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PATHS OF IMPLEMENTATION OF BALANCED AND SUSTAINABLE DEVELOPMENT IN THE CONDITIONS OF THE INFORMATION SOCIETY, KNOWLEDGE-BASED ECONOMY AND ECONOMY BASED ON WISDOM

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ABSTRACT: The study presents the need to implement balanced and sustainable development in the conditions of the information society, knowledge-based economy or wisdom-based economy as a synthesis of three leading paths – knowledge, wisdom, as well as balance and sustainability. The research so far shows that the implementation of this strategy most often takes place in mutual isolation, despite the merging of civilisation changes into a multidimensional system. The article points out the urgent need to combine modern civilisation's three most crucial development paths into one leading to sustainable and balanced development. System analysis and a critical examination of the literature were used. Researchers dealing with this issue often forget that the proper development of human civilisation must combine economic, social, ecological, and institutional aspects.

KEYWORDS: balanced and sustainable development, information society, knowledge-based economy, wisdom-based economy, civilisation development paths

Introduction

The literature dealing with the issues of balanced and sustainable development contains many works showing various practical ways of implementing solutions which, in the opinion of their originators, are the realisation of such a strategy. This is not always the case, although they cannot be denied proper motives. This is confirmed by the fragmentary studies carried out by the authors of the presented article. However, the strategy of balanced and sustainable development is much more complex and dynamic, especially when its implementation takes place in the world of the information society and the accompanying forms of the economy, i.e. the knowledge-based economy and the more advanced economy based on wisdom (wisdom economy). Each attempt to implement pro-ecological projects should be assessed not only from the point of view of the relationship: between the human world and the natural environment but also in the context of developing knowledge, the ability to use it and limiting ignorant attitudes (behaviours).

From time to time, it is also worth considering the more general problems of reaching economic-social-natural homeostasis (a kind of dynamic civilisation nirvana) along paths marked by knowledge, wisdom, and humanistic and pro-ecological values. This homeostasis sets long-term goals to which the strategy of balanced and sustainable development is to lead in the environment of the information society and the accompanying forms of management and economy.

The following study aims to analyse the challenges and problems that such an investigation into homeostasis generates, regardless of implementing changes in modern civilisation, including the „blue" information and information revolution and the „green" environmental revolution. Due to the limited volume of the article, the authors only take up selected issues that should and partially already are the subject of more detailed research. A simple, graphic model of reaching the aforementioned multidimensional homeostasis through the paths of knowledge, wisdom and balancing civilisation changes over time was proposed to organise the studies. It can be a starting point for further, more complex and detailed empirical or model-theoretical studies.

The study is also a specific appeal for the need for a holistic, systemic and dynamic approach to the problem of the development of human civilisation, especially in the conditions of the IT and information revolution, network society and overpopulation, significant virtualisation of the economy and global environmental challenges, combined with increasingly stronger anthropopressure. It is not an appeal to limit fragmentary, detailed research based on quantitative modelling, statistical and econometric techniques and

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methods. The study aims to pay attention to the general-to-detail approach. The latter is to define the methods of action leading to correctly identified (defined) final goals. Generating detailed solutions without a general vision is usually the "no-know-where path".

An overview of the literature

The reader met with numerous studies on the information (network) society, knowledge-based economy, and *Sustainable Development*. And how many of these studies shared both issues? After all, the future civilisation will be both ecological and information and information technology oriented. Its character is determined by the processes and changes already known to us.

Attentive and interested readers will very quickly notice that research on changes in the information society, knowledge-based economy and wisdom-based economy are carried out in parallel to studies on balanced and sustainable development and the ways of its implementation in practice. From the methodological point of view, it can be treated as a breach of the principle of cognitive holism and failure to perceive (or abstract) the fact that these dimensions overlap and interact. This is the main reason why it is difficult to find studies combining these aspects, both in Polish and international literature. Any reliable literature research will confirm this in this area.

Breaking the above principle results in one more consequence – the lack of proper relations between the main dimensions of human functioning – its economy, social life and impact on the natural environment, which is sometimes noticed in the literature. For example, the series of publications published as part of the project: "Program for the dissemination of scientific achievements in the field of sustainable development and knowledge-based economy", conducted by a team led by prof. Bazyli Poskrobko (WSzE, 2009; Poskrobko, 2009; Poskrobko, 2010a; Poskrobko, 2010b; Poskrobko, 2011a; Poskrobko, 2011b; Poskrobko, 2011c; Poskrobko, 2011d; Poskrobko, 2011e; Ziemba, 2017). In this way, we obtain exciting but quite one-dimensional in light of the above methodological suggestions and studies. Factors such as information noise, arising in the conditions of a large number of traditionally and electronically published texts, the lack of tangent research interests of both groups of analysts and the simple inability to follow the entire scientific literature are also important.

In Polish literature, better known and available to authors, it is quite difficult to find studies that combine the problems of changes in the information society and knowledge-based economy with the issues of green economy and the implementation of balanced and sustainable development. In the monograph „Forming theory and implementing aspects of sustainable devel-

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opment" (Czaja, 2011), one can find an attempt to look at the ecological and information economy, later developed in the work „Sustainable knowledge-based economy. Selected problems" from 2013 (Czaja, 2013), emphasising such elements as (1) leading resources, (2) basic principles of operation, and (3) main objectives of the operation.

Economic literature and related research are also characterised by „fashion" and „good behaviour, „ not conservatism. Outstanding physicist Avi Loeb noted: "The opposition to the search for extraterrestrial intelligence comes in part from the conservatism that many scientists use to minimise the number of mistakes made in their careers. This line of least resistance works in practice – researchers who care about their image in this way receive more honours, awards and funds. Unfortunately, this also increases the echo effect because larger funds allow the creation of ever larger research groups that repeat the same ideas over and over again. It works like a snowball – echo chambers enhance the conservatism of thinking, killing the innate curiosity of young researchers. Most become convinced that they must adapt to keep their job (Loeb, 2021). This assessment perfectly characterises the community of economic researchers. An important feature that determines the nature of contemporary economic and ecological literature is the need to maintain the Kuhn paradigm or Lakatos' "hardcore". Therefore, the market of economic literature is flooded with subsequent studies verifying the same models or ideas for the nth time without major cognitive successes and recommendations for socio-economic practice (Mayer, 1996).

Different heretical studies and ideas are rejected by reviewers who, in their opinion, emphasise the unscientific nature of such concepts. However, if the future shows that they open up new cognitive levels, former reviewers will not admit to their limited imagination or error. This was the issue, for example, in the case of the production function model or the information economy in terms of the importance of information asymmetry in economic decisions. And yet another model verification, which does not bring anything new to the cognitive process, is not worth the effort and expenditure, especially if it comes down to another „data grinding". Better to look for new challenges and solutions.

Certain attempts to combine the concept of the information society and the idea of sustainable development, which can be found in Polish literature, in the last decade did not look for ecological paths of development in a modern network society (Niewielska, 2021; Szkudlarek & Milczarek, 2014; Ziemba, 2017). They are instead attempting to reflect on the issues of sustainable information society development. They do not have much in common with the real economy and the existing material, energy and information relations between humans and the natural environment. However, this research provided an interesting reason for the development of a new plane

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called the information ecology (Babik, 2014). It deals primarily with the problems of the human information environment, threats or information pollution („garbage") that appear there (Babik, 2002). In world studies, the issues of information ecology appeared first in the field of natural ecology and then in the context of the functioning of the Internet (Huberman, 2001).

Texts confirming the distinctiveness of the ecological and informational approach (path) can also be found in "industry" magazines, such as: "Problems of ecology" (published since 1997), "Polish Journal for Sustainable Development" (published since 1998) and even in "Economy & Environment" (available on the Polish and international publishing market since 1992).

World literature is also full of works on *Sustainable Development*. A particularly large number of such publications appeared after the Brundtland Report (World Commission on Environment and Development, 1987), during the preparation of the Earth's Ecological Summit in Rio de Janeiro (1992) and after its completion. At that time, the problems of understanding *Sustainable Development* were referred to in Polish literature as eco-development and the implementation of such a strategy in the spirit of Agenda 21. At the turn of the millennium, an exciting concept of the Millennium Development Goals (Becla, 2016; Czaja, 2016; Czaja, 2007) appeared, as well as unconventional attempts to combine social and economic aspects with ecological and even religious-philosophical (such as New Age) (Becla & Czaja, 2005; Becla, 1998). However, they did not develop in the direction suggested in this study. In the first and second decades of the 21st century, the issues of global climate change; for example, the famous Stern Report of 2006 (HM Treasury, 2022) and new sustainable development strategies, created especially in the European Union, gained importance.

The analysis of contemporary civilisation changes confirms the great similarity of the situation in the Polish and international publishing markets. With a huge wealth of publications on *Sustainable Development* and the information society in English, French, German or Spanish, as well as Chinese or Japanese (more difficult to track for linguistic reasons), there are surprisingly few publications combining these dimensions. Whether this is the result of narrow or even very narrow research specializations, publication fashion (model-econometric-statistical articles) or the scarcity of holistic approaches, it isn't easy to say. Probably several factors combined.

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Research methods

The „pyramid" of reaching socio-economic and ecological homeostasis

Homeostasis, desirable for the proper development of human civilisation, should include appropriate relations between society, economy and the natural environment. It was postulated by the supporters of the idea of sustainable development from the Brundtland report of 1987, starting with the slogan of the balance of orders and balancing the relations between the forms of capital. However, they did not emphasise the virtualisation of socio-economic life, which appeared a little later with the development of the Internet. It turned out then that the information society and the network economy can significantly modify human-nature relations, not always in the way they desire. Therefore, it seems justified to propose a simplified but ordering reasoning scheme (Figure 1).

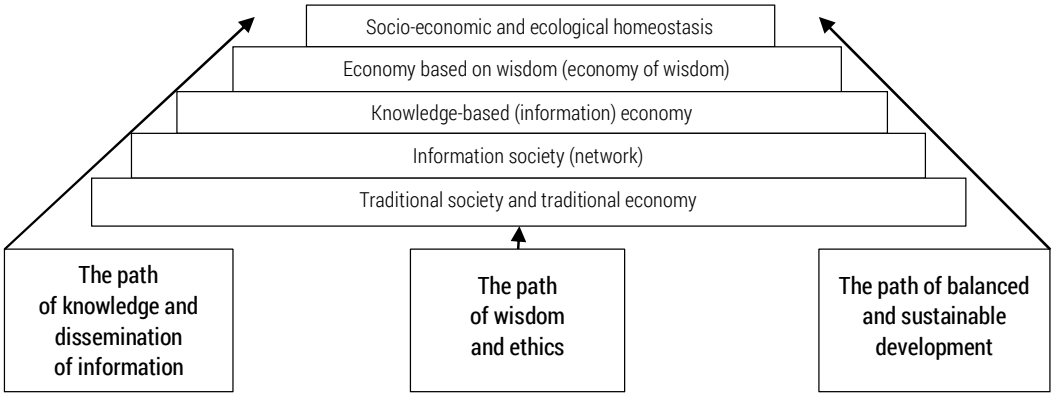

Figure 1. Pyramid of reaching socio-economic and ecological homeostasis

Source: authors' work.

The leading elements of the „development pyramid" model are three ultimately converging paths: (1) knowledge, and dissemination of information, (2) wisdom and ethics of conduct, and (3) balanced and sustainable development.

The first one shows the information society and the situation of information overload as dangerous for the human individual and social groups as the information shortage and ignorance and shows the dangers and the increasingly clear competition between knowledge and post-truth. It is a space for research on information economics and the ecology of information. By following this path, you can identify the right ways to create and use knowledge and structure real information from reliable sources.

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On the other hand, the path of balanced and sustainable development focuses on recognising the challenges that arise at the interface between humans and their activities, primarily economics and the natural environment[1]. Economic and ecological studies show why it is necessary to preserve the Earth (Gaia) as the basis and condition for the biological survival of the human species and its civilisation, especially in the context of maintaining the already achieved quality of life and limiting the yet unresolved global problems expressed, for example, in the form of the Millennium Development Goals and goals of current development strategies.

The path of wisdom and ethics is basically an analysis of the search for social consensus in the field of the right choices of goals, principles, undertakings and ways of their implementation, which are to combine: (1) knowledge, building the foundations of human recognition of the human-economy-natural environment relationship, (2) wisdom, creating the proper use of knowledge in the interest of all elements of the planet Earth and (3) balanced and sustainable development, also combining the needs of present and future generations, in accordance with the principles of intra- and intergenerational justice. All three paths should be followed on the next steps towards socio-economic and ecological homeostasis.

The basis of the "development pyramid" model is the traditional society and the accompanying economy, exposing quantitative changes, an ever-higher level of production and consumption along with the material endowment of life ("to have") based on narrow-economic efficiency and rational use of all available resources, without a particular interest in their future availability. It was in line with the idea of a cowboy economy or the postulate "make the Earth subdued". This way of seeing reality is still found in companies, socio-economic politics or academic centres with their textbooks and classes, as well as in the modern world economy. Contrary to various assessments and expectations, it will not be an easy-to-eliminate optician because it is based on human pride and ignorance, which will not be eliminated quickly by education or science (Szmyd, 2018). This does not mean that objective civilisation processes will not cause specific changes in this respect. Their spectacular example is the creation and evolution of the information society. It is a new dimension of the relationship between people and human groups and changes in the human individuals themselves (their personality, psyche and attitudes). Regardless of what features of the information society will be exposed to, it is a completely different, new sociological structure compared to the traditional society (Becla, 2018). Is it better from the point of view of balanced and sustainable development? The answer to this ques-

[1] These problems can be found in all studies on ecological aspects of management or global environmental challenges (Czaja & Becla, 2007). They were also recognised with the Nobel Prize for William Nordhaus in 2018.

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tion is not unequivocal. It is a society based on much wealthier (in the quantitative and qualitative sense) information resources and easier access to them. At the same time, it is a society that is intellectually and methodically insufficiently prepared to function in a rich information space that is more open and accessible to information "garbage". Without specific skills, the modern man is "forced" to move in a world filled with mixed scientific information, information from common knowledge, false reports of the nature of rumours and incorrect information deliberately changed ideologically. As a result, the data recipient cannot either reduce the transaction costs of obtaining it (Becla, 2019) or verify the truthfulness or credibility of the sources of origin. It is hardly surprising that professor Bazyli Poskrobko consistently postulated the development of the science of knowledge (Poskrobko, 2017).

Undoubtedly, the information society generates a new approach to the economy and management by creating a knowledge-based economy. They combine traditional dimensions with new, virtual forms, changing the structure of production, distribution methods or the role of virtual products from the fourth sector of the economy – the information sector. The economy is undoubtedly more efficient than its traditional forms, but it does not necessarily implement the proper relations of the aforementioned homeostasis. In relation to the knowledge-based economy, many serious reservations can be made in this respect, related to, among others: (1) overconsumption, (2) increasing differences in the standard of living, (3) new forms of exploitation and the economy of waste, (4) „littering" information space or (5) information threats and fraud, as well as (6) social exclusion and polarisation. New forms of environmental threats are also necessary, such as excessive energy consumption and related thermal pollution, or the rapidly increasing electromagnetic pollution, so far treated as an episode of minor importance.

The state of socio-economic and ecological homeostasis can be achieved only when, within the information society, the information space is dominated by scientific knowledge or knowledge derived from experience. Individual individuals and groups are prepared to filter information properly. Moreover, when the information space is freed from threats that are very clearly exposed by the Internet, universal responsibility for the word appears in it (Gawkowski, 2018).

Additionally, it should be remembered that „to know" does not also mean „to use it properly". This was an essential reason for introducing the economic concept based on wisdom. It draws attention to the need to work on appropriate methods of using knowledge for the benefit of man, humanity and the planet Earth, not only in the ecological dimension. Considering the emerging natural or anthropogenic threats, it seems more and more justified. A wisdom-based economy means a space of economic activity in which operating entities skillfully combine knowledge with acceptable ethical princi-

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ples, values, goals that consider the interests of all social groups, including those at risk of exclusion, and the criteria of intra- and intergenerational justice. In such an economy, appropriate values, attitudes and behaviours are essential. However, the problems are, firstly, the identification of these elements, and secondly, the creation of a situation of their universal acceptance, both in the awareness and practice of action, and, thirdly, their effective execution, with sufficiently low transaction costs. This requires a kind of „moral revolution" within the information society. However, this is a very ambitious and challenging task.

Elements of the use of wisdom are visible at all stages of the development pyramid. However, the postulate for the path of wisdom and ethics is unambiguous – there should be more and more of these elements until they are fully dominated. This is an extremely important postulate but probably the least realistic from the practical implementation perspective. This is confirmed by the current conflict between science and post-wisdom.

Protecting the natural environment and its rational use also originates in traditional society and economy. Legal and non-legal ways of preserving the components of nature have been known for quite a long time. The 20th century brought an additional emphasis on the importance of this type of action, exemplified by Harding's optics "Tragedy of Common Goods" (environmental economics) or the Boulding-Sagan concept of the Earth spacecraft (ecological economy). This led to the creation and development of the idea of *Sustainable Development* and then its recognition as the appropriate basis for the development of human civilisation in the 21st century. There have been many exciting proposals for practical actions for the sustainable development strategy, but it has not been possible to coordinate cooperation on a global scale. Therefore, we are dealing with implementing various pro-ecological projects that collide with anti-ecological activities (such as the current Polish energy policy) and do not necessarily contribute to synergistic ecological global effects.

Global climate change is an excellent example of the problems resulting from the lack of an approach based on the three paths mentioned above. On the one hand, many studies and publications prove the path of information and knowledge. On the other hand, there are endless disputes over global climate change's ecological, economic and social consequences, questioning, often contrary to facts, the achievements of climatology or other natural sciences. By the way, there is no adequate planetary strategy to limit such changes and no reliable system for recording the costs of such anthropogenic or natural disasters (Becla & Czaja, 2022). There are many more such examples.

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Conclusions

The turn of the 20th and 21st centuries is characterised by violent civilisation processes, expressed in the creation of the information society and knowledge-based economy, as well as the greening and virtualisation of management and the design of new social structures. Very intense research on these processes takes place in mutual isolation, even though the manifestations and effects of the techniques themselves overlap. And this means the need for a holistic, systemic and dynamic approach to them, i.e. the need to combine three essential paths of achieving balanced and sustainable development in the conditions of the information society, knowledge-based economy and wisdom-based economy. In other words, all human actions should be assessed cumulatively using knowledge, balance and sustainability, and wisdom. Human civilisation is moving to higher and higher levels of its development pyramid. Therefore, it must lead to the desired final effect, socio-economic and ecological homeostasis, and not a state of permanent chaos, which is very costly from the point of view of its existence and functioning, and additionally threatening the survival of the civilisation itself.

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The contribution of the authors

The article is a collaboration between the two authors without specifying the detailed contribution of each.

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