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METHODOLOGICAL ASPECTS OF ORGANIC PRODUCTION AND BALANCED NATURE MANAGEMENT

The role of the Ukrainian school of physical economy as one of the important methodological aspects of building a system of organic production and sustainable use of nature in Ukraine and the world is highlighted. The authors draw attention to the importance of the close connection of specialized (scientific) knowledge with philosophical knowledge as an important basis for the harmonious coexistence of man and nature in modern conditions and in the future. It is emphasized that the content of this science, its focus are the sharpest weapons of man in the struggle for survival, for better adaptation to environmental conditions. The range of problems that become obstacles to the realization of the goals and objectives of organic production and sustainable use of nature in modern Ukraine is outlined. The problem of interaction of special sciences with philosophy, saturation of concrete-scientific knowledge with provisions in which certain philosophical ideas are reflected in a certain way is covered. The article substantiates the role of the philosophy of organic production and sustainable use of nature in changing the attitude of man and society not only to nature but also their own physical, intellectual and moral and spiritual health from consuming and contemptuous to harmonious, where man realizes himself an integral part of space processes.

Organic production is considered an integral part of agricultural production, which is one of the main features of human existence, humanity and is an integral part of the biosphere, revealing the ontological nature of its functioning. It is emphasized that the unique social role of organic production and sustainable use of nature is organically linked to the strategy of sustainable development and is an important condition for its construction. The authors emphasize the importance of the doctrine of physical economy in revealing the understanding of the relationship of universal processes, in particular energetic, with the processes on the planet Earth through the prism of flora, fauna and humus layer as storage and transformers of space, including solar energy.

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Key words: philosophy of organic production and sustainable use of nature, Ukrainian school of physical economy, teachings of physiocrats, science, agriculture, organic production, balanced (sustainable) development, soil, humus layer, solar energy, life, methodological principles of organic production and sustainable use of nature.

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Методологічні аспекти органічного виробництва та збалансованого природокористування

Висвітлено роль вчення української школи фізичної економії як одного з вагомих методологічних аспектів побудови системи органічного виробництва та збалансованого природокористування в Україні та світі. Автори звертають увагу на вагомість тісного зв'язку спеціалізованого (наукового) знання з філософським знанням як вагомої підстави для гармонійного співіснування людини і природи в сучасних умовах та майбутньому. Наголошено, що зміст цієї науки, її спрямованість становлять найгострішу зброю людини в боротьбі за виживання, за краще пристосування до умов навколишнього оточення. Окреслено коло проблем, які стають перешкодами на шляху реалізації цілей і завдань органічного виробництва та збалансованого природокористування в сучасній Україні. Висвітлено проблему взаємодії спеціальних наук з філософією, насичення конкретно-наукових знань положеннями, в яких певним чином відображаються ті чи інші філософські ідеї. В статті обґрунтовано роль філософії органічного виробництва та збалансованого природокористування у зміні ставлення людини і суспільства не тільки до навколишньої природи, але й власного фізичного, інтелектуального та морально-духовного здоров'я від споживацького й зневажливого до гармонійного, де людина усвідомлює себе невід'ємною частиною космічних процесів.

Органічне виробництво розглядається як складова частина сільськогосподарського виробництва, яке є однією з основних ознак буття людини і людства та виступає складовою частиною біосфери, виявляючи онтологічний характер його функціонування. Наголошено, що виняткова за своїм значенням для людства соціальна роль органічного виробництва і збалансованого природокористування органічно пов'язана зі стратегією сталого розвитку і є вагомою умовою його побудови. Автори підкреслюють значення вчення фізичної економії у розкритті розуміння взаємозв'язку вселенських процесів, зокрема енергетичних, з процесами на планеті Земля крізь призму функціонування рослинного та тваринного світу і гумусного шару як накопичувачів та трансформаторів космічної, зокрема сонячної енергії.

Ключові слова: філософія органічного виробництва і збалансованого природокористування, українська школа фізичної економії, вчення фізіократів,

наука, сільське господарство, органічне виробництво, збалансований (сталий) розвиток, ґрунт, гумусний шар, сонячна енергія, буття, методологічні принципи органічного виробництва і збалансованого природокористування.

Introduction. The philosophy of organic production and sustainable use of nature is a specific type of scientific knowledge related to agriculture, crop production, agricultural science in general. Its role is unique because it combines the spiritual meanings and material dimensions of earthly and universal existence. And at the heart of these dimensions is Man, his health and his future in union with Nature. It is no exaggeration to say that the content of this science, its focus are the sharpest weapons of man in the struggle for survival, for better adaptation to environmental conditions. After all, the ancestor of life on Earth is a plant that is directly sculpted by the Sun [29, p. 75].

The whole history of the development of scientific research in the field of organic production and sustainable use of nature is a clear evidence of how human cognitive abilities can serve the practice of agricultural production. This is convincingly demonstrated by the example of the Ukrainian School of Physical Economics (S. Podolynskyi, V. Vernadskyii, M. Rudenko), whose worldview and scientific discoveries are of universal importance and are, according to Professor Volodymyr Shevchuk, Chairman of the Serhiy Podolynskyi Scientific Society, "Ukrainian dimension of universal saving knowledge "[29, p. 5].

Materials and methods. As we know, the general scientific level of methodology is a synthesis of specific scientific and philosophical knowledge. The properties of forms and means of general scientific level are intermediate in terms of qualitative characteristics of similar phenomena of other stages of scientific methodology, so the latest general scientific constructs of theory play a non-traditional intermediate link between specific sciences and philosophical, methodological knowledge, the core of which is dialectical theory. And it is the dialectic, "which is a creative method of metaphysics" [29, p. 510]. Metaphysics, in turn, seeks the unchanging basis of the world (substance) and only these searches can be considered philosophy [29, p. 510]. And when it comes to general social practice, we must use scientific and theoretical opportunities to resolve the contradictions that exist. After all, the whole history of modern civilization, agriculture in the first place, is characterized by efforts to overcome the great contradiction between, on the one hand, the desire to get the highest harvest, give bread to people, and on the other hand, preserve and increase soil fertility – the most valuable and irreplaceable, natural, God-given

resource, the accumulator of solar energy, the basis of life on planet Earth. Because "all kinds of value are generated by land and only land" [29, p. 352]. Answering the question of what physical economy is, the classic of the Ukrainian school of physical economy M. Rudenko emphasizes that “it should become a reliable bridge between social and natural sciences. And if we fail to build him, the road to the future will be covered with dead sands of vast deserts "[29, p. 353].

One of the directions of science integration is strengthening the interaction between philosophical and non-philosophical (special) knowledge, increase the diversity of channels and forms of communication between them, which is a natural process. By studying the phenomena of the world and penetrating into their essence, philosophy necessarily delves into the complexity and internal contradictions of recognizable objects, given the inexhaustible diversity of their properties, connections and relationships. The worldview nature of philosophical knowledge determines its special significance for the formation of the scientific picture of the world. Therefore, the interaction of special sciences with philosophy, the saturation of specific scientific knowledge with provisions that in some way reflect certain philosophical ideas.

At all times, philosophical knowledge has a significant impact on any manifestations of knowledge, even purely special, a striking example of which is the philosophy of organic production and sustainable use of nature. It influences "not only with its problems and conceptual apparatus, not only with the decisive attention to the principles of worldview, but also with the basic methods of cognition and transformation of reality", E. Semeniuk and V. Melnyk emphasize. The methodological function of philosophy in the field of special scientific knowledge is realized with special expressiveness and clarity through the mediation of categories, laws and principles of dialectics. "Suffice it to recall how the concepts of singular, special and general, content and form, essence and phenomenon, cause and effect, quantity and quality, et. al., as well as closely related principles of universality of development and communication, determinism, finally, the laws of dialectics (and not only basic, but also such as the need for causation) are specifically and uniquely embodied in the shell of special concepts, principles, theoretical and conceptual provisions, the laws of mathematics or ecology, measurement theory or art history", – continue the authors of the textbook "Philosophy of Modern Science and Technology" [31, p. 65].

Next, we will review a number of works that highlight the specific scientific and philosophical dimensions of organic production and sustainable use of nature.

Researcher Bezus R. M. studies the problems of organizational and economic foundations' formation for the development of organic production. In particular, he paid attention to the conceptual foundations and methodological approaches to the formation of organizational and economic foundations for the development of organic production [1, p. 18–150].

It is important to build your activities in relations with nature, in particular, in the production and sale of organic products, based on appropriate models and principles of activity. In this regard, a significant methodological basis in modern conditions is the doctrine of the noosphere. Here it is important to clearly distinguish between real projects and utopias. This is the question that is being studied by Bokov V. A. and Buriak V. V. from Tavrida National V. I. Vernadskyii University in Simferopol. Thus, they study the ideological potential of the noosphere doctrine and its consistency with the concept of sustainable development, emphasize the existence of a holistic information and material system "biosphere-sociosphere-technosphere-infosphere" and emphasize the superiority of noosphere doctrine over the concept of sustainable development because it considers the dynamics of "the whole system with the analysis of the behavior of its individual parts" in contrast to the latter, which focuses on the mechanisms of individual multifaceted actions, outline the tasks of the doctrine of the noosphere, advocating meaningful planning of future humanity, analyze the law information and humanitarian balance as a crucial condition for solving the main task of mankind – the preservation of the "biosphere-humanity-technosphere" system, which is the material basis of the noosphere *(work "Noosphere realities and utopias")*.

Professor O. Valuiskyi studies the philosophical aspects of the ecological problem of the present, emphasizing its socio-natural character, distinguishing in this respect the concepts of "ecological crisis" and "socio-ecological crisis" [3, p. 71]. He emphasizes that taking into account "objective and subjective reasons allows a fuller and deeper understanding of the dialectical interaction of man, society and nature, to understand such specific relationships between them that distinguish them from the interaction of other phenomena", emphasizing the need not to ignore human problem, and include it in the context of solving global problems, in particular, environmental [3, p. 74, 75]. The author is a supporter of the need for a dialectical combination of formational and civilizational concepts

of human development, creative use of the potential of each, citing theoretical and practical developments in modern China, including the solution of the food problem [3, p. 76, 77].

Researcher Skyba Yu. A. analyzes the issue of options for humanity's exit from the environmental crisis. In this regard, he considers a range of concepts, approaches, principles for the future development of mankind. The author is a supporter of the dominant role of environmental approaches in the process of building concepts for overcoming the environmental crisis and the prospects for human survival [33].

Bipolarity of the noosphere concept on the example of the ideas of the followers of V. I. Vernadskyii is analyzed by researcher Chuikova O. V. (Odessa National Medical University). She notes that nooethics, inextricably linked to noosphere teachings, must harmonize soul, spirit, body and unite mind with faith. It is nooethics that raises the issue of life as the highest value, for the preservation of which other ideas should be sacrificed, even if they seem strategically important [43]. Researchers Halapsis A. V. and Halapsis V. S. are in solidarity with her. They note that "further coevolution of the biosphere and society is possible only when the optimal, equilibrium state of the living and artificial world is achieved". According to them, "the noosphere in the proper sense of the word will become a reality when Life and Mind will not oppose, but complement each other" [39, p. 35].

The manifestation of noosphere thinking is the introduction into the educational process of knowledge acquired by past generations of thinkers and our contemporaries to achieve a balance between civilization and nature. In this regard, the course of lectures by G. Khayetsky "Human Ecology" (Vinnytsia, 2014) is interesting. It presents a modern theory of understanding the phenomenon of man from ecological, biological, social and philosophical positions. Man is interpreted by the author as a cosmoplanetary phenomenon and as a component of nature. The researcher describes the impact of cosmic, planetary, natural and anthropogenic factors on humans, the relationship between nature and society and the consequences of human intervention in natural and cosmic processes. Knowledge of man as a bioenergetic information system, according to G. Hayetsky, is the basis of knowledge of the causes and consequences of the current environmental crisis and the deterioration of human health, management and ways to optimize life processes [38].

Researcher Vorobiova L. V. pays attention to the problem of studying the role of ideas of physical economy in the organization of the modern management system. The author notes the need to introduce into

scientific circulation categories that reflect the organic unity of natural and social factors of economic processes, as well as the feasibility of studying the process of energy formation in social sciences, approval the Ukrainian school of physical economy and its contribution to world science [6, p. 91, 92]. The researcher draws parallels between the ideas of S. Podolynskyi and the American economist and politician L. Larush, the founder of physical economics as a branch of modern economics. Vorobiova L. V. emphasizes the growing importance of the doctrine of physical economy in the XXI century when the role of inexhaustible and renewable energy sources in the world energetic will increase [6, p. 93]. The doctrine of physical economy, in contrast to political economy, according to the researcher, is based on natural laws, namely "capture, conservation and conversion of solar energy, not the exploitation of human labor" [6, p. 94].

Vorobiova L. V. also addresses the study of theoretical issues of noosphere concentration formation by V. Vernadskyii. In particular, the researcher draws attention to the stages of this concept formation in domestic science. A special place is given to the consideration of energy theory in the study of issues related to economic issues. The author demonstrates the possibilities of practical application of the teachings of V. Vernadskyi. She emphasizes that the teachings of the Ukrainian school of physical economy can be the basis for the formation of a modern civilizational paradigm of social development and the agricultural sector will make Ukraine prosperous, not industry as previously thought [5, p. 241, 242].

I. Dychko devoted his publication to understanding the problems of coexistence of the noosphere and the biosphere. In this regard, his proposal to restructure the entire complex of education and upbringing of the national education system taking into account the existing environmental problems is interesting. According to him, "knowledge, culture, well-thought-out laws, responsibility, awareness will help people overcome the current crisis and conflict with nature" [10, p. 75].

Professor Shevchuk V. O., Chairman of the Scientific Society named after S. Podolynskyi is engaged in development of physical and economic bases of strategy of development of agrarian sphere of Ukraine. The researcher concludes that the fundamental natural principles on which the modern development of the agricultural sector should be based are: 1) compliance with the law of conservation and conversion of energy; 2) taking into account the energy difference between animate and inanimate. According to the researcher, this will ensure economic balance and long-term development of the agricultural sector. According to the scientist,

"scientific justification of the National Strategy for long-term balanced development of Ukraine's agrosphere should be based on the coordination of classical and modern approaches", where physical and economic principles should be given a dominant role [45, p. 106].

Problems of formation of the physical and economic paradigm of modern management are touched also by Professor I. V. Prokopa in his review of the collective monograph "Physical economy in the dimensions of the theory and practice of management" (K., 2013). The reviewer notes that "fundamentally new are the scientific and applied dimensions of physical economy presented in the monograph", "modern economic knowledge is considered in terms of gaining sufficiency through physical economy, analyzes the impact of the latter on changing the current market paradigm and reveals the innovative nature of the physical and economic vision of development". I. V. Prokopa notes as an advantage of the analysis of the prognostic possibilities of the physical economy doctrine [27, p. 94, 95].

Researchers Glushko T. P. and Korsak L. M. interpret the concept of sustainable development, which is gaining increasing recognition in the modern world as an agrarian philosophy of modern civilization. They note that in the field of agro-industrial production the problem of transition to sustainable development is especially relevant, because it is here that "the natural environment plays a crucial role and is a major factor in product quality as a guarantor of public health" [7, p. 2]. The authors emphasize that the principles of organic farming encourage land users "not to fight with nature, but only to direct all its processes", thereby improving the ecological balance of natural systems and integrating individual technological productions of the agricultural system into ecological integrity [7, p. 2]. Researchers, analyzing world experience, consider the advantages of organic agriculture: optimization of population health and productivity of interdependent natural systems – soil life, plants, animals and people, promoting the development in a countryman (or farmer) sense of responsibility for "living soil organism", "conscious internal and external restructuring of the style of agrarian thinking" [7, p. 3]. Researchers agree with the conclusions that "organic agriculture affects natural resources, maintaining a harmonious relationship between human activities and the environment, despite economic crises, overproduction and natural disasters" [7, p. 3]. They inextricably link the problem of the development of organic agriculture with the problem of sustainability of the agro-industrial complex. According to them, "sustainable rural development improves the efficiency of the rural economy and improves the quality of life of the rural population, maintains ecological balance, preserves and restores the rural

landscape", and "solving the agricultural crisis becomes a spiritual need today because its solution does not depend on natural conditions, but primarily on man" [7, p. 3, 4].

Veremeenko S. I. and Trusheva S. S. characterize the emergence of alternative farming systems in the historical aspect. They highlighted the scientific and theoretical foundations of biodynamic, natural, biological (organic) agriculture. The authors specifically focused on the analysis of the state and prospects of development of organic farming in the world and in Ukraine [4].

The essence of ecologically safe farming, its advantages over intensive methods, the state of development and implementation of ecological agriculture in Europe and Ukraine, prospects for its development analyzes Grabak N. Kh. [8]. A striking example of the tradition of using organic production in domestic agriculture in the past is the system of Ivan Ovsinskyi (1856–1909), to study of which were devoted scientists from the Institute of Agriculture of Ukrainian NAAS Degodiuk E. G., Degodiuk T. S. [9]. It is known that this system provides minimization of tillage to a depth of not more than 5 cm with cross-strip sowing for cereals, the introduction of crop rotation of legumes and green manure. Leaving by-products in the field ensures the activity of earthworms, creates the effect of self-sufficiency of the field with nutrients, optimal moisturing and use of the edge effect.

Researchers from Ternopil National University of Economics Dudar T. G. and Dudar O. T. in their publication highlight the leading trends in the development of the organic sector of agriculture and the possibility of expanding the national market for environmentally friendly agricultural products, taking into account international standards. They substantiate the conceptual model of the infrastructure of the organic agri-food market in order to ensure the quality and safety of agri-food products in Ukraine [12]. The state of the domestic market of organic food and features of its development in Ukraine is analyzed by researcher Zaychuk T. O. (Kyiv National Economic University named after Vadym Hetman). He pays special attention to the definition of marketing tools for the formation of domestic demand for organic products and ways to minimize the economic risks of organic production [13].

Researchers Khorishko I. V. and Khristenko O. A. use the essence of theoretical approaches to defining the basic concepts of environmentally friendly agricultural production and environmental monitoring of agricultural production as a competitive advantage of producer countries [41, 42].

Researchers Zinovchuk N. V. and Rashchenko A. V. (Zhytomyr National Agroecological University) analyze the problems of economic feasibility of organic agriculture. They focus on studying the methodology for assessing the readiness of agricultural managers to implement organic production. The authors characterize motivational and other limiting factors that significantly affect the choice of organic management methods. They offer an organizational model for the creation and operation of associations of producers and consumers of organic products [14]. Zoria P. S. addresses the problem of ecologically clean products production. The researcher considers the problems and current needs of modern time in the production of environmentally friendly products. The author characterizes the trends and expediency of the introduction of organic production, as well as ways to intensify it in Ukraine [15]. The essence of biological agriculture and the conditions of its effective application on the example of short-rotation field crop rotations are studied by V. O. Yeshchenko, V. P. Opryshko and S. V. Usyk [13].

The problem of sales channels of organic products in Europe and Ukraine is studied by Yu. S. Berezhna. In particular, the researcher concludes that it is necessary to apply the strategy of direct exports and the use of sales cooperatives for domestic producers of organic products [2, p. 201].

Substantiation of the main stages of formation of a new strategy of nature management is carried out by the professor of the Academy of Municipal Administration T. V. Ivanova. In particular, she addresses the problems of environmental degradation on the scale of the planet Earth [17].

Researcher Kobets M. I. appeals to the study of the place and role of organic farming in the implementation of the basic provisions of the concept of sustainable development. The author reveals the environmental, social and economic benefits of the organic farming introduction. The researcher provides a comparative description of its development in the European Union and Ukraine. At the same time, the author proposed an action plan for further greening of domestic agricultural production [18].

Researchers Sokol L. M., Stefanovska T. R., Pidlisniuk V. V. consider organic (ecological) agriculture as an integral part of sustainable agricultural development. In organic farming they see an effective alternative to existing farming methods. In their publication authors analyze the introduction of organic production in the world, its benefits. In this regard, researchers assess the theoretical and practical feasibility of implementing organic farming in Ukraine. In particular, the level of

readiness of the Ukrainian population to consume environmentally friendly products is studied [34].

The dissertation research of Kutarenko N. Ya. Is devoted to the problems of organic agriculture development in the agri-food system in Ukraine. In it, the researcher analyzes the concept of sustainability of the agri-food system, the defining attributes of the concept "organic agriculture", outlines the socio-ecological and economic factors of its development, describes the regulatory framework in the field of domestic organic agriculture. Kutarenko N. Ya. considers the state and conditions of organic agriculture and mechanisms for certification of organic products in Ukraine and the world, studies the role of operators of organic agriculture and their marketing activities. The researcher addresses the prospects for the development of domestic organic agriculture and developed practical recommendations for its stimulation through the prism of the mechanisms of state support, interest of producers and the formation of motivations for the consumption of organic products in the population [20].

An illustration of the effectiveness of the principles and methods of organic farming is the publication of A. O. Oleksienko, which addresses the issue of practical implementation of the goal of organic farming in Ukraine in general and Kirovograd region in particular. The author describes farms as one of the most common forms of management in agriculture. A. O. Oleksienko studies aspects of economic efficiency of agricultural producers in the process of practical application of the principles and methods of organic farming [25].

Researcher N. B. Stovolos (Sumy National Agrarian University) turned to the study of the model of formation of the national system of organic production. She concluded that there was a need for proper legal support for the development of the organic sector of agriculture. According to her, the formation of a systematic state policy aimed at developing organic production is an important condition for reducing anthropogenic pressure on the environment and improving the ecological situation, preserving biodiversity, improving environmental safety, forming agri-environmental image of the state and increasing competitiveness of organic production [35].

Problems of progress in the formation of sustainable agroecosystems of biogenic agriculture, associated with the use of arrays of high-yielding shrubs that produce renewable energy and polysaccharides for various biotechnologies of continuous action, describes M. M. Timofeev (Donetsk Institute of Agroindustrial Production of NAAS of Ukraine). He considers such shrubs as a resource, economic and organizational and technological

basis for the operation of electric vehicles in agriculture [36]. In turn, the effectiveness of the elements of organic farming in the Forest-Steppe is analyzed by researcher Tsyuk O. A. [42].

Korovinska G. I. and Dodonova V. I. turn to the issue of environmental security of society, in particular, in the context of technocratic thinking. The authors analyze the environmental aspects of the globalization process, formulate questions about the relationship between technocratic thinking and the globalization process, study the ideological and philosophical origins of this issue in different periods of the history of philosophy and science [19].

Researchers Sahaidak Yu. and Kharchenko T. (Taras Shevchenko National University of Kyiv) paid attention to the study of the formation and development of the environmental market in Ukraine. They focus on the study of factors that hinder the development of the environmental market. They analyzed the state of the environmental market in Ukraine and leading countries. Researchers also highlight ways to improve the functioning of the market for organic goods to increase its competitiveness [30].

Researcher G. Tiutiunnyk studies the current state of organic farming in Ukraine, analyzing the positive and negative aspects of the formation of its market. It outlines the main problems of its development and ways to solve them based on foreign experience. The author offers a number of approaches to improve the production and marketing of organic agricultural products. The researcher emphasizes that the efficiency of enterprises engaged in the production of organic products, and the development of the organic production sector in general depend on the level of development of its certification system. G. Tiutiunnyk gives convincing examples of foreign experience in supporting producers of organic products. The researcher also draws attention to the need for legislative consolidation of administrative regulators of organic production and mechanisms of state support, including subsidy policy [37].

The moral and ethical dimension of economic activity in the context of its study in the history of philosophical and cultural thought is carried out by Ostropolska Z. M. She rightly notes that "economic work is an activity not only to meet the material needs of man, but also the moral and ethical manifestation of the spirit, spiritual action"; the employee as a subject of production activity is the bearer of certain values, worldviews, religious views [26, p. 32]. In this regard, the views of the German thinker M. Weber are interesting, who noted such spiritual qualities of the worker as conscientiousness, will, responsibility, ascetic labor discipline [26, p. 33].

Before Weber, this question was raised by the Ukrainian thinker G. S. Skovoroda, which outlined the economic activity of man as one that "should be charitable, strives for happiness", and should be carried out "in accordance with the biblical moral code" [26, p. 33]. In this regard are interesting the views of the russian thinker of the XIX century V. Solovyov, who saw in man not only a social being, but also a natural unity, so his economic activity is an integral part of cosmic unity. According to the thinker, human life is realized in the "form of integral existence, moral and physical solidarity". Morality is an important criterion for the prevention of predatory management, inextricably linked with contempt for people and the environment [26, p. 38, 39]. The researcher concludes that the formation of a moral attitude to property, especially to land ownership, requires the spiritualization of both man and material nature as a prerequisite for the cessation of predatory management. Love for the earth can be realized in a society where people are aware of the need for self-restraint, which, in particular, should be manifested in the restriction of personal needs and property" [26, p. 39]. Ostropolska Z. M. summarizes that "the prospects for the development of civilization in the context of globalization will determine both progress in technology and economic ethos based on universal spiritual values" [26, p. 40]. In our opinion, organic agriculture fully complies with the principles of such an economic ethos and should not reduce its purpose and objectives to purely technical or technological spectra, as is sometimes the case in some views of some scientists and practitioners – supporters of organic production.

The main socio-philosophical approaches to understanding and researching the concepts of "ecological consciousness" and "ecological culture" are analyzed by A. S. Radei (NTUU "Kyiv Polytechnic Institute"). The author emphasizes that "the choice of "human strategy" should be consistent with the "nature strategy", ie the boundaries and direction of human development should be consistent with the development of the entire biosphere, ensure the coevolution of nature and society". The researcher notes two ways out of the global environmental crisis: 1) technical and technological; 2) worldview and social, between which there is a dialectical relationship. According to him, ecological knowledge has an integral character, encompassing in a single integrity philosophical, natural science, socio-humanitarian knowledge. A. S. Radei emphasizes that "the spread of ecohumanism in society largely depends on the formation of human and social attitudes to nature, and, consequently, approaches to solving environmental problems" and a significant role in this process is played by philosophy. In the course of revealing the essence of the interaction of

society and nature, environmental problems, in his opinion, "should make its orientation, worldview influence not only on individuals but also on the acceptance in the social environment of thoughts, values, norms, attitudes to spiritual culture as a whole". The formation of environmental knowledge should include both sensory-emotional and rational components. The very process of humanization of environmental knowledge is inextricably linked with the problem of ethical and environmental imperative as a guarantor of harmonization of components within the system, tentatively called "nature – society". Ecological consciousness can be formed only as a result of a combination of ecological relations and ecological activity, and "ecological culture itself, based on the integrity of the "society-nature" system, includes a dialectical synthesis of ecological relations, ecological activity and ecological consciousness". Moreover, in this link the author sees the main component of environmental activities [28].

The controversial nature of the relationship between man and nature is considered by researcher Shevel A. O. In this regard, the author analyzed the conceptual approaches of K. Tsiolkovskyi, A. Ursul, M. Fedorov, V. Vernadskyi, M. Moses, K. Lorentz, Pope John Paul II and others. She concluded that "there is a certain correlation between the goals of society and social development, described by the basic law of social ecology", and "maintaining the further progressive development of human civilization is associated not only with a simple increase in its technical capacity, but also with qualitative change the nature of the relationship between society and nature. It is necessary to take into account all the components of the problem, to build complex projects to overcome the crisis in the relationship between man and nature, and not focus on any one aspect, although attractive from the point of view of a particular researcher [44, p. 104].

The authors have been working on the issues outlined in the article for the last decade. They conduct research within the scientific activities of the Department of Philosophy (now Humanities Education) of Lviv National Agrarian University. This is reflected in both organizational activities and scientific publications.

Thus, the authors took part in **round tables:**

1) Round table "Modern physical economy as the basis of a new philosophy of land management" (Dubliany, 24.05.2017 with the participation of teachers of LNAU and LNU named after I. Franko, the public of Lviv and Drohobych, related to the presentation of the monograph of L. S. Gryniv "Physical economy: new models of sustainable development";

2) Round table "Philosophy of sustainable development and the problem of organic farming" (Dubliany, November 9, 2017);

3) Round table dedicated to the 25th anniversary of the Department of Economics of Ukraine named after M. Tugan-Baranovsky "New models of sustainable development economy: problems and prospects" (Lviv National University, May 23, 2018, Lviv). The topic of the report: "Philosophical and value discourse of the problems of physical economy and sustainable development".

4) Round table "Earth and man: to a deeper harmonization of relations" (April 10, 2019, organizers: LNAU and Stryi College of LNAU).

5) Round table "Mykola Rudenko: philosopher, public figure, poet" (April 23, 2021) Topic of the report: "Socio-ecological problems in the teachings of M. D. Rudenko".

Participation in radio and TV programs:

1) Radio "Lviv FM" (with the participation of Hryniv L. S. and Nakonechnyi R. A.): issues of philosophy of physical economy: the role of social and humanitar sciences (May 8, 2017);

2) Ternopil Regional Television (speech by Nakonechnyi R. A. on the problems of the philosophy of organic farming, June 29, 2017);

Participation in scientific and scientific-practical seminars:

1) Seminar "On the way to sustainable development: from organic production to biodiversity restoration", April 27–29, 2017, within the forum "Agroport", Lviv, West-Agroport, 2017);

2) Practical seminar "Development of an innovative model of harmonious development of Ukraine in the XXI century" (based on the construction of ecovillages on the Dnieper, Carpathians and diaspora, November 30, 2017), venue: Union of Architects of Ukraine, Lviv region;

Participation in scientific and practical conferences and scientific forums:

1) XVII International Scientific and Practical Forum (September 14-16, 2016) (Dubliany, Zhovkva district, Lviv region). Kopytko A. D. The topic of the report: "Model of relations in the system "man-nature" in the doctrine of physical economy";

2) International scientific-practical conference "Innovative management of natural agricultural production in Ukraine" (November 10-11, 2016). Kopytko A. D. Topic of the report: "Thermodynamic and infodynamic models of physical economy";

3) IV International Scientific and Practical Conference "Ecology and Nature Management in the System of Optimization of Relations between Nature and Society". (April 27–28, 2017, Ternopil);

4) International scientific-practical conference "Greening of education as a factor in sustainable development of society", National University of Forestry of Ukraine (Lviv, October 19–20, 2017);

5) The First All-Ukrainian Scientific and Practical Conference "Organic Agricultural Production: Education and Science" (Lviv, November 1, 2018). Organizers: Ministry of Education and Science of Ukraine and the Federation of Organic Movement of Ukraine;

6) Second All-Ukrainian Scientific and Practical Conference "Organic Agricultural Production: Education and Science" (Lviv, October 31, 2019) Organizers: Ministry of Education and Science of Ukraine and the Federation of Organic Movement of Ukraine;

7) International scientific-practical conference "Effective technologies and structures in the construction and architecture of the village. Development of innovative models of eco-settlements of Prykarpattia and Carpathians "(Dubliany, May 15–19, 2019). Kopytko A. D. Topic of the report: "Worldview principles of creating eco-settlements in Ukraine";

8) International scientific-practical conference "Development of modern society in conditions of global instability" (10–11.05.2019, Odesa). Kopytko A. D. The topic of the report: "Political and legal aspects of the implementation of food security ideas in the world and in Ukraine";

9) XXI International Scientific and Practical Forum "Theory and practice of development of agro-industrial complex and rural areas." (Dubliany, September 22–24, 2020). Kopytko A. D., Nakonechnyi R. A. Topic of the report: "Philosophical and ethical principles of building sustainable development strategies";

10) Perspectives of world science and education. VII International Scientific and Practical Conference, Osaka, Japan, 25–27 March 2020. Kopytko A. D. The topic of the report: "Political and legal aspects of the implementation of food security ideas in Ukraine and the world";

11) Perspectives of world science and education. VIII International Scientific and Practical Conference, Osaka, Japan, April 22–24. 2020. Kopytko A. D. Topic of the report: "Political and legal aspects of the development of organic farming and production of organic agricultural products in Ukraine";

12) All-Ukrainian scientific-practical conference "Spiritual and moral, ecological and socio-economic challenges of modern humanity in the context of the encyclical of Pope Francis "Laudato si" (Lviv, April 16, 2021). Kopytko A., Nakonechnyi R. Topic of the report: "Philosophical and ethical principles of building sustainable development strategies";

13) IV International Scientific and Technical Conference "Effective Technologies and Structures in Rural Construction and Architecture" (Lviv-Dubliany, June 24–25, 2021). Topic of the report: "Ecosocial and spiritual dimensions of the functioning of rural settlements";

14) XXII International Scientific and Practical Forum "Theory and practice of development of agro-industrial complex and rural areas" (5–7.10.2021, Lviv-Dubliany). The topic of the report: "The doctrine of physical economy and current issues of the course "Philosophy of Organic Agriculture and Sustainable Nature Management" (co-speakers: Kopytko A. D., Nakonechnyi R. A.).

The results of the authors' research are reflected in a number of articles, abstracts of conferences, manuals:

Articles:

1) Kopytko A. D., Nakonechnyi R. A., Sas I. M. Implementation of the principles of physical economy in organic farming: theory and practice. *Bulletin of Dnipropetrovsk State Agrarian and Economic University*. 2015. № 4 (38). P. 34–38;

2) Kopytko A. D., Nakonechnyi R. A., Sas I. M. The model of relations in the system "man-nature" in the doctrine of physical economy. *Theory and practice of development of agro-industrial complex and rural areas*. Proceedings of the XVII International Scientific and Practical Forum September 14–16, 2016. Lviv : Liga-Press LLC, 2016. P. 337–343;

3) Kopytko A., Nakonechny R. Value dimensions of physical economy in the scientific and educational environment of modern higher education in Ukraine. *Theory and practice of development of agro-industrial complex and rural areas*. Proceedings of the XVIII International Scientific and Practical Forum dedicated to the memory of engineer Yaroslav Zaishly (September 20–22, 2017). Lviv, 2017. P. 350–358;

4) Kopytko A., Nakonechny R. On the question of methodological research in modern physical economy. *Agrarian economy*. 2017. Vol. 10, № 1–2. P. 21–29;

5) Kopytko A. D. Political and legal aspects of the implementation of food security ideas in Ukraine and the world. *Perspectives of world science and education*. Abstracts of VII International Scientific and Practical Conference, Osaka, Japan, 25–27 March 2020. P. 362–371;

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7) Nakonechny R., Kopytko A. Worldview and philosophical principles of organic production. *Agroelita*. All-Ukrainian Agrarian Journal. 2021. № 11 (106). P. 20–21.

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Manuals:

1) Worldview and philosophical foundations of physical economy / Nakonechnyi R. A., Vasilieva O. S. et al. Tutorial. Lviv, 2012. 145 p.;

2) Philosophical, ideological and economic foundations of the Ukrainian school of physical economy : Textbook / Nakonechnyi R. A., Korchynskyi I. O. et al. 2nd ed., ext. and ed. Lviv, 2013. 215 p.;

3) Nakonechnyi R. A., Kopytko A. D. Philosophy of organic production and sustainable use of nature. Educational and methodical manual. Lviv, 2022. 346 p.

Results and discussion. In order to find the right approaches to certain problems of organic production, it is necessary to proceed from deeper, philosophical, or as the famous German philosopher Rudolf Steiner writes, ***spiritual foundations***. "Every educated person has to learn that it's not just the plant that depends on what we see around it. The whole sky with its stars takes part in the growth of plants". The thinker emphasizes: "It is in agriculture that we find how it is necessary to use from the Spirit those forces which are completely unknown today and whose significance is not only to improve a little in agriculture, but it depends on them whether people can in general continue their life in the physical sense on Earth. After all, man lives by what the Earth brings" (*R. Steiner. Spiritual and scientific foundations of successful agricultural development. Agricultural course. Kobervatz, Breslau, 1924*).

M. D. Rudenko emphasizes that we must clearly realize that "earthly life does not belong to the Earth – it is a cosmic phenomenon" [29, p. 69]. In confirmation of these words, he mentions Aphrodite (aka Aurora) and it "reveals to us the ancient understanding of earthly life" [29, p. 69]. K. A. Timiriazev, V. I. Vernadskyi, O. L. Chyzhevskyi and other luminaries of domestic science confirmed the solar origin of life. Thus, K. A.

Timiriazev stated that photosynthesis is life. Therefore, it is not surprising that the ancestor of life on Earth is a plant that depends on the sun. "The creative power of the Sun is a living reality of space", – emphasizes M. D. Rudenko [29, p. 74]. He emphasizes also that "the spiritual connection with nature is increasingly lost, but at the same time the feeling is lost that somewhere in space there are mysterious processes on which earthly life depends" [29, p. 84]. We create something with the help of labor, but we create with the help (or decisive participation) of the Earth, the Sun, the Universe [29, p. 101].

When it comes to the fertility of the land, which is the basis of added value – this is ultimately accumulated over billions of years solar energy, according to M. D. Rudenko. By him the theory of value added and the theory of the biosphere as a transformer of solar energy actually merge into a single theory of life. And if we seek to find the deep knowledge that will help us understand where the path to the immortality of earthly civilization lies, we must look at these theories in conjunction and interdependence, that is, at the substantial level. At this level, the term "additional cost" becomes impossible to use [29, p. 101]. F. Quesnay calls it a "pure gift of nature". M. Rudenko, in turn, outlines the added value as the energy of progress. This is the creative process of the Sun. And not only the Sun, but also the Universe, its radiant substance, which in all religions is called God. And in general it is called correctly, emphasizes M. Rudenko [29, p. 101]. These spiritual foundations, this, according to M. Rudenko, sacred energy, we should not hide or forget, because otherwise we fall into the service of the Yellow Devil [29, p. 101]. In this regard, it is appropriate to quote M. Rudenko: "Why should we link the economic model of society to the doctrine of the universe? Because earthly man must have a holistic worldview, which consists not only of the social, but of the cosmic. If these factors exist separately, then this is not a worldview" [29, p. 489]. And then thinker emphasizes: "We must always think about the needs of the universe – and only then about our needs. We are not on our own – humanity is an active organ of the universe. This is how Skovoroda saw him. This is what S. Podolynskyi sees. And only when we work for the Universe, we work for ourselves "[29, p. 425].

After the relatively recent concept (category) of "organic production" emerged, scientific and social practice has led to the consolidation of another aspect of the content of this concept – it (category) began to be understood as a possibility of what is in life, business practice (and what is really), and not just as what exists in the minds of scientists, theorists of agricultural production, agricultural science" [29, p. 62]. That is, there was a

kind of "splitting" of the once unique content of the concept into several significantly different, albeit logically related aspects, which can be called ontological and epistemological (historically, this second aspect was primary). "However, epistemology without ontology is a minus sign without a vertical line that leads us up the stages of cosmic evolution", emphasizes M. D. Rudenko [29, p. 73].

If you think deeply, the doctrine of the philosophy of organic production and sustainable use of nature is truly ontological. We are talking about organic production as an integral part of agricultural production, which is one of the main features of human existence and humanity and is an integral part of the biosphere. Thus, V. I. Vernadskyi considers the biosphere from the standpoint of metaphysics, which is an integral part of the ontology. The term itself indicates its status (Greek "meta" – "after", "physis" – "nature", ie literally "after nature"). Thus, V. I. Vernadskyi considers ontology and metaphysics, based on their identity. The terrestrial biosphere, according to this doctrine, as well as its component – organic production and balanced nature management, is a reflection of the processes of space, its most important laws. Thus, to know these laws means to know the most general laws of existence.

The social role of organic production and sustainable use of nature, which is exceptional for humanity, is organically linked to the strategy of sustainable development. The issue of sustainable development is based on the ideas of ecologically safe human life, survival of human civilization, preservation of the "living film of the Earth" (living organic matter). "The humus layer of the planet is a thin film, which, if evenly distributed on the continents, would not exceed three centimeters of the earth's radius. Just think – six and a half thousand kilometers and three centimeters", – said M. Rudenko [29, p. 75]. It is due to this thin film that all earthly life exists.

The unity of the philosophy of organic production and sustainable use of nature acts as a new form of interaction of philosophical and special (scientific) knowledge in the context of the growing role of "human factor" in modern scientific knowledge and practice of economic life. It is well known that the problem of man and his relationship with the world has always been at the center of philosophy. Moreover, in recent decades the problem of man has become a kind of focus in which many interdisciplinary and intersectoral areas of scientific research converge, and this inevitably requires strengthening the interaction of various sciences with philosophy. Let us emphasize that the whole history of the relationship between man and nature is an attempt to reach a compromise, to avoid the collapse of modern civilization and the destruction of all living things on planet Earth.

It sometimes seemed to man that he prevailed over nature, that it was not nature that dictated to him, but that he dictated his laws, that he took everything necessary from it, forgetting that he himself was a part of the same nature. It is appropriate to recall the words of the famous farmer and public figure F. T. Morgun said that the greatest mistake of human society in the last two centuries is that physics, chemistry, geology, mechanics and other technical sciences have been allowed to push philosophy and humanism to the corners of civilization. As a result, the main and foremost in the education of schoolchildren and young people and adults are not sciences that call for goodness, humanism, deep human virtue in the spirit of Montesquieu, Goethe, Tolstoy, Dostoevsky, Gogol, Shevchenko, Iliin, Vernadskyi, Korolenko, but technical sciences, which convince those who study them that man is "allowed everything", that he can do everything, that he not only can but is obliged to conquer nature, to create projects that confirm its supremacy over nature" [23, p. 8]. The words of M. D. Rudenko are fair: "no one but man threatens the earth's biosphere with its complete destruction" [29, p. 68].

It is clear that most scientists, philosophers, practitioners in the field of agricultural production emphasize that the philosophy of organic production and sustainable use of nature are not self-sufficient ontological phenomena, they are determined by human activity and, consequently, his personal qualities, consciousness, knowledge. As Nikolai Berdiaev noted, much depends on "what kind of spirit a person will be" (*Berdiaev M. Man and machine. The problem of sociology and metaphysics of technology*). Later, in the context of exacerbation of global problems of mankind, this view was emphasized by the President of the Rome Club A. Peccei: "The problem is in man himself, not outside it; …The most important thing on which the destiny of mankind depends is human qualities" (*A. Pecchei. Human qualities. 1980*).

The eternity of the laws of nature was emphasized by M. Rudenko [29, p. 387]. M. Rudenko's view on the contribution of François Quesnay is quite understandable, who, unlike Adam Smith and, consequently, Karl Marx, does not speak on behalf of a group of people who are immersed "in their work and see nothing around them", he speaks on behalf of the Earth and the Sun, who are truly capable of creating something new, additional – something that did not exist yesterday" [29, p. 390].

Organic production, which is based on the methodology of physiocrats (including the Ukrainian school of physical economy), is objectively based on the laws of nature, namely the position that man will never be able to receive solar energy directly, but only through plants.

"Because a person will never grow leaves instead of hair and roots instead of legs" [29, p. 119]. Therefore, "depleting fertility, a person will lose energy connection with the Sun and will certainly die" [29, p. 119]. The ideology of organic production and sustainable use of nature requires us not to be guided by fashion, but only by the complete truth. In the 80's of the XIX century. S. Podolynskyi combined his teaching with the ideas of the French physiocrats of the XVIII century, which, according to M. Rudenko, "physiocratic teaching can be considered complete…, and this is no longer partial but complete truth" [29, p. 440], and that without their works we will remain blind.

The great French thinker F. Quesnay in the XVIII century. recognizes only that part of the economy that produces living matter, namely farming. F. Quesnay focuses on agricultural products that enter the capital's city market (the so-called Belly of Paris), and which are the driving force of progress. F. Quesnay calls it a pure product or even a gift of nature. It should be noted that in the days of Quesnay (XVIII century) Earth science knew nothing about photosynthesis, entropy, the comprehensiveness of the law of conservation and conversion of energy. All this knowledge came much later. F. Quesnay and other physiocrats based their teachings on very simple knowledge, namely, "that the earth is able to give birth, provide humanity with food, and food revives the strength needed for work", – emphasizes M. Rudenko [29, p. 469]. The genius Ukrainian Serhii Podolynskyi expressed for the first time in the world the idea of solar energy, which flows into the economy only through agriculture. In this regard, M. Rudenko writes: "His work "Human labor and unity of power" is short, but it is worth hundreds of volumes, which still abound in the shelves of our libraries" [29, p. 467].

In theoretical and scientific terms, as well as in the practice of organic production and sustainable use of nature, a significant place belongs to the Ukrainian M. D. Rudenko, who continues to develop the teachings of the Ukrainian school of physical economy. He introduced the concept of "energy of progress", arguing that it is "an annual supplement of solar energy, which takes place exclusively in agriculture", revealing the essence of physical economy [29, p. 26]. According to V. Shevchuk, the chairman of the Scientific Society named after S. Podolynskyi, M. Rudenko creates a "fundamentally new paradigm of thinking and management" [29, p. 23]. M. Rudenko not only develops the doctrine of physical economy, but also defines the global mission of Ukraine, gives his understanding of the "Ukrainian dimension of saving knowledge" [29, p. 23].

The main methodological principles of organic production and sustainable use of nature include:

– promoting the prevention of threats posed by intensive forms of agricultural production;

– consistent and systematic greening of agricultural production;

– organic connection with the requirements of the concept of sustainable development and sustainable use of nature;

– the need to integrate the scientific achievements of agricultural science and other fields of knowledge;

– unity of science and socio-political practice;

– responsibility to future generations;

The International Organization for Organic Production (IFAO) offers a number of principles related to human concern for their own physical and moral health, preservation of the environment. Among them are the principles of health, ecology, justice and care.

The range of problems and obstacles on the way to the practical implementation of the tasks of organic production in agriculture include:

– the difficulty of complying with all technological requirements for organic agriculture (it is necessary to teach professionals to think differently, to have patience to be able to achieve the desired result);

– inability to obtain sufficient amounts of agricultural raw materials to ensure food security;

– lack of demand for organic products in Ukraine due to low solvency of the population and lack of awareness;

– lack of available sale channels for organic products;

– the lack of an extensive legal basis and the prevalence of legal nihilism in the field of organic production;

– insufficient development of farms, dominance of holdings and latifundia, which is not in line with the reform strategy. This has led to serious distortions in agriculture and crop production, as the main structural distortions are most pronounced in the activities of agricultural holdings (eg, reduction of forage crops, underdeveloped livestock industry in modern Ukraine)

V. F. Morgun dwells on some antinomies of agriculture, which provide a basis for the formation of negative images of natural agriculture, which disorient farmers-practitioners and inhibit its implementation in modern conditions [22, p. 28–33].

Conclusions. The transition to organic production in agriculture is one of the quietest and at the same time the most shocking revolutions in the history of mankind. This is probably the only revolution that does not

overthrow, shatter, destroy, but creates, because it does not take place in squares and streets, but takes place in the heart of every person and permeates his consciousness. Its success is in that, as S. S. Antonets writes, it is necessary to "put man ahead so that man can create" [24]. And so that our descendants can say that this "was one of the most significant revolutions – the only one that could unite man with nature, man with man, man with society and man with God" [21, p. 51].

The philosophy of organic production strategy should be based on "intensive study of patterns that can be the key to answers, to help find solutions to many farms. Therefore, today, if we talk about strategic directions for the development of organic farming, there must be highly professional scientists and producers to combine knowledge and practical skills on the components of life from the cell to a particular organism. Then we will have the result in the form of economic prosperity and independence of the state" [11]. Corresponding Member of Ukrainian NAAS, Professor of the University of Bioresources and Biotechnology M. M. Dolia vividly describes this misunderstanding and rejection of organic production by fellow scientists: "When we started this work (organic production at the company "Agroecology" – Author), we received a very large negative from a number of representatives of official science. Schools of various scientific leaders did not support this direction. We often had misunderstandings with those scientists who prevented us from implementing such a large-scale production mechanism. But despite this, today we have every reason to promote these developments and implement them at a highly scientifically sound level" [11, p. 3].

In the domestic history of the XX century is an excellent example of combining natural science achievements with a contribution to the philosophy of science. We mean the teachings of academician V. Vernadskyi on the noosphere. Organic production and sustainable use of nature are the embodiment of the capabilities of the human mind, the objective process of development and formation of the noosphere society. According to V. Vernadskyi, "the prerequisite for the transition of mankind to the noosphere is the transformation of a man armed with scientific knowledge into a powerful geological factor on a planetary scale" (*V. Vernadskyi. Scientific thought as a planetary phenomenon*). That is, the establishment of organic production in agriculture is an objective, natural process, a special strategy for the survival and further progress of mankind. And those obstacles and problems on the way from theory to practice of organic production in the world and in Ukraine are mostly subjective, temporary and will necessarily be overcome in the near future.

The solution of contradictions in organic production is in the center of attention not only of a narrow professional circle of agrarians, but becomes "the focus of the universal social life of the people", – emphasizes Professor Pysarenko V. M. [32, p.4]. Continuing his opinion, we note that in Ukraine such a social situation is already being formed, which will lead to a full understanding that there is no other way but organic production. Yes, the struggle continues, but this struggle is a clash of opinions, scientific, theoretical, and philosophical discussions. Moreover, behind the supporters of organic farming is a great history, there are enthusiasts who centuries ago and more, emphasized the importance of this problem.

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