakhotnogo St., Ph. D., Professor, Department of Cadastre and Territorial Planning, phone: (383)361-05-66, e-mail: v.b.jarnikov@ssga.ru

The aim of the work is to perform analysis of methodological basis of the new scientific direction "Land management, cadastre and land monitoring", which appeared in the process of the land reform of 90-th and nowadays became one of the accepted science about Earth together with geodesy, geoinformatics and geoecology. The methodological basis of the science are still problematic. For nearly 30 years of its existence the given sphere did not receive full development of its methodological basis, which are especially required in considering inner laws of the science and developing new concepts. In particular it concerns social practice of realization of the given knowledge in spatial development solutions on the basis of integration of "big data" of land management, cadastre, land monitoring and urban planning activity. Methodological principles are necessary in determining its place among the others, especially taking into account its natural and technological character, and also in analyzing dissertation and scientific works which are close in content, research methods and object-and-subject fields. As the new results the article gives: the formulation of basic principles, concepts and regularities of this scientific direction development; the conclusions about its systematic content and basic components; assessment basis of general influence on the object under research; interrelation with the other sciences about the Earth.

Key words: regularity, concept, scientific knowledge, methodology, land management, cadastre, history, development stage.

REFERENCES

1. Lebedev, S. A. (Ed.). (2006). *Filosofiya matematiki i tekhnicheskikh nauk [Philosophy of Mathematics and Engineering]*. Moscow: Akademicheskiy Proekt Publ., 779 p. [in Russian].
2. Gorokhov, V. G. (2007). *Osnovy filosofii tekhniki i tekhnicheskikh nauk [Fundamentals of the philosophy of engineering and technical sciences]*. Moscow: Gardarika Publ., 335 p. [in Russian].
3. Ctepin, V. S. (2000). *Teoreticheskoe znanie. Struktura, istoricheskaya evolyutsiya [Theoretical knowledge. Structure, historical evolution]*. Moscow: Progress–Traditsiya Publ., 744 p. [in Russian].
4. Lakatos, I., & Musgrave, A. (Eds.). (1970). *Criticism and the Growth of Knowledge*. Cambridge: CUP (esp. papers by Feyerabend, Kuhn & Watkins).
5. Weber, M. (1949). *The Methodology of the Social Sciences*, N. Y: Macmillan.
6. Baeva, L. V., Karabushchenko, P. L., & Romanova, A. P. (2006). *Filosofiya nauki [Philosophy of Science]*. Astrakhan: ID "Astrakhanskiy universitet", 177 p. [in Russian].
7. Passport of a scientific specialty 25.00.26 – Land management, cadastre and land monitoring. (n. d.). Retrieved from <http://arhvak.minobrnauki.gov.ru/>.
8. Volkov, S. N. (2001). *Zemleustroystvo. Teoreticheskie osnovy zemleustroystva. T. 1 [Land management. Theoretical foundations of land management. Vol. 1]*. Moscow: Kolos Publ., 496 p. [in Russian].

9. Udachin, S. A. (1951). *Zemleustroitel'noe proektirovaniye [Land management design]*. Moscow: Gossel'khozizdat Publ., 552 p. [in Russian].
10. Volkov, S. N. (2013). *Zemleustroystvo [Land management]*. Moscow: GUZ Publ., 992 p. [in Russian].
11. Karpik, A. P. (2016). Modern conceptual approaches to the quality of education. In *Sbornik materialov Mezhdunarodnoy nauchno-metodicheskoy konferentsii: Ch. 1. Aktual'nye voprosy obrazovaniya. Sovremennye tendentsii povysheniya kachestva nepreryvnogo obrazovaniya [Proceedings of International Scientific and Methodical Conference: Part 1. Actual Issues of Education. Current trends in Improving the Quality of Continuing Education]* (pp. 3–5). Novosibirsk: SSUGT Publ. [in Russian].
12. Obidenko, V. I., & Ascheulov, V. A. (2016). Some aspects of the organization of the educational process and the formation of the main professional programs of training areas within the framework of the Federal State Educational Standard. In *Sbornik materialov Mezhdunarodnoy nauchno-metodicheskoy konferentsii: Ch. 1. Aktual'nye voprosy obrazovaniya. Sovremennye tendentsii povysheniya kachestva nepreryvnogo obrazovaniya [Proceedings of International Scientific and Methodical Conference: Part 1. Actual Issues of Education. Current trends in Improving the Quality of Continuing Education]* (pp. 6–19). Novosibirsk: SSUGT Publ. [in Russian].
13. Varlamov, A. A. (2003). *Zemel'nyy kadastr. Teoreticheskie osnovy gosudarstvennogo zemel'nogo kadastra. T. 1 [Land Cadastre. The theoretical foundations of the state land cadastre. Vol. 1]*. Moscow: KolosS Publ., 383 p. [in Russian].
14. Varlamov, A. A. (2000). *Istoriya zemel'nykh otnosheniy i zemleustroystva [The history of land relations and land management]*. Moscow: Kolos Publ., 336 p. [in Russian].
15. Ustavich, G. A., Posivaylo, Ya. G., Dubrovsky, A. V., Akhmetov, B. Zh., & Posivaylo, A. O. (2016). Zoning and delimitation lands, adjacent to nuclear test sites, for purposes of commercial using (for example Semipalatinsk test site territory). *Vestnik SGUGiT [Vestnik SSUGT]*, 4(36), 145–160 [in Russian].
16. Sneg, M., & Khokhlov, A. (2016). What can we offer to the world? *Ekspert [Expert]*, No. 38-39, P. 44–50 [in Russian].
17. Teterin, G. N. (2018). *Istoriya geodezii, kartografii i zemleustroystva v Rossii s drevneyshikh vremen i do nashikh dney (XI–XXI vv.) [The history of geodesy, cartography and land management in Russia from ancient times to the present day (XI–XXI centuries)]*. Novosibirsk: OOO "Al'yans-Region", 344 p. [in Russian].
18. Varlamov, A. A., & Gal'chenko, S. A. (2012). *Gosudarstvennyy kadastr nedvizhimosti [State Real Estate Cadastre]*. Moscow: KolosS Publ., 679 p. [in Russian].
19. Maslov, A. V., Gorokhov, G. I., Ktitorov, E. M., & Yunusov, A. G. (1976). *Geodezicheskie raboty pri zemleustroystve [Geodetic works in land management]*. Moscow: Nedra Publ., 256 p. [in Russian].
20. Skalaban, V. D. (2009). *Agroekologicheskie dannye zemel'nogo kadastra v strategii ustoychivogo razvitiya Rossii [Agroecological data of the land cadastre in the strategy of sustainable development of Russia]*. Moscow: Akademicheskiy Proekt; Al'ma Mater Publ., 255 p. [in Russian].
21. Erofeev, B. V. (1998). *Zemel'noe pravo [Land law]*. G. V. Chubukov (Ed.). Moscow: Novyy Yurist Publ., 544 p. [in Russian].
22. Bogolyubov, S. A., & Zolotova, O. A. (2018). *Zemel'noe i zakonodatel'stvo [Land and law]* (2nd ed.). Moscow: Prospekt Publ., 472 p. [in Russian].
23. Sizov, A. P. (2009). *Monitoring i okhrana gorodskikh zemel' [Monitoring and protection of urban land]*. Moscow: MIIGAiK Publ., 264 p. [in Russian].
24. Ustavich, G. A. (2012). *Geodeziya: Kn. 1 [Geodesy: Book 1]*. Novosibirsk: SSGA Publ., 352 p. [in Russian].

25. Karpik, A. P., & Lisitskiy, D. V. (2009). Electronic geospace -essence and conceptual framework. *Geodeziya i kartografiya [Geodesy and Cartography]*, 5, 41–44 [in Russian].
26. Komissarov, A. V., & Kulik, E. N. (2016). *Avtomatizirovannye tekhnologii sbora i obrabotki prostranstvennykh dannykh [Automated technologies for the collection and processing of spatial data]*. Novosibirsk: SSUGT Publ., 307 p. [in Russian].
27. Lisitsky, D. V., & Chernov, A. V. (2018). Theoretical basis of three-dimensional cadastre of real estate objects. *Vestnik SGUGiT [Vestnik SSUGT]*, 23(2), 153–170 [in Russian].
28. Avrunev, E. I., & Parkhomenko, I. V. (2016). Coordination control of state land surveillance. *Vestnik SGUGiT [Vestnik SSUGT]*, 2(34), 150–157 [in Russian].
29. Torsunova, O. F. (2017). Investigation of possibility of space photo application for border determination of special terrestrial condition zones. *Vestnik SGUGiT [Vestnik SSUGT]*, 22(3), 180–193 [in Russian].
30. Koneva, A. V. (2019). Touristic cadastre and its objects as topical area of cadastral activity. *Vestnik SGUGiT [Vestnik SSUGT]*, 24(1), 204–219 [in Russian].
31. Zhigulina, T. N., Meretsky, V. A., Vorobyov, D. A., & Kiseleva, A. O. (2018). Patterns of the state cadastral system development. *Vestnik SGUGiT [Vestnik SSUGT]*, 23(4), 190–202 [in Russian].
32. Karpik, A. P., Lisitsky, D. V., Baykov, K. S., Osipov, A. G., & Savinykh, V. N. (2017). Geospatial discourse of forward-looking and breaking-through way of thinking *Vestnik SGUGiT [Vestnik SSUGT]*, 22(4), 53–67 [in Russian].
33. Zharnikov, V. B. (2014). Sociocultural dimension of science. *Vestnik SGGA [Vestnik SSGA]*, 2(26), 117–123 [in Russian].
34. Markov, Yu. G. (2009). *Problemy ekorazvitiya sovremennoego obshchestva [Problems of eco-development of modern society]*. Novosibirsk: GPNTB SO RAN Publ., 163 p. [in Russian].
35. Chepurin, M. N., & Kiseleva, E. A. (Eds.). (2000). *Kurs ekonomiceskoy teorii [Economic theory course]* (4th ed.). Kirov: ASA Publ., 752 p. [in Russian].
36. Malinnikov, V. A., Stetsenko, A. F., Altynov, A. E., & Popov, S. M. (2009). *Monitoring prirodnoy sredy aerokosmicheskimi sredstvami [Environmental monitoring by aerospace means]*. Moscow: MIIGAiK Publ., 140 p. [in Russian].
37. Zharnikov, V. B., & Larionov, Yu. S. (2017). Soil fertility monitoring of agricultural purpose lands as a mechanism of their rational use. *Vestnik SGUGiT [Vestnik SSUGT]*, 22(1), 203–212 [in Russian].
38. Dubrovsky, A. V., & Kustysheva, I. N. (2016). Methodical and technological support of efficient land management in hydrocarbon extraction considering regional features of the Far North *Vestnik SGUGiT [Vestnik SSUGT]*, 3(35), 128–138 [in Russian].
39. Decree of the Government of the Russian Federation of February 13, 2019 No. 207-r. Russia's spatial development strategy for the period up to 2025. Retrieved from ConsultantPlus online database [in Russian].
40. Federal Service for State Registration, Cadastre and Cartography (Rosreestr). (n. d.). Retrieved from <https://rosreestr.ru/site/> [in Russian].
41. Razumov, V. V. (2018). *Masshtaby i opasnost' navodneniy v regionakh Rossii [The extent and danger of flooding in the regions of Russia]*. Moscow: FGBU NII MChS Publ., 364 p. [in Russian].

Received 11.06.2019

© A. P. Karpik, V. B. Zharnikov, 2019