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## SOCIO-ECONOMIC TRANSFORMATIONS: FIGHTING POVERTY AND ENSURING EQUAL OPPORTUNITIES IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

**Abstract.** This article analyzes the impact of the Russian-Ukrainian conflict on key socio-economic areas related to the Sustainable Development Goals (SDGs): SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 4 (Quality Education), SDG 5 (Gender Equality), and SDG 10 (Reduced Inequality). Based on various sources, the study examines economic decline, rising poverty levels, the food crisis, the destruction of educational infrastructure, changes in gender roles due to women's participation in the armed forces, and the deepening of inequality as a result of migration and job losses. The article also considers global consequences, including energy shocks and rising food prices, which pose a threat of malnutrition in many countries. The aim of this article is to develop theoretically grounded and practical strategies to mitigate these effects, such as introducing targeted household support, creating logistical solutions to restore food supply chains, implementing digital technologies in education to ensure continuous learning, and developing programs to enhance women's participation in economic life. The findings highlight the necessity of an integrated approach to restoring socio-economic stability during wartime and in the post-war period, emphasizing the importance of comprehensive measures to ensure equal opportunities and combat poverty.

**Keywords:** poverty, food security, education, gender equality, inequality, war, economic decline, migration.

**Introduction.** The impact of the Russian-Ukrainian conflict extends across economic, food security, social, and gender spheres, posing threats to the implementation of the Sustainable Development Goals (SDGs) adopted by the UN in 2015 as part of the "2030 Agenda". The SDGs examined in this section—SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 4 (Quality Education), SDG 5 (Gender Equality), and partially SDG 10 (Reduced Inequalities)—face significant pressure due to supply chain disruptions, rising energy and food prices, mass migration, and infrastructure destruction.

The economic consequences of the war include a sharp increase in energy prices (natural gas rose by 115%, oil by 41% in 2022 [2]), a 45% drop in Ukraine's GDP and the loss of 4.8 million jobs [25], which led to an increase in poverty from 2% to 55% by the end of 2023 [8]. Food security has deteriorated due to reduced grain and sunflower oil exports from Ukraine and Russia, which together accounted for 30% of the world's wheat supply and 80% of sunflower oil production [28]. This resulted in food price increases of 60–100% [1] and the risk of undernutrition for 61–107 million people worldwide [1]. Ukraine's education system suffered from the destruction of more than 700 institutions [16], while migration reached 5.7 million people [25], exacerbating demographic challenges. At the same time, military actions have driven gender transformations, including the participation of 7,000 women in the Armed Forces of Ukraine (AFU) [20], marking a new dimension of SDG 5.

This section aims to provide a comprehensive analysis of the impact of the military conflict on SDGs 1, 2, 4, 5, and 10, offering scientifically grounded strategies to mitigate consequences and restore sustainable development. The study is based on sources [1–26], covering economic, food security, socio-educational, and gender aspects, allowing for an examination of adaptive approaches to addressing challenges during wartime and post-war periods.

**Bibliographic review.** The economic consequences of the Russian-Ukrainian conflict are highlighted in studies by Mahler et al., Guan et al. [3], Steckel et al. [4], and Lampa R. [5], which focus on energy shocks and inequality. Mahler et al. [3] estimate that 75–95 million people fell below the poverty line due to rising energy prices, while Guan et al. [3] add that 78–141 million were affected by electricity costs. Steckel et al. [4] note a disparity in consumer spending (20% of expenses for the poor versus 13% for the wealthy [3]), and Lampa R. [5] highlights inflation that is 2–5% higher for low-income populations. Streimikiene D. [6] developed the concept of energy poverty, while Petruha N. et al. [7], Novikova I. et al. [24], Yaroshenko O. [23], and Tereshchenko O. [25] analyzed Ukraine's macroeconomic indicators, concluding a 45% GDP decline [26], a reduction of 4.8 million jobs, 5.7 million migrants, and social expenditures totaling UAH 457.9 billion [7].

Food security has been studied by Alexander et al. [1], who concluded that global food prices increased by 60–100%. Another research group [2] noted a 20–30% global crop loss. Mhlanga D. [9] and Abdullaieva A. [10] reported a 44% decline in wheat consumption in Africa, partly due to reduced exports from Russia (32%) and Ukraine (12%), while the price of sunflower oil in the EU surged to \$2,250 per ton. Melnyk T. et al. [12] noted a 41% decrease in Ukraine's agricultural exports, while Özçelik O. [13] emphasized that reduced agricultural exports drive up grain prices, which, in turn, correlate with fertilizer pricing. Kapelista et al. [14] and Yerlan et al. [15] stated that the 22% loss of Ukraine's agricultural land contributed to 67.3 million people suffering from malnutrition globally.

Social and educational aspects were analyzed by Fedorova A. [8], who reported significant financial allocations for internally displaced persons (IDPs) (EUR 1 billion for IDPs). Shevchenko V. V. [16] documented damage to educational facilities (nearly 700 institutions affected by hostilities). Herbst M. and Sitek M. [17] emphasized the success of educational strategies for IDPs, while Khrapatyi et al. [19] and Borodiyenko et al. [26] explored digitalization as a post-war recovery tool.

Gender issues are discussed by Kratochvíl P. and O'Sullivan M. [20], who examined the enlistment of nearly 7,000 women in the AFU. Lapènaite M. [21] extended the gender discussion, exploring women's motivation, while Munroe et al. [22] revealed the catastrophic labor market situation, where women account for over 68% of the workforce.

Despite a significant number of studies on the impact of the Russian-Ukrainian conflict on economic, food security, social, and gender aspects, substantial gaps in academic literature remain, limiting a full understanding of the consequences for the Sustainable Development Goals (SDGs).

Firstly, most existing studies—such as Mahler et al. [3], Guan et al., Alexander et al. [1], and Mhlanga D. [9]—focus on isolated aspects of the crisis (energy shocks, food security, or poverty) without integrating these factors into a unified systemic model that accounts for their interconnection in the wartime context. For example, economic losses [25] are rarely linked to food security [14] or social aspects [16], complicating the development of comprehensive recovery strategies.

Secondly, the impact of the war on gender equality (SDG 5) remains insufficiently explored. While Kratochvíl P. and O'Sullivan M. [20] and Lapènaite M. [21] analyze women's participation in the war and their motivation, there is a lack of systematic studies linking these changes to economic [22] and educational transformations (such as digitalization [19]) and assessing their long-term consequences for gender norms in the post-war period.

Thirdly, research on adaptation mechanisms at the local level is limited. For instance, Herbst M. and Sitek M. [17] detail education adaptation for refugees in Poland, but similar studies for Ukraine—aside from general digitalization proposals [45], [59]—remain fragmented, failing to consider regional differences and the needs of IDPs [16].

Fourthly, the impact of energy shocks on poverty [3] is insufficiently connected to food prices [1] and social inequality (SDG 10), requiring an interdisciplinary approach. The lack of a comprehensive analysis integrating these aspects into a single model for both wartime and post-war contexts represents a key research gap that this study seeks to address.

**Purpose of the article.** The motivation for this study stems from the critical need to comprehend the multifaceted impact of the Russia-Ukraine conflict on SDGs 1, 2, 4, 5, and partially 10 within the context of global and local challenges. The conflict has triggered economic shocks [26], increased poverty [8], a food crisis, hunger [15], the destruction of educational infrastructure [16], and gender transformations [20], requiring immediate adaptive solutions. Existing studies, such as those by Alexander et al. [1], Rabbi et al. [19], and

Kratochvíl P. & O'Sullivan M. [20], focus on isolated aspects but fail to offer a holistic approach that integrates economic, food, social, and gender consequences in wartime conditions. The motivation is further reinforced by practical significance: developing strategies for local governments, industrial enterprises, entrepreneurs, and research institutions can contribute to Ukraine's recovery and support global sustainable development.

The scientific novelty of this research lies in the development of a comprehensive approach to analyzing and addressing the consequences of armed conflict for the SDGs, integrating economic, food, socio-educational, and gender aspects into a unified model adapted to wartime conditions.

For SDG 1 (No Poverty): A conceptual approach has been developed that considers energy shocks [3] as a key driver of poverty, proposing subsidies, business support [23], and energy diversification [6]. This differs from traditional models [18] designed for peacetime conditions. For SDG 2 (Zero Hunger): A structural-logical approach systematizes the impact of military actions at the global [15], regional [10], and local levels [14], proposing logistical and agricultural solutions [11]. The novelty lies in regional differentiation, unlike generalized approaches [9]. For SDG 4 (Quality Education): A systemic approach combines inclusivity for internally displaced persons (IDPs) [8], digitalization [119], and specialization [26], ensuring the resilience of education during wartime and surpassing traditional reforms [16]. For SDG 5 (Gender Equality): A gender-oriented approach integrates education, employment [22], and rights, considering the wartime context, which is a novel contribution compared to peacetime research [21].

**Presentation of the main material.** The Russia-Ukraine conflict, which began in 2014 and escalated in 2022, has had a significant impact on Sustainable Development Goals (SDGs) 1, 2, 4, 5, and partially 10. Identifying gaps in existing research has highlighted the need for a comprehensive approach to analyzing and addressing this issue. The motivation for this study stems from the necessity to integrate economic, food, socio-educational, and gender aspects into the wartime context, which has been insufficiently covered in the academic literature [3], [1], [20]. Below, we present the results of the analysis, the proposed approaches, aspects for further research, and their practical significance.

The conflict has caused a severe economic downturn, deepening poverty on both global and local scales. Mahler et al. [3] note that in 2022, rising energy prices (gas – 115%, oil – 41%) pushed an additional 75–95 million people below the poverty line, while Guan et al. add another 78–141 million due to damage to energy infrastructure. In Ukraine, GDP shrank by 45% in 2022 [26], and small and medium-sized businesses lost \$83 billion due to infrastructure destruction and declining demand [23]. The poverty rate increased from 2% to 25% in 2022 and was projected to reach 55% in 2023 [8], with real wages falling by 27% [8] and unemployment rising to 35% [25]. Yaroshenko O. [23] reports that 1 million workers were laid off in the tourism, hospitality, and legal sectors, while Tereshchenko O. [25] highlights the loss of 4.8 million jobs, including 1.2 million due to migration. A group of authors [24] emphasizes the freezing of investment projects, port blockades, and export reductions, exacerbating financial vulnerability. Steckel et al. [4] and Lampa R. [5] demonstrate a significant increase in inequality: expenditures of the poorest households rose by 20% compared to 13% among the wealthy [3], and inflation for low-income groups was 2–5% higher [5], partly due to the lack of wage indexation. The Ukrainian government increased social spending by 33.3% to UAH 457.9 billion in 2023 [7], but resources remain insufficient and constrained by global instability [24]. Traditional poverty reduction models based on general social payments [18] have proven ineffective in wartime conditions due to energy dependence and logistical challenges. Therefore, a conceptual approach to overcoming the crisis caused by armed conflict has been proposed (Table 1), incorporating targeted subsidies, business support (e.g., the “5–7–9” program), and energy diversification [6]. To implement subsidies, the creation of an electronic income verification system is proposed to quickly identify households with incomes below the subsistence level.

Funding would be provided through the state budget and international aid from the EU or the World Bank, with payments made via direct transfers or utility discounts, accompanied by an information campaign to enhance accessibility.

Regarding business support, the expansion of the “5–7–9” program [23] includes the establishment of special funds for affected regions with donor funding, the organization of advisory centers providing free legal and financial assistance, and the simplification of procedures for obtaining loans and grants for businesses that create jobs for vulnerable groups [8].

Energy diversification [6] involves developing a national strategy for renewable energy sources, such as solar and wind power, with the identification of priority regions, the introduction of tax incentives for investors and subsidies for households installing solar panels, as well as the promotion of public-private partnerships through cooperation with the EBRD or IFC, launching pilot projects in affected communities to demonstrate efficiency. This approach is innovative as it takes into account the wartime context, offering adapted solutions that mitigate energy shocks and stimulate economic recovery, unlike traditional models [18], which do not consider extreme conditions.

Table 1 – Conceptual Approach to Overcoming the Crisis of Military Conflict

| Aspect                                  | Innovation / Content                                                                                                                                  | Comparison with Traditional Models                                                                            | Justification                                                                                                                                | Specific Proposals / Details                                                                                |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Theoretical Basis</b>                | Integration of theories of energy poverty, economic resilience, social inequality, and sustainable development                                        | Traditional models focus on a single theory (e.g., income or social benefits), ignoring the complexity of war | The impact of conflict on SDGs 1, 2, 4, 5, and 10 through energy shocks, economic downturns, and inequality requires an integrative approach | Based on works by Mahler et al., Guan et al., Yaroshenko O., Steckel et al., adapted to the wartime context |
| <b>Goal</b>                             | Development of a comprehensive approach to crisis management by integrating economic, social, and energy aspects                                      | Traditional models set general goals without considering war-specific challenges                              | The need to address multifaceted consequences of conflict (45% GDP decline, 35% unemployment, poverty increase to 55%)                       | Integration of solutions to achieve SDGs during wartime                                                     |
| <b>Objectives</b>                       | 1. Identifying poverty factors. 2. Assessing traditional models. 3. Proposing adapted solutions.. 4. Developing tools. 5. Justifying further research | Traditional objectives focus on peacetime, disregarding energy and logistical barriers                        | Crisis complexity (energy shocks, loss of 4.8 million jobs) demands new approaches                                                           | Data analysis, verification systems, diversification strategies                                             |
| <b>Context of Application</b>           | Analyzing and addressing problems in Ukraine and regions affected by secondary conflict impacts                                                       | Traditional models are applicable only in stable conditions, excluding wartime factors                        | Wartime specifics: infrastructure destruction, aid dependence, migration (1.2 million jobs lost)                                             | Application in economic recovery, energy security, and social stability                                     |
| <b>Tools</b>                            | Econometric analysis, statistical monitoring, electronic verification, SWOT analysis, scenario planning                                               | Traditional models rely on general statistical methods without wartime adaptation                             | GDP decline (-45%), unemployment (35%), expenses (457.9 billion UAH) require precise tools                                                   | Regression models, electronic systems, forecasting for subsidy and diversification assessment               |
| <b>Analysis Categories</b>              | Energy poverty, economic vulnerability, social inequality, gender aspect, institutional capacity                                                      | Traditional models focus on income and benefits, ignoring energy and gender aspects                           | Spending gap: poor (20%) vs. wealthy (13%), job loss for women in tourism, law                                                               | Assessment of energy costs, unemployment, inequality, and government spending efficiency                    |
| <b>Key Poverty Factor</b>               | Considering energy shocks as a primary poverty driver                                                                                                 | Traditional models focus on general social benefits and income, ignoring energy shocks                        | Energy price surge (gas +115%, oil +41%) led to 75–95 million people falling into poverty                                                    | Targeted energy subsidies for low-income households                                                         |
| <b>Difference from Other Approaches</b> | Adaptation to wartime through focus on energy poverty and economic recovery                                                                           | Traditional models do not account for extreme war conditions like energy shocks or logistical barriers        | Wartime context requires flexibility and a comprehensive approach                                                                            | Integration of subsidies, business support, and diversification to combat poverty                           |
| <b>Conceptual Approach</b>              | Adaptation to wartime conditions with a focus on energy poverty                                                                                       | Traditional models are designed for peacetime and do not consider extreme war conditions                      | War caused economic losses (45% GDP), increasing dependence on energy and deepening poverty                                                  | Electronic income verification system, direct payments or utility discounts                                 |
| <b>Proposal 1: Subsidies</b>            | Introduction of targeted subsidies to reduce financial burden from energy costs                                                                       | Traditional models provide general payments without focusing on energy expenses                               | Social spending increased by 33.3% to 457.9 billion UAH in 2023, but a targeted approach is needed                                           | Targeted subsidies, financing through the budget and international aid, awareness campaigns                 |
| <b>Proposal 2: Business Support</b>     | Business support as a tool to combat poverty during war                                                                                               | Traditional models do not emphasize business support                                                          | Business losses – \$83 billion, support could reduce unemployment                                                                            | Expansion of the “5–7–9” program, special funds for affected regions, grants for job creation               |
| <b>Proposal 3: Diversification</b>      | Diversification of energy sources to reduce dependence on a single supplier                                                                           | Traditional models do not consider diversification as part of poverty reduction                               | Reducing gas import dependence through renewables enhances resilience                                                                        | National renewable energy strategy, tax incentives, pilot projects in communities                           |

Source: compiled by the authors

The conflict has undermined global food security by reducing supplies from Ukraine and Russia, which together accounted for 30% of the world's wheat, 15% of corn, and 80% of sunflower oil [12]. Alexander et al. [1] predicted that food prices would rise by 60–100% in 2023, threatening 61–107 million people with malnutrition and causing an additional 1.01 million deaths annually. Nasir M. A. et al. [2] noted that 20–30% of Ukraine's winter crops (1.9 million hectares) remained unharvested, leading to price increases: wheat by 24.53%, corn by 14.66%, and soybeans by 8.91%. Yerlan et al. [15] reported that Ukrainian exports fell by 33–50%, and Russian exports by 10–30%, which accounts for 12% of global caloric intake. The blockade of Black Sea ports [12] and the loss of 22% of Ukraine's sown areas [14] have exacerbated crises in import-dependent countries such as Armenia, Georgia, and Azerbaijan [15]. In the EU, sunflower oil prices rose from \$1,700 to \$2,250 per ton, while grain prices increased to \$150 per ton [10; 11]; in Africa, prices surged by 50% in Nigeria [9]. Özçelik O. [13] modeled that a 1% increase in fertilizer prices raises grain prices by 2.25% and sugar prices by 2.40%. Mhlanga D. [9] emphasized labor and fertilizer shortages, which left one-third of Ukraine's farmland uncultivated.

Proposed solutions include logistical and agricultural strategies with regional differentiation [11]. To restore grain exports via the Black Sea, international agreements must be reached involving the UN, Russia, Ukraine, and other stakeholders to establish "grain corridors," similar to those in 2022 [11]. A crucial step is forming a coalition involving Turkey, the EU, the US, and Russia to ensure maritime security, developing alternative export routes through railways and Danube ports with investments in relevant infrastructure, and creating international insurance mechanisms for ships to reduce risks.

Farmer support should include a "Farmer's Package" program with subsidies for seeds and fertilizers, preferential loans for equipment, and assistance from FAO and other international partners, including potential involvement from Russian agricultural funds [11]. Additionally, it is necessary to establish regional storage facilities and conduct training on modern agricultural technologies to improve yields.

Regional differentiation involves creating food distribution hubs in countries at high risk of hunger in cooperation with the WFP [11], signing bilateral agreements with fixed prices that balance the interests of producers and consumers, and implementing a monitoring system for rapid crisis response. This approach will ensure stable food production and supply even during conflict, taking into account the economic and security concerns of all stakeholders.

In the context of Sustainable Development Goal 4 (SDG 4) – "Quality Education" – during the Russian-Ukrainian conflict, which began in 2014 and escalated in 2022, a systematic approach to restoring the education system has become particularly significant.

This approach integrates three key components – inclusivity for internally displaced persons (IDPs), digitalization, and specialization – to ensure the resilience of education during wartime, surpassing traditional reforms that focus on gradual changes in peacetime [16; 26; 19].

The systematic approach is based on an assessment of the research subject – the impact of war on the education system – and the object – ways to ensure access to and quality of education through adaptive mechanisms, considering the realities of the ongoing conflict. The scope of analysis covers the destruction of educational infrastructure, demographic shifts, and economic challenges caused by the war. Specifically, according to Shevchenko V. V. [16], over 700 educational institutions have been damaged, the number of students has decreased from 2.05 million to 1.58 million, and the number of foreign students has dropped from 70,000 to 64,000. Tereshchenko O. [25] notes that the departure of 40% of young people from Ukraine poses long-term threats to the country's labor potential.

The subject of the research focuses on the development of an integrated system that includes inclusivity for IDPs [8], digitalization as a tool for the continuity of learning [19], and specialization of programs for training personnel for post-war reconstruction [26]. This approach is innovative, as traditional models, described in Shevchenko V. V. [16], do not take into account the extreme conditions of war, focusing instead on gradual reforms, whereas modern realities require rapid adaptation.

Structurally, the systemic approach breaks the problem down into three interrelated elements. The first element, inclusivity, aims to ensure access to education for 1.5 million IDPs, which requires funding of 1 billion euros [8]. The experience of Poland, where a law introduced on March 12, 2022, established preparatory classes and up to 6 hours of Polish language instruction per week for Ukrainian students, demonstrates the effectiveness of such measures [17]. The second element, digitalization, addresses the need for continuity in learning in conditions of infrastructure destruction, when physical access to institutions is complicated [19]. The third element, specialization, involves adapting educational programs to the needs of reconstruction, particularly in engineering and information technology, which are critical for economic recovery [26].

Table 2 – Structural-Logical Approach to Ensuring SDG 2 (“Zero Hunger”) in the Context of War

| Aspect                         | Innovation / Content                                                                                                                  | Comparison with Traditional Models                                                                        | Justification                                                                                                                                          | Specific Proposals / Details                                                                                |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Object and Subject of Analysis | Object: Impact of war on food security<br>Subject: Supply disruptions and rising food prices                                          | Traditional models analyze food security in peacetime, ignoring wartime factors                           | Ukraine and Russia supplied 30% of global wheat, 15% of corn, and 80% of sunflower oil; the war disrupted 12% of global calorie supply                 | Analysis of global (193 million people in crisis), regional (EU, Africa), and local (Ukraine) impacts       |
| Structural Elements            | 1. Global level: Export reduction<br>2. Regional level: Shortages in the EU and Africa<br>3. Local level: Loss of farmland in Ukraine | Traditional models do not differentiate the problem by levels and offer universal solutions               | Globally: 61–107 million people at risk of malnutrition<br>Regionally: Oil prices at \$2,250/ton in the EU<br>Locally: 22% of farmland lost in Ukraine | Systematization into three levels for targeted solutions                                                    |
| Logical Connections            | Port blockade → export reduction → price increase → malnutrition                                                                      | Traditional models do not consider wartime logistical barriers                                            | Black Sea blockade reduced exports by 33–50%, wheat prices rose by 24.53%, threatening 1.01 million deaths                                             | Establishing causal links between logistics, production, and prices                                         |
| Goals and Criteria             | Goal: Ensuring food security<br>Criteria: Lower prices, restore exports, reduce malnutrition                                          | Traditional goals focus on long-term development rather than crisis response                              | Food prices rose by 60–100% in 2023, threatening hunger; at least 50% of exports need restoration                                                      | 1. Reduce grain prices to \$150/ton in the EU<br>2. Restore 30% of global wheat exports                     |
| Methods and Tools              | Data analysis (exports, prices), modeling (fertilizer impact), monitoring (WFP), infrastructure investment                            | Traditional methods are not adapted to wartime conditions and lack a focus on logistics or rapid response | Labor and fertilizer shortages (1% increase in fertilizer prices = 2.25% increase in grain prices) require precise analysis                            | Econometric analysis, monitoring system, investment in railways and Danube ports                            |
| Results and Proposals          | Logistic and farming solutions with regional differentiation                                                                          | Traditional models offer general subsidies without considering war conditions                             | Loss of 1.9 million hectares of winter crops and 33–50% of exports requires a comprehensive approach                                                   | Grain corridors, “Farmer’s Package,” regional hubs                                                          |
| Proposal 1: Logistic Solutions | Restoring exports via the Black Sea and alternative routes                                                                            | Traditional models do not account for wartime logistical barriers                                         | Port blockades disrupted exports, threatening countries (Egypt, Turkey)                                                                                | International agreements (UN), coalition (Turkey, EU, USA, Russia), investment in railways and Danube ports |
| Proposal 2: Farming Solutions  | Supporting farmers through subsidies for seeds, fertilizers, and equipment                                                            | Traditional approaches are not adapted to wartime, where rapid aid is needed                              | Loss of 22% of arable land requires urgent agricultural recovery                                                                                       | “Farmer’s Package” program, regional storage facilities, training in agrotechnologies                       |
| Regional Differentiation       | Adapting solutions to the needs of different regions (Africa, EU, Ukraine)                                                            | Traditional models apply the same measures for all regions                                                | Africa: Grain shortages<br>EU: Oil shortages<br>Ukraine: Production recovery                                                                           | Regional hubs (WFP), bilateral agreements with fixed prices, monitoring system                              |

Source: compiled by the authors

The logical connections between these elements are traced through a cause-and-effect sequence: the destruction of 700 institutions [16] and the mass migration of young people [25] create the need for digital platforms to ensure continuity of education [19], while the demand for personnel for reconstruction justifies the specialization of educational programs [26]. Inclusivity serves as a basic component that guarantees access to education for IDPs, digital education ensures its continuity, and specialization increases the relevance of training personnel for modern challenges. This integration surpasses traditional reforms, which do not take into account the wartime realities and do not offer rapid systemic solutions [16].

The goal of the systemic approach is to ensure the sustainability of education in wartime by creating an adaptive system that responds to contemporary challenges. The evaluation criteria include ensuring

access to education for 80% of IDPs, achieving 50% coverage by digital platforms, and training at least 10,000 specialists in key sectors for reconstruction. These indicators reflect the need for rapid response to the crisis, unlike traditional goals focused on long-term development. To implement the approach, methods such as needs analysis for IDPs [8], the creation of digital platforms [419], the development of specialized programs [26], and attracting grant funding are used. Tools include analytical studies [8], funds for the purchase of equipment [19], and working groups involving universities, business, and government [26].

Thus, the systemic approach to SDG 4 in the context of war is based on scientific data analysis, clear structuring of components, and logical justification of proposals. It surpasses traditional reforms due to flexibility, rapid response, and focus on current needs, as confirmed by the works of Shevchenko V. V. [16], Fedorova A. [8], Khrapaty et al. [19], and Borodiyenko et al. [26]. The implementation of this approach will contribute not only to preserving the quality of education but also to its transformation in line with contemporary challenges.

For SDG 5 (Gender Equality), war requires the integration of education, labor, and rights in the wartime context: Gender equality educational programs will become mandatory, funded by the state and donors, labor support should include the “Women in Business” program with grants and IT retraining courses [22], and for rights, a network of centers for victims of violence with information campaigns [20], which is new compared to peace-time studies [21]. This approach is innovative, adapting gender equality to the conditions of war. Overall, these solutions for SDGs 1, 2, 4, and 5 are scientifically grounded, offering adapted strategies for sustainable development in conflict conditions with clear implementation mechanisms that ensure their effectiveness and practicality.

**Conclusions.** The Russo-Ukrainian conflict has significantly impacted Sustainable Development Goals (SDGs) 1, 2, 4, 5, and partially 10, creating economic, food security, socio-educational, and gender challenges, but also opportunities for adaptive solutions. Based on systemic analysis and other methods using sources [1–59], it has been established that the war has deepened poverty through energy shocks and job losses, disrupted food security due to a reduction in exports, destroyed education, and exacerbated gender inequality. A conceptual approach has been developed for SDG 1, with subsidies and energy diversification, a structural-logical approach for SDG 2 with the restoration of logistics, a systemic approach for SDG 4 with digitalization, and a gender-oriented approach for SDG 5 with support for women. The novelty lies in the integration of these aspects in the wartime context, addressing gaps in previous research. The wartime period requires urgent subsidies, grain corridors, and online education, while the post-war period calls for investments in energy, agricultural infrastructure, and workforce retraining. Further research may cover green technologies, local food systems, online platforms, and gender norms, which would be of interest to authorities (policy), industry (energy sector), entrepreneurs (agribusiness), and scientists (sustainable development), providing a foundation for recovery.

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## СОЦІАЛЬНО-ЕКОНОМІЧНІ ПЕРЕТВОРЕННЯ: БОРОТЬБА З БІДНІСТЮ ТА ЗАБЕЗПЕЧЕННЯ РІВНИХ МОЖЛИВОСТЕЙ В УМОВАХ СТАЛОГО РОЗВИТКУ

**Abstract.** У цій статті аналізується вплив російсько-українського конфлікту на ключові соціально-економічні сфери, пов'язані з Цілями сталого розвитку (ЦСР): ЦСР 1 (Подолання бідності), ЦСР 2 (Викорінення голоду), ЦСР 4 (Якісна освіта), ЦСР 5 (Гендерна рівність) та ЦСР 10 (Зменшення нерівності). На основі різних джерел дослідження розглядає економічний спад, зростання рівня бідності, продовольчу кризу, руйнування освітньої інфраструктури, зміни гендерних ролей через участь жінок у збройних силах, а також поглиблення нерівності внаслідок міграції та втрати робочих місць. У статті також враховуються глобальні наслідки, зокрема енергетичні шоки та зростання цін на продукти харчування, що створюють загрозу недоїдання у багатьох країнах. Метою цієї статті є розробка теоретично обґрунтованих і практичних стратегій для пом'якшення цих наслідків, таких як запровадження цільової підтримки домогосподарств, створення логістичних рішень для відновлення ланцюгів постачання продовольства, впровадження цифрових технологій в освіту для забезпечення безперервного навчання та розробка програм для посилення участі жінок в економічному житті. Результати підкреслюють необхідність комплексного підходу до відновлення соціально-економічної стабільності під час війни та у повоєнний період, наголошуючи на важливості всебічних заходів для забезпечення рівних можливостей і боротьби з бідністю.

**Keywords:** бідність, продовольча безпека, освіта, гендерна рівність, нерівність, війна, економічний спад, міграція.