

The Influence of Social and Humanitarian Imperatives for Ensuring Sustainable Development: Case Study in The Context of National Security

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Abstract

The main purpose of the article is to form an effective methodological approach to identifying key social and humanitarian imperatives for ensuring sustainable development and the level of their influence. The object of research is the system for ensuring the sustainable development of Ukraine. The scientific task is to identify key social and humanitarian imperatives and assess their impact on sustainable development through the established methodological approach. The methodology includes the method of semantic networks in synthesis with the method of predicate language construction. At the same time, a formalized description method was used. Recommendations were made on the impact of one of the key imperatives. As a result of the conducted research, a scheme of mutual understanding of imperatives and a matrix of priorities that were most significant for Ukraine were formed. The obtained result is extremely important for information support of national security and sustainable development. Possible limitations of this study include the specificity of the context, in particular, that key socio-humanitarian imperatives were largely associated with military action, which is typical for the situation in Ukraine, but may not be common in other countries. Future research prospects may include expanding the analytical framework to include additional imperatives and factors that may impact sustainable development and national security in a changing global context.

Keywords: Sustainable Development, Social and Humanitarian Imperatives, Security, Social Justice, Human Rights, National Security

INTRODUCTION

Modern trends in sustainable development include the synthesis and optimization of the system for integrating innovative technologies, green economy and rational use of resources, while forming a strategic vector for social justice, social development and ensuring national security. But along with economic and social issues, the degree of influence of key social and humanitarian imperatives relating to different spheres of society is growing. These aspects are key to ensuring national security, maintaining social sustainability and development, which are the basic elements of sustainable development.

In the context of global changes and challenges related to climate change, migration processes and geopolitical conflicts, it is becoming increasingly clear that the processes of ensuring sustainable development and maintaining national security are increasingly interconnected. Moreover, this interdependence is two-way. Thus, irrational handling of natural resources and failure to comply with environmental norms and standards can lead to the development of social inequality and marginalization of society, which in turn will lead to a deterioration in the level of national security. Thus, understanding the extent of the influence of key social and humanitarian imperatives, as well as the ability to manage this influence, constitute the basis of sustainable development today.

Social and humanitarian imperatives, covering education, health, gender equality and social justice, play a critical role in achieving sustainable development. Education, for example, is critical to developing responsibility and awareness among citizens regarding sustainable practices and the importance of conserving resources for future generations. It promotes a culture of innovation and adaptation that is integral to the development of

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sustainable technologies and approaches to resource management. This, in turn, has a direct impact on national security, as an educated society is better prepared to deal with challenges such as climate change, natural disasters and other threats that can undermine social stability and economic well-being.

Population health is another important factor influencing a country's ability to achieve sustainable development and ensure national security. Access to quality health care and support for shared prosperity help reduce social inequality and increase productivity. This in turn strengthens economic stability and the country's ability to withstand external and internal threats. A healthy nation is also better able to adapt to rapid changes and challenges, which is a key aspect of confronting global threats such as epidemics or the effects of climate change.

Gender equality and social justice are other critical elements of the social and humanitarian imperatives that promote sustainable development and security. Integrating these principles into policy and practice helps create a more inclusive society where every citizen can contribute to economic development and social stability. This reduces the risks of social conflicts and provides a more stable basis for resolving internal and external challenges.

Military actions lead to a significant deterioration in sustainable development, especially in matters of land pollution. Conflicts not only wreak havoc on the social fabric and economies of countries, but also cause irreparable damage to the environment through land, water and air pollution, making it difficult to achieve sustainable development goals. Loss of biodiversity, soil degradation, destruction of ecosystems are just some of the environmental consequences that require immediate solutions and the implementation of appropriate measures to minimize the impact of military activities on the environment and promote the restoration of sustainable development (Figure 1)

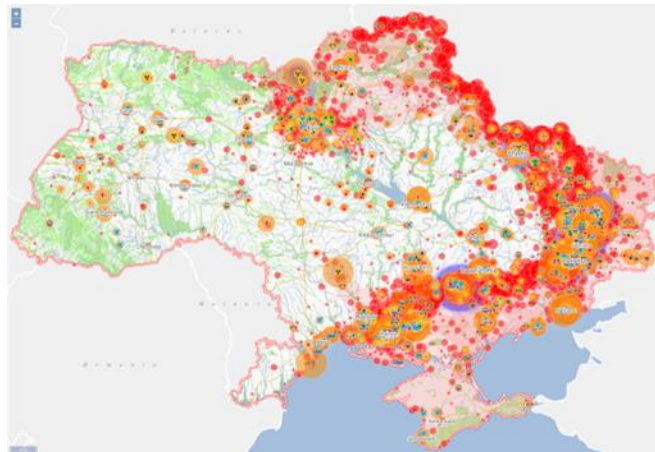


Figure 1: The scheme of interrelations between the defined methods of managing artificial intelligence

Source: website of official statistics

Thus, social and humanitarian imperatives are critical to ensuring sustainable development and security. Their integration into development strategies contributes to the formation of a strong, healthy and educated society that can adapt and withstand future challenges, ensuring stability and prosperity for future generations.

The main purpose of the article is form an effective methodological approach to identifying key social and humanitarian imperatives for ensuring sustainable development and the level of their influence. The object of research is the system for ensuring sustainable development of Ukraine.

The structure of the article consists of a literature review, methodology, presentation of results, discussion and conclusions.

LITERATURE REVIEW

An important element of our research is a detailed analysis of the literature, which provides a deep understanding and theoretical basis for studying the impact of social and humanitarian imperatives on ensuring

sustainable development in the context of national security. Through a thorough review of academic work, particularly studies examining the history and principles of sustainable development, the role of culture, economic and social aspects in sustainability, and the integration of sustainable development goals into corporate social responsibility and political cohesion, we provide the basis for our analytical approach. This analysis not only helps identify key themes and challenges, but also identifies potential ways to integrate social and humanitarian imperatives into sustainable development strategies to strengthen national security and social resilience.

Mensah and Casadevall (2019) offer an in-depth overview of the meaning of sustainable development, its history, underlying principles and pillars. This source can serve as an excellent theoretical foundation for your research, as it elaborates on the various aspects of sustainable development and their implications for human activity, which is key to understanding the impact of social and humanitarian imperatives.

At the same time, Holden et al. (2017) focus on sustainable development imperatives, with an emphasis on needs, equity and constraints. This work makes an important contribution to the debate on the relationship between sustainable development and socio-humanitarian aspects, in particular through the lens of equity and constraints that must be taken into account in the context of national security.

The work of Béné, et al. (2018) is of global significance. which provide insights from the World Bank's Adaptive Social Protection program, highlighting how humanitarian responses can be linked to long-term development through transformative change. This example shows how social and humanitarian initiatives can contribute to sustainable development in conditions that are directly related to national security.

Nunes, et al. (2016) highlight the importance of an integration framework for achieving sustainable development goals, particularly in the context of health and well-being. Their analysis confirms that health and well-being are central to sustainable development and national security, noting the need for an integrated approach. Similar is the work of Hariram et al. (2023), who in their work develop the concept of “Sustainalism”, an integrated socio-economic-ecological model aimed at addressing the challenges of sustainable development and sustainability. Their ideas may inspire new approaches to exploring the interactions between social science imperatives and sustainable development in your research.

The practical side of this issue is highlighted by Allen, et al. (2018), who review initial progress in implementing the Sustainable Development Goals, providing evidence from countries. This source can be useful for analyzing real-life examples of the impact of national strategies on achieving sustainable development and their relationship to national security.

An important social imperative is inclusive integration. Thus, Gupta, et al. (2016) consider sustainable development goals through the prism of inclusive development, emphasizing the importance of involving broad sections of the population in the process of achieving sustainable development. Their findings highlight the importance of social and humanitarian imperatives in creating a more just and secure world.

Further aspects of the social dimension of sustainable development are explored by Wojewódzka-Wiewiórska, et al. (2020) in the context of analyzing the balance between social and economic aspects of sustainability in rural areas, focusing on the quality of life of farmers. This source is important for understanding how improving living conditions in rural areas can affect national security through ensuring food security and regional stability, which are important factors for social sustainability.

Lazar, Chithra (2022) emphasize the role of culture in sustainable development and a permanent built environment. Analyzing the impact of cultural dimensions provides insights into how the preservation of cultural heritage and identity can contribute to sustainable development while enhancing national security by creating a sense of unity and promoting social cohesion.

At the same time, Fallah Shayan, et al. (2022) and Collste, et al. (2017) discuss sustainable development goals as a framework for corporate social responsibility. This approach demonstrates how companies can integrate

sustainability goals into their strategies, thereby contributing to national security through economic sustainability and social responsibility.

At the international level, the issue of humanitarian and social imperatives is explored by Kolk (2016). Thus, his work focuses on the social responsibility of international business, from ethics and the environment to corporate social responsibility and sustainable development. The author analyzes how the activities of international business influence global and national sustainable development goals, noting their role in ensuring social sustainability and economic security.

Despite the large number of existing sources and in-depth analysis carried out within the framework of the topic of sustainable development and the connection with socio-humanitarian imperatives and national security, there are still significant gaps and shortcomings in this area of research. In particular, the relationship between specific social and humanitarian initiatives and their direct impact on increasing the level of national security has not been sufficiently studied. Many of the existing studies tend to focus on general overviews without detailed analysis of specific case studies, leaving open the question of how specific policies and practices can be optimized for maximum effectiveness. In addition, there is a growing need for more comprehensive research that integrates perspectives from multiple disciplines to better understand how the social, economic, and environmental dimensions of sustainable development interact in the context of national security.

Having systematized, we have identified the following three key gaps and shortcomings:

Interaction between social and humanitarian imperatives and state security. Despite recognition of the importance of socio-humanitarian imperatives for sustainable development, there is a lack of research that specifically analyzes how these imperatives influence aspects of national security, such as social sustainability, food security, and protection from natural and man-made threats. More detailed studies are needed that examine the specific mechanisms of this influence and offer policy recommendations.

Integration of interdisciplinary approaches. Much existing research tends to view sustainable development from highly specialized perspectives, often ignoring the cross-influences between different fields such as economics, sociology, ecology and political science. This creates a gap in understanding the complexity and interrelationship between different aspects of sustainable development and national security. It is important to develop more integrated and interdisciplinary research approaches.

Empirical research and case studies. There is a significant gap in the number of empirical studies and in-depth case studies that illustrate how specific social and humanitarian initiatives impact various aspects of sustainable development and national security. More research is needed that examines real-life examples of the integration of social and humanitarian imperatives into national and international policies, and assesses their impact in practice, to provide a better understanding of effective strategies and approaches.

As a result of the review of the existing literature, let's formulate our own scientific task:

Identify key social and humanitarian imperatives and assess their impact on sustainable development through the established methodological approach.

Explore and adapt interdisciplinary methods of analysis to better understand the relationships between these imperatives and various aspects of sustainability

METHODOLOGY

The study uses comprehensive methodological approaches aimed at deep understanding of the interaction between social and humanitarian imperatives and their impact on sustainable development and national security. The key methods of analysis are the method of semantic networks, the method of predicate language construction and the method of formalized description, each of which has its own specifics, advantages and limitations.

The method of semantic networks is used to visualize and analyze the structure of connections between social and humanitarian imperatives and elements of sustainable development. This method identifies key concepts and their interactions, creating a graphical representation that makes complex relationships easier to understand.

The main advantage of the method is its visuality and ability to model complex system relationships, which helps to identify hidden patterns and dependencies. However, the method has limitations due to the difficulty of interpreting large networks and the need to accurately determine relationships.

The predicate language construction method is used to formalize the description of the connections between social and humanitarian imperatives and their impact on sustainable development through structured statements. This method allows complex ideas and interactions to be expressed in a standardized form, which promotes deeper analytical understanding and logical inference. Using a predicate language simplifies the analysis process by introducing clear terminology and data structure. The advantage is the possibility of detailed analysis and formalization of complex processes. The main disadvantages of the method are related to the high barrier to entry and the need for a deep understanding of the specifics of the subject area for correct application.

The formal description method is used to review imperatives to examine in detail their structure, functions and relationships in the context of sustainable development and security. This method allows you to structure large amounts of information and present it in a form convenient for analysis. It promotes an accurate and objective description of phenomena, taking into account their properties and interactions. The advantages of the method are its consistency and accuracy in data presentation. However, the method can be expensive and require significant effort to collect and analyze data.

To objectify the research, we decided to focus the analysis on social and humanitarian imperatives specifically in Ukraine. The choice of Ukraine as a research subject is due not only to the authors' deep understanding of the country's economic, political and social realities, but also to effective communication with local experts and sustainable development authorities. This approach allowed us not only to dive deeper into the context of Ukrainian realities, but to ensure a high level of relevance and applied value of the research. Interaction with experts and representatives of government bodies enriched the work with unique data and insights, which contributed to the formation of well-founded conclusions and recommendations focused on practical implementation in Ukrainian conditions.

In order to establish key social and humanitarian imperatives and their basic relationships, 40 experts on sustainable development and national security of Ukraine were involved in our research. Each expert went through a series of interviews, resulting in unique expert judgment and data. All communications between experts followed the principles of expert research ethics. This approach not only enriched the study with real-world experience and expert knowledge, but also ensured relevance and practical significance.

RESULTS AND DISCUSSION

At the first stage of our research, in collaboration with experts, seven key social and humanitarian imperatives were identified that determine the programs and level of sustainable development in Ukraine.

X1. National security sustainability. Considering the events of recent years, the issue of the sustainability of national security is an important social and humanitarian imperative that determines the stability of the political and social environment, which is a determining condition for sustainable development. This includes issues of protection from internal and external threats, as well as the problem of improving the country's institutional capacity.

X2. Economic sustainability. The issue of ensuring a sufficiently high level of economic sustainability is key to improving the standard of living of the population, developing the business potential of the region and accelerating the level of poverty.

X3. Social justice. The problem of social inequality and equal access to resources is relevant for many countries, including Ukraine. Solving these problems is an important step in the development of a modern, fair and democratic society.

X4. Healthcare. This imperative includes the quality and level of access to quality medical services and improving the standard of living of the population, which in turn reduces social tension and the burden on the economy. X5. Environmental sustainability. Conserving natural resources and reducing negative impacts on the

environment are critical to maintaining the vitality of our planet and ensuring the well-being of future generations.

X6. Education and development of human capital. Investment in education and skills development underpins the innovation, economic growth and social progress needed to achieve sustainable development.

X7. Hostilities. The impact of military conflicts and actions on sustainable development is significant, since they not only threaten the lives and well-being of the population, but also destroy infrastructure, disrupt social and economic systems, creating additional challenges for reconstruction and development.

We create two-level connection diagrams for each of the social and humanitarian imperatives (Figure 2), analyzing both direct and indirect influences, where the latter are transmitted through other imperatives.

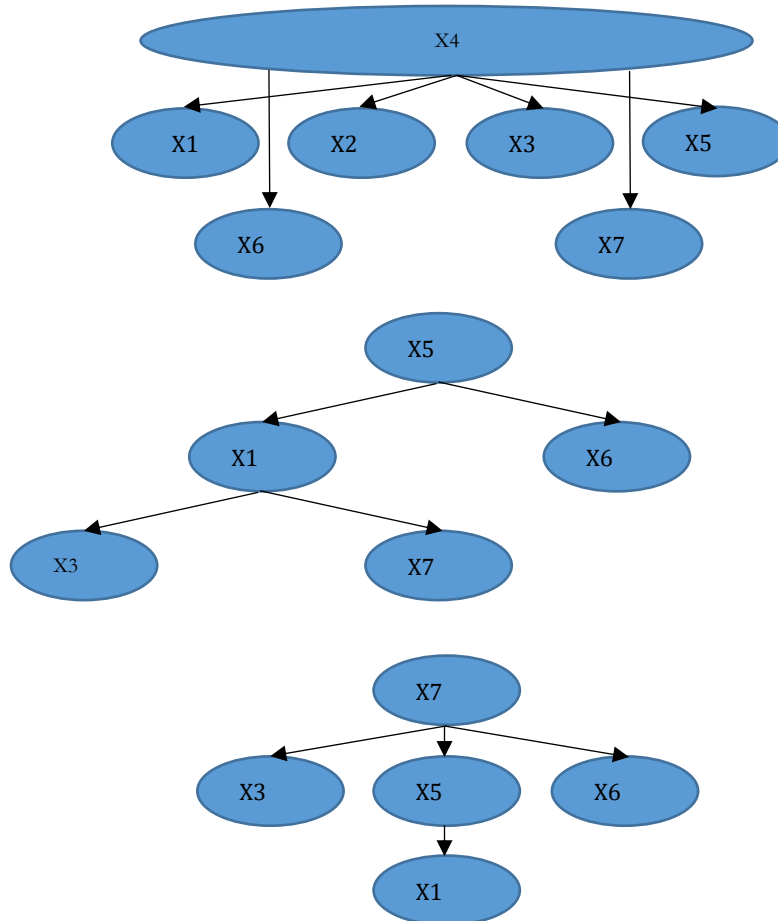


Figure 2: First level of two-level connection diagrams for each of the social and humanitarian imperatives

Source: own analysis

Predicate language constructs, including atomic predicates and logical connections, will be used to detail the semantic network. Thus, the following types of logical connections will be used: \wedge – logical “and”; \vee – logical “or”; \leftarrow – logical “if”; \forall – general quantifier (for all); \exists – existence quantifier (at least one exists)

Applying all of the above logical connections, we obtain the following formalized meaning of social and humanitarian imperatives:

$(\forall x_i) [\exists(x_i) \leftarrow \text{defines } (x_1, x_2) \wedge \text{is assumed } (x_1, x_4) \wedge \text{determined by } (x_1, x_7)];$

$(\forall x_i) [\exists(x_2) \leftarrow \text{determines } (x_2, x_3) \wedge \text{is defined } (x_2, x_1) \wedge \text{determined by } (x_2, x_4) \wedge \text{defines } (x_2, x_5) \wedge \text{determined by } (x_2, x_7)];$

$(\forall xi) [\exists(x3) \leftarrow \text{determines } (x3, x7) \wedge \text{determined by } (x3, x2) \wedge \text{determined by } (x3, x5) \wedge \text{is assumed } (x3, x6)];$

$(\forall xi) [\exists(x4) \leftarrow \text{is assume } (x4, x1) \wedge \text{determines } (x4, x2)];$

$(\forall xi) [\exists(x5) \leftarrow \text{defines } (x5, x2) \wedge \text{determines } (x5, x3) \wedge \text{determined by } (x5, x6) \wedge \text{is getting } (x5, x7)];$

$(\forall xi) [\exists(x6) \leftarrow \text{is assume } (x6, x3) \wedge \text{determines } (x6, x5) \wedge \text{determines } (x6, x7)];$

$(\forall xi) [\exists(x7) \leftarrow \text{determines } (x7, x1) \wedge \text{determines } (x7, x) \wedge \text{affects on } (x7, x5) \wedge \text{determined by } (x7, x3) \wedge \text{determined by } (x7, x6)].$

For simplified understanding, the second level of the connection diagrams is placed in a separate Fig. 3

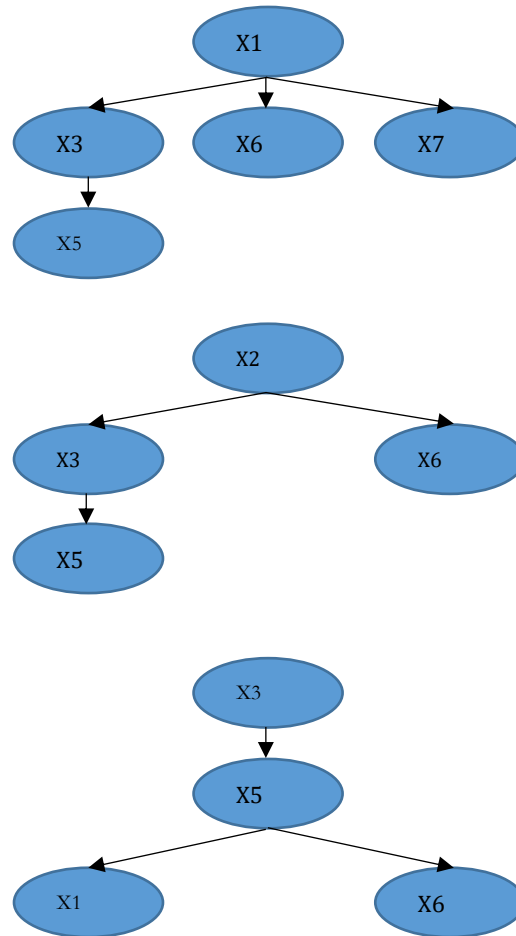


Figure 3: Second level of two-level connection diagrams for each of the social and humanitarian imperatives

Source: own analysis

Using the diagrams of factor connections (Fig. 2; Fig. 3), we build a modified scheme for representing the connections between imperatives that influence sustainable development. This diagram, located in Table 1, demonstrates the vectors of direct influence of each of the imperatives and the ways of dependence on other imperatives.

Table 1: The main vectors of direct influence of each of the imperatives and the ways of dependence on other imperatives

The imperative number	Direction of influence	Ways of dependence
1	Influences imperatives:3;6;7	Has dependence on imperatives: 4;5
2	Influences imperatives:3;7	Has a dependence on imperatives:4
3	Influences imperatives:5	Has dependence on imperatives: 4;7
4	Influences imperatives:1;2;3;5;6;7	-
5	Influences imperatives:1;6	Has dependence on imperatives: 3;4;7
6	-	Has dependence on imperatives: 1;4;5
7	Influences imperatives:3;5;6	Has dependence on imperatives: 1;4

Source: own analysis

Next, we have arranged atomic predicates of various types by attaching them to relevant social and humanitarian imperatives (Table 2).

Table 2: The atomic predicates of various social and humanitarian imperatives

The imperative number	Direction of influence
X_1	defines, assumed, determined by
X_2	determined by, defined, determined by
X_3	determines, determined by, determined by, assumed
X_4	assume, determines
X_5	defines, defined, determined by, getting
X_6	assume, determines determines
X_7	determines determines affects on determined by, determined by

Source: own analysis

Before we begin to determine the ranks of social and humanitarian imperatives, taking into account the degree of their influence, expressed through linguistic predicates, we must first establish the numerical values of this influence at the micro level, regardless of the predicates.

To determine the general weighting coefficients of direct and indirect impacts of imperatives, as well as their complex dependence on other elements, we introduce the corresponding symbolic values.

Let z_{ij} represent the number of influences or dependencies for the j -th social and humanitarian imperative ($j=1, \dots, n$); w_i is the weight of the i -th type of impact or dependence. We will highlight the following types of connections between social and humanitarian imperatives, classifying them depending on the value of the connection index for each type: $i=1$ refers to direct first-order impacts; $i=2$ – to direct influences of the second order; $i=3$ – to first-order dependencies; $i=4$ – depending on the second order.

When carrying out calculations, we establish conditional values of weighting coefficients for different types of dependencies. Let us assume that for direct effects the weights will be positive, i.e. $w_1 > 0$, $w_2 = w_1/2$, and for dependencies - negative, namely: $w_3 < 0$, $w_4 = w_3/2$. The general weight values of social and humanitarian imperatives, obtained as a result of summing the weights of all types of connections, will be denoted by S_{ij} .

As a result, we get the following formula (1)

$$S_{ij} = z_{ij} w_i (i = 1, 2, 3, 4; j = 1, \dots, n) \quad (1)$$

where n – numer of social and humanitarian imperative

In order to bring the weight values of social and humanitarian imperatives to a positive range, namely “to the origin,” it is necessary to shift the integral display of all types of connections upward (2).

$$\Delta_j = \max|S_{3j}| + \max|S_{4j}|, (j = \overline{1..7}) \quad (2)$$

Taking into account formula (2), the final formula for determining the final numerical priorities of social and humanitarian imperatives will be presented as follows (3):

$$S_{Fj} = \sum_{i=1}^4 z_{ij} w_i \max|S_{3j}| + \max|S_{4j}|, (j = \overline{1..7}) \quad (3)$$

Calculations will be made using two-level connection diagrams presented in Figures 2 and 3 and Table 1. Analysis of these diagrams will allow us to determine the quantitative characteristics of connections of different types associated with each of the social and humanitarian imperatives. In addition, we assume that the weights for both types of influences will be positive with assigned conditional values: $w_1=10$, $w_2=5$, while for the dependencies they will be negative, namely: $w_3=-10$, $w_4=-5$. The general weight values for social and humanitarian imperatives, taking into account the sum of the weights of all types of connections, will be designated by formula (2) as S_{ij} . This will allow us to obtain information for a preliminary ranking of imperatives influencing sustainable development (Table 3).

Table 3: The atomic predicates of various social and humanitarian imperatives

<i>J</i>	<i>z_{1j}</i>	<i>z_{2j}</i>	<i>z_{3j}</i>	<i>z_{4j}</i>
1	Data: 3	Data: 1	Data: 2	Data: 2
2	Data: 2	Data: 1	Data: 1	Data: 1
3	Data: 1	Data: 2	Data: 4	Data: 1
4	Data: 6	Data: 0	Data: 0	Data: 0
5	Data: 2	Data: 2	Data: 3	Data: 2
6	Data: 0	Data: 0	Data: 5	Data: 1
7	Data: 3	Data: 1	Data: 2	Data: 0
<i>S_{ij}</i>	<i>S_{2j}</i>	<i>S_{3j}</i>	<i>S_{4j}</i>	<i>S_{Fj}</i>
Data: 30	Data: 5	Data:-20	Data:-10	Data: 75
Data: 20	Data: 5	Data:-10	Data:-5	Data: 70
Data: 10	Data: 10	Data:-40	Data:-5	Data: 45
Data: 60	Data: 0	Data: 0	Data: 0	Data:130
Data: 20	Data: 10	Data:-30	Data:-10	Data: 60
Data: 0	Data: 0	Data:-50	Data:-5	Data: 15
Data: 30	Data: 5	Data:-20	Data: 0	Data: 85

Source: own analysis

To quantitatively express linguistic predicates, we will establish weighting coefficients for predicates, the purpose of which will be to assess the numerical impact on strengthening or weakening interactions between social and humanitarian imperatives, depending on the associated linguistic predicates and types of dependencies. Thus, let us denote k_{ip} as the weighting coefficients of predicates indicating the strengthening or weakening of impacts or dependencies for the *p*-th predicate of the *i*-th impact type. As before, the types of connections between imperatives will be classified in accordance with the connection index of a certain type, where: $i=1$ refers to direct influences of the first order; $i=2$ – to indirect influences of the second order through another imperative; $i=3$ – to direct first-order dependencies; $i=4$ – to indirect second-order dependencies that arise when connecting through another imperative.

Taking into account the above conditions, we will obtain a linguistic definition of predicates for various types of relations between imperatives, as well as their quantitative conditional weights, presented in Table 4.

Table 4: Data from preliminary ranking of social and humanitarian imperatives affecting sustainable development

<i>L</i>	Impact predicate	$k_{1,p}$	$k_{2,p}$
1	Defines	4	2
2	Forms	4	2
3	Determines	3	1.5
4	becomes the basis	4	2
5	assumes	2.5	1.25
6	takes into account	2.5	1.25
7	influences	3	1.5
<i>L</i>	Dependency predicate	$k_{3,p}$	$k_{4,p}$
1	determined	4	2
2	is being formed	4	2
3	to be specified	3	1,5
4	is based	4	2
5	supposed	2.5	1.25
6	taken into account	2.5	1.25
7	receives	3	1.5

Source: own analysis

To simplify the presentation of information, let us present sets of coefficients associated with imperatives indicating direct first-order influences (4):

$$\begin{aligned}
 x_1 \subset M11 &= \{k_{1,p1}\}; \\
 x_2 \subset M12 &= \{k_{1,p3}\}; \\
 x_3 \subset M13 &= \{k_{1,p3}\}; \\
 x_4 \subset M14 &= \{k_{1,p5}; k_{1,p3}\}; \quad (4) \\
 x_5 \subset M15 &= \{k_{1,p1}; k_{1,p3}\}; \\
 x_6 \subset M16 &= \{k_{1,p5}; k_{1,p3}; k_{1,p3}\}; \\
 x_7 \subset M17 &= \{k_{1,p3}; k_{1,p3}; k_{1,p7}\};
 \end{aligned}$$

According to formula (4), factor x_1 corresponds to set M11, x_2 to set M12, and so on. The first number in the name of the set means the type of connection, while the second is the serial number of the imperative. Next, you should enter the numerical values of the corresponding coefficients from Table 4 into formulas (3.6). Thus, for the first imperative, we create sets, the elements of which are formalized representations of the numerical values of predicates that take into account all types of connections. The number of elements in these sets will be denoted as z_{ij} , the value of which is set according to formulas (4), obtaining the following formulas (5):

$$\begin{aligned}
 M11 &= \{m11_1; m11_2; \dots, m11_{z11}\}; \\
 M21 &= \{m21_1; m21_2; \dots, m21_{z21}\}; \quad (5) \\
 M31 &= \{m11_3; m11_3; \dots, m11_{z31}\}; \\
 M41 &= \{m11_4; m11_4; \dots, m11_{z41}\};
 \end{aligned}$$

So, for example, we obtain the average values of the amplification coefficients of the action of predicates for the first imperative and its sets (5) from expressions (6):

$$k_{11} = \sum_{r=1}^{z_{11}} \frac{m11_r}{z_{11}}$$

$$k_{21} = \sum_{r=1}^{z_{21}} \frac{m_{11r}}{z_{21}} \quad (6)$$

$$k_{31} = \sum_{r=1}^{z_{31}} \frac{m_{11r}}{z_{31}}$$

$$k_{41} = \sum_{r=1}^{z_{41}} \frac{m_{11r}}{z_{41}}$$

We obtain the updated weight values of the factors P_{ij} by multiplying the coefficients k_{ij} by the total fractional weights S_{ij} (Table 3). For the specific graph shown in Fig. 2 and Fig. 3, will have a final expression for calculating the refined weight values for social and humanitarian imperatives (7):

$$G_{fj} = INT \left(\sum_{i=1}^4 (k_{ij} S_{ij} + \Delta_j) \right), (j = \overline{1,7}) \quad (7)$$

Having carried out calculations using the presented formulas for all social and humanitarian imperatives, we obtain the final ranking results (Table 5).

Table 5: Ranking results of social and humanitarian imperatives affecting sustainable development

j	k_{1j}	k_{2j}	k_{3j}	k_{4j}
1	Data:3.3	Data: 5	Data: 4	Data: 2
2	Data:2.7	Data:2.7	Data: 4	Data: 2
3	Data: 4	Data:1	Data: 3	Data: 6
4	Data: 0	Data: 0	Data: 0	Data: 0
5	Data:3.2	Data:1.6	Data: 3	Data:2.2
6	Data: 0	Data: 0	Data:3.1	Data:7.7
7	Data:3.2	Data:4.7	Data:3.5	Data: 0
P_{ij}	P_{2j}	P_{3j}	P_{4j}	P_{7j}
Data: 99	Data:25	Data:-80	Data:-20	Data:217.5
Data: 54	Data:13.5	Data:-40	Data:-10	Data: 211
Data: 40	Data: 10	Data:-120	Data:-30	Data:93.5
Data: 0	Data: 0	Data: 0	Data: 0	Data:193.5
Data: 64	Data: 16	Data:-90	Data:-22	Data:161.5
Data: 0	Data: 0	Data:-155	Data:-38.5	Data: 0
Data: 96	Data:23.5	Data:-70	Data: 0	Data: 243

Source: own analysis

The findings of our study found that the social and humanitarian imperative of “military action” has a high impact on sustainable development, and “National security sustainability” ranks second in importance. Given our limitations as sustainability researchers in providing recommendations for resolving military conflict, we can offer recommendations for optimizing the impact of the level of national security resilience on sustainable development. The following recommendations are aimed at improving efficiency in this area:

Strengthening intersectoral cooperation. Ensure close collaboration across multiple sectors—public, private, non-profit—to develop and implement comprehensive programs aimed at strengthening national security and resilience during and after hostilities.

Investments in the development of local communities. Focusing on supporting and rebuilding local communities through investments in education, health, social infrastructure and economic activity can support recovery and build resilience at the national level.

Focus on innovative security technologies: The introduction and use of advanced technologies to monitor, predict and respond to threats to national security can significantly improve the effectiveness of a country's security system, thereby promoting sustainable development

DISCUSSION

The next step is to compare the results obtained from our study with existing research on this topic. This allows us not only to highlight the uniqueness and novelty of our findings in the context of social and humanitarian imperatives and their impact on sustainable development, but also to examine in detail how our findings correlate or differ from existing theoretical and empirical frameworks. Such comparative analysis not only enriches the academic discourse in the field of sustainable development and national security, but also opens up new directions for further research, contributing to the development of a comprehensive understanding of this issue.

In this context, our study presents a comprehensive view of the impact of social and humanitarian imperatives on sustainable development and national security in Ukraine, using a unique methodological approach that includes the method of semantic networks in synthesis with the method of constructing a predicate language. This allows our research to not only identify key imperatives, but also assess their impact with new precision and depth. By considering each of the sources listed, we can identify important aspects and differences in our research.

Thus, Kohrt et al. (2019) highlight the need for health research during humanitarian crises, emphasizing the urgency of health research in emergency situations. Our research expands this perspective by examining a broader range of social and humanitarian imperatives and their impact on sustainable development, highlighting the importance of an integrated approach to ensuring country sustainability.

Pereira et al. (2024) explore the impact of social entrepreneurship among social workers on achieving the Sustainable Development Goals, highlighting the potential benefits of such initiatives. In the context of our research, we are exploring a broader set of social and humanitarian imperatives, allowing us to cover different aspects of sustainability and security, not limiting ourselves to just one area of activity.

At the same time, Bansal et al. (2023) examine the role of social enterprises in promoting sustainable development, illustrating their potential and challenges. Our research expands on this topic by including in the analysis not only social enterprises, but also other social and humanitarian imperatives that influence different aspects of society and government.

Leal Filho et al. (2022) explore barriers to achieving social sustainability by analyzing a variety of obstacles to sustainable development. Our research offers practical tools for identifying and assessing the social and humanitarian imperatives that can help overcome these barriers.

Similar studies include Ahmad, et al. (2024), who provide a review of research focusing on factors associated with environmental, social and governance sustainability in the context of business investment. Our research expands on this framework by examining how social and humanitarian imperatives can be integrated into the broader context of sustainable development.

Stafford-Smith et al. (2017) indicate the need to integrate different aspects of sustainable development to achieve sustainable development goals. Our study responds to this challenge by offering a comprehensive methodological approach that allows us to analyze the interaction between social, humanitarian imperatives and their impact on sustainable development in the context of national security.

An important study is the work of Mishra, et al. (2023) conduct a bibliometric analysis of the Sustainable Development Goals (SDGs), detailing the progress, challenges and opportunities associated with their achievement. This study provides an important overview of the scientific literature on SDGs and helps identify key directions for future research. In comparison, our research focuses on developing a methodological approach to identify and analyze the impact of social and humanitarian imperatives on sustainable development in the context of Ukrainian national security.

The challenges and threats in this area are explored by Swain and Yang-Wallentin (2020), who examine the challenges and strategies for achieving the Sustainable Development Goals, highlighting the obstacles countries face in implementing the SDGs. The authors highlight the importance of integrated approaches and cross-sector collaboration for successfully achieving sustainable development. Our research expands this debate by emphasizing the importance of social and humanitarian imperatives as fundamental elements influencing all aspects of sustainable development. We demonstrate how a detailed analysis of these imperatives can reveal new opportunities to improve the effectiveness of strategies to achieve the SDGs, especially in contexts that require adaptation to specific national security challenges.

To summarize, Table 6 focuses on three aspects of the practical value of the results.

Table 6: The main aspects of the practical value of the results.

Practical value aspect	Aspect Essence
Policy support	The results of the analysis and recommendations can become the basis for the further formation of large and long-term strategic plans that will be aimed at accelerating and optimizing sustainable development.
Strengthening cross-sector collaboration	The information obtained contributes to the understanding of the importance of intersectoral interaction between government agencies, the private sector and the public in the context of optimizing the impact of social and humanitarian imperatives on sustainable development.
Education and awareness-raising	The results obtained can be used not only in the management decision-making system, but also in the context of educational training and programs aimed at improving the level of awareness of society and business about current problems and promising directions for solving them.

Source: own analysis

Thus, the innovativeness of our research lies in the introduction of an integrated methodological approach that combines the method of semantic networks and the method of predicate language construction for an in-depth analysis of the relationships between social and humanitarian imperatives and their impact on sustainable development in the context of national security. This approach allows not only to identify key imperatives, but also to assess their impact with hitherto unseen accuracy and depth. Applying these methods in synthesis has revealed unexpected connections and influences, revealing new perspectives on understanding and strengthening sustainable development and national security, making our research a significant contribution to relevant scientific discourses.

CONCLUSION AND RECOMMENDATION

In the context of global challenges and the constant evolution of the conditions for sustainable development, understanding the influence of social and humanitarian imperatives on ensuring the sustainability and security of the national system is of particular importance. Through the lens of our research focused on the Ukrainian case, we sought to delve deeper into the complexity of these relationships, analyzing how individual social and humanitarian imperatives influence the country's resilience in the war and post-war periods. This analysis has proven critical to the development of effective national security strategies that take into account a broader range of sustainability factors to create more resilient and secure societies.

The established framework of mutual understanding of imperatives and matrix of priorities played a key role in identifying the most important aspects that should be the focus of planning strategies for national security and sustainable development. These tools have helped to identify how social and humanitarian imperatives influence each other and the overall sustainable development picture, thereby highlighting the complexity of the relationships in the sustainable development system.

Particular attention in this chapter is paid to the analysis of how existing priorities influence different spheres of social life and public administration. The identification of key imperatives and their impact on sustainable development demonstrates the need to integrate these imperatives into all levels of political and social planning.

The results are also reflected, indicating the extreme importance of the findings for information support of national security. Understanding which social and humanitarian imperatives have the greatest impact on sustainable development allows us to formulate more targeted and effective strategies in this area.

After implementing all the methods indicated, we identified two key social and humanitarian imperatives that have a dominant impact on sustainable development in Ukraine. Thus, military operations and the level of stability of national security have a key influence. Considering that today, when Ukraine is in the active phase of military operations, optimizing the impact of military operations on sustainable development is problematic, since the authors of the study are not military experts, based on an analysis of the second most important social and humanitarian imperative, we have provided a number of recommendations, which can be auxiliary in the formation of strategic and tactical optimization measures. Taking this into account, the proposed methodological approach and recommendations can become the basis for the further formation of strategic directions for sustainable development for Ukraine.

The study has limitations that should be considered. Yes, one of the key limitations of the study is that the selection of key social and humanitarian imperatives was based on Ukrainian realities. Thus, the key chosen imperative was precisely the one that related to military actions. This specificity may complicate the adaptation of the research findings and recommendations to the realities of sustainable development in other countries.

Prospects for further research will be to expand the list and analysis of social and humanitarian imperatives in relation to the realities of other countries, as well as attempts to analyze such imperatives at the global level. At the same time, a promising direction for further research will be to study the dynamics of the influence of these imperatives on sustainable development in the longer term.

REFERENCES

- Ahmad, H., Yaqub, M., Lee, S. (2024) Environmental-, social-, and governance-related factors for business investment and sustainability: a scientometric review of global trends. *Environ Dev Sustain* 26, 2965–2987. <https://doi.org/10.1007/s10668-023-02921-x>
- Allen, C., Metternicht, G. & Wiedmann, T. (2018) Initial progress in implementing the Sustainable Development Goals (SDGs): a review of evidence from countries. *Sustain Sci* 13, 1453–1467. <https://doi.org/10.1007/s11625-018-0572-3>
- Bansal, S., Garg, I., & Vasa, L. (2023). Can social enterprises aid sustainable development? Evidence from multi-stage investigations. *PloS one*, 18(2), e0281273. <https://doi.org/10.1371/journal.pone.0281273>
- Béné, C., Cornelius, A., Howland, F. (2018) Bridging Humanitarian Responses and Long-Term Development through Transformative Changes—Some Initial Reflections from the World Bank’s Adaptive Social Protection Program in the Sahel. *Sustainability*. 10(6), 1697. <https://doi.org/10.3390/su10061697>
- Collste, D., Pedercini, M., & Cornell, S. E. (2017). Policy coherence to achieve the SDGs: Using integrated simulation models to assess effective policies. *Sustainability Science*, 12, 921–931. <https://doi.org/10.1007/s11625-017-0457-x>
- Fallah Shayan N., Mohabbati-Kalejahi N., Alavi S., Zahed M. (2022) Sustainable Development Goals (SDGs) as a Framework for Corporate Social Responsibility (CSR). *Sustainability*. 14(3). 1222. <https://doi.org/10.3390/su14031222>
- Gupta, J., Vegelin, C. (2016) Sustainable development goals and inclusive development. *Int Environ Agreements* 16, 433–448 <https://doi.org/10.1007/s10784-016-9323-z>
- Hariram, N., Mekha, K., Suganthan, V., Sudhakar, K. (2023) Sustainalism: An Integrated Socio-Economic-Environmental Model to Address Sustainable Development and Sustainability. *Sustainability*. 15(13), 10682. <https://doi.org/10.3390/su151310682>
- Holden, E., Linnerud, K., Banister, D., Schwanitz, V., Wierling, A. (2017). The Imperatives of Sustainable Development: Needs, Justice, Limits. <https://doi.org/10.4324/9780203022177>
- Hye, Q. M.A., & Wizarat, S. (2011). Impact of financial liberalization on agricultural growth: a case study of Pakistan. *China Agricultural Economic Review*, 3(2), 191-209.
- Kohrt, B., Mistry, A., Anand, N., et al. (2019) Health research in humanitarian crises: an urgent global imperative, *BMJ Global Health*. <https://doi.org/10.1136/bmjgh-2019-001870>
- Kolk, A. (2016). The social responsibility of international business: From ethics and the environment to CSR and sustainable development. *Journal of World Business*, 51(1), 23–34. <https://doi.org/10.1016/j.jwb.2015.08.010>
- Lazar, N., Chithra, K. (2022) Role of culture in sustainable development and sustainable built environment: a review. *Environ Dev Sustain*, 24, 5991–6031. <https://doi.org/10.1007/s10668-021-01691-8>
- Leal Filho, W., Salvia, A.L., Vasconcelos, C.R.P. et al.(2022) Barriers to institutional social sustainability. *Sustain Sci* 17, 2615–2630 <https://doi.org/10.1007/s11625-022-01204-0>
- Mensah, J., Ricart Casadevall, S. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences*, 5(1). <https://doi.org/10.1080/23311886.2019.1653531>

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- Mishra, M., Desul, S., Santos, C.A.G. et al. (2023) A bibliometric analysis of sustainable development goals (SDGs): a review of progress, challenges, and opportunities. *Environ Dev Sustain.* <https://doi.org/10.1007/s10668-023-03225-w>
- Nunes, A., Lee, K., O'Riordan, T. (2016). The importance of an integrating framework for achieving the Sustainable Development Goals: the example of health and well-being. *BMJ global health*, 1(3), e000068. <https://doi.org/10.1136/bmjgh-2016-000068>
- Pereira J., Rodrigues R., Veiga P. (2024) Entrepreneurship among Social Workers: Implications for the Sustainable Development Goals. *Sustainability*. 2024; 16(3), 996. <https://doi.org/10.3390/su16030996>
- Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Meyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M., & O'Connell, D. (2017). Integration: The key to implementing the sustainable development goals. *Sustainability Science*, 12(6), 911–919. <https://doi.org/10.1007/s11625-016-0383-3>
- Swain, R. B., & Yang-Wallentin, F. (2020). Achieving sustainable development goals: Predicaments and strategies. *International Journal of Sustainable Development & World Ecology*, 27(2), 96–106. <https://doi.org/10.1080/13504509.2019.1692316>
- Wojewódzka-Wiewiórska A, Kloczko-Gajewska A, Sulewski P. (2020) Between the Social and Economic Dimensions of Sustainability in Rural Areas—In Search of Farmers' Quality of Life. *Sustainability*. 12(1), 148. <https://doi.org/10.3390/su12010148>