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Released on J-STAGE: October 15, 2023

[DOI https://doi.org/10.14246/irspsd.11.4_113](https://doi.org/10.14246/irspsd.11.4_113)

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Released on J-STAGE: October 15, 2023

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Released on J-STAGE: October 15, 2023

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Released on J-STAGE: October 15, 2023

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Published: October 15, 2023

Released on J-STAGE: October 15, 2023

[DOI https://doi.org/10.14246/irspsd.11.4_224](https://doi.org/10.14246/irspsd.11.4_224)

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Published: October 15, 2023

Released on J-STAGE: October 15, 2023

[DOI https://doi.org/10.14246/irspsd.11.4_240](https://doi.org/10.14246/irspsd.11.4_240)

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Rebuilding of Ukraine After War: *Special Restoration Regimes and Stimulation of Sustainable Development of Territories*

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Received: Feb 16, 2023 ; Revised: Aug 3, 2023 ; Accepted: Aug 21, 2023

Keywords: Territory restoration, Sustainable development, Infrastructure, Investments,
International technical assistance

Abstract: Military actions on the territory of Ukraine have had massive negative consequences. To address these issues, the efforts of state and local authorities, scientists, and businesses have been united. In connection with the adoption of Law of Ukraine No. 5323 dated July 9, 2022, titled "On Amendments to Certain Legislative Acts of Ukraine on the Fundamentals of the State Regional Policy and the Policy of Restoration of Regions and Territories," Ukrainian scientists were tasked with finding mechanisms for the effective restoration of territories of various functional types. The article presents the results of theoretical and empirical studies, which led to the conclusion that it is realistic to achieve effective restoration of Ukraine's territories after the current war by introducing special economic and investment regimes that also serve as incentives for sustainable development. A theoretical review of the instruments for financing Ukraine's restoration allowed us to highlight their differences. The European and Japanese experience of recovery after military conflicts has enabled us to propose acceptable approaches to rebuilding Ukraine. The survey helped determine the commencement dates and priorities for the restoration of these territories. Using this data, a concept of sustainable development for the territories was formulated, represented by a cognitive model of sustainable development post-war. Additionally, a list of benefits provided to investors on priority development areas, along with a scheme for reconciling interests between the state, investors, and territorial communities, has been established.

1. INTRODUCTION

During 2022-2023, the issue of post-war recovery in Ukraine became a priority on global discussion platforms. According to the United Nations Conference on Trade and Development's (UNCTAD) Secretary-General Rebecca Grunspan, "The war in Ukraine has resulted in great human suffering and shaken the world economy. All these shocks threaten the successes achieved in the recovery after the COVID-19 pandemic and block the way to



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sustainable development" ([UNCTAD, 2022](#)). The UNCTAD analytical report, titled "On the Impact of the War in Ukraine on World Trade," highlights the sharp deterioration of prospects for the global economy. The main factors identified are rising prices for food, fuel, and fertilisers, increased financial volatility, abandonment of investment in sustainable development, complex reconfigurations of global supply chains, and increasing trade costs. All these reasons are not exhaustive and are generated by Russia's war with Ukraine, as these countries are global players in the agro-food markets, accounting for 53% of the world's trade in oil and grain, and 27% of wheat ([UNCTAD, 2022](#)).

In the UN Sustainable Development Group Report No. 2, titled "The Global Impact of the War in Ukraine on the Food, Energy and Financial Systems," it is emphasised that the global economy is in an unstable state. The war and COVID-19 have caused a decrease in the income levels of the population. For example, 60% of workers have lower real incomes than in 2019; 60% of the poorest countries are in a debt crisis or are prone to a high risk of its occurrence; developing countries lack \$1.2 trillion per year to fill gaps in social protection, and \$4.3 trillion per year are needed to achieve the Sustainable Development Goals (SDGs), which is more than in previous years ([UNSD, 2022](#)).

The armed conflict between Russia and Ukraine, in terms of armament and mobilisation, has no equivalents in modern history. This is stated in an interview with the UN Secretary-General Antonio Guterres: "Most of the crises I have witnessed are the crises of poor developing countries. Most of them are internal crises, even if there was a foreign intervention. They were civil wars or terrorist activities within the country. Now we have a war between the superpower Russia and the developed European country - Ukraine" ([UN news, 2022](#)). At the same time, Guterres notes the fastest movement of refugees in recent times, both within the country and beyond its borders, which can lead to even more terrible humanitarian consequences ([UN news, 2022](#)).

According to the authors of this article, the current conditions of Ukrainian societal development can indeed be characterised as the most complex in modern Ukrainian history. Damage caused to the country's infrastructure and, in some cases, its complete destruction have catastrophic consequences for the country, regions, and each territorial community. This applies not only to regions where military operations are actively conducted but also to those that are subjected to rocket attacks. Critical infrastructure objects throughout Ukraine are the first to be attacked. The destruction of the energy sector due to the war has led to a critical shortage of electricity and has caused widespread disconnections from the energy supply system for residents of almost every Ukrainian city. Given that critical infrastructure objects are the most important systems for providing life support to the population and are crucial for the economy, national security, and defence, their disruption negatively affects the national interests of the state.

Despite the complexity and uncertainty of the situation in the country, it is believed that the Sustainable Development Goals (SDGs) should become the benchmarks for ensuring the most effective country rebuilding and creating a safe and comfortable environment for the livelihood of its citizens ([UNDP, 2022](#)). Specifically, Mariam Simonova, the coordinator of the SDG BRIDGE international technical assistance project, within the framework of the joint program "Supporting Strategic Planning and Financing of Sustainable Development at National and Regional Levels in Ukraine" in cooperation with the SDG Office, created with financial support from the Governments of Sweden and Switzerland, emphasizes that by including Ukraine's SDG

obligations in the recovery, the model will improve its implementation and monitoring, "simultaneously synchronizing local reforms with the priorities of Ukraine's development partners." Representatives of UNDP, the Secretariat of the Cabinet of Ministers of Ukraine, the Office of the Centre for Social Development, and the scientific community have started work on the development of the Recovery Plan of Ukraine, taking into account the UN Agenda in the field of sustainable development. As of September 2022, five priorities for the emergency recovery of Ukraine were outlined, such as energy, housing, demining, critical social infrastructure, and assistance to private businesses, and in January 2023, the World Bank confirmed the need for funding for these measures for \$600–700 billion ([UNDP, 2022](#)).

Given the statements presented, the results of the research are relevant, timely, and have scientific and practical value in the global perspective of the country's reconstruction based on implementing special restoration and stimulation modes for sustainable territorial development.

2. METHODOLOGY

2.1 Scientific backlog

The scientific results presented for consideration are a continuation of the research project 0122U002121, titled "Development of TPR in the conditions of armed conflict: assessment of results and efficiency," which commenced in June 2022. Within this research project, a series of theoretical-methodological positions have already been formulated by scientists from the Institute of Economic and Legal Research of the National Academy of Sciences of Ukraine (hereinafter NASU), based on the combination of scientific knowledge methods and general scientific and specialized approaches. The authors of this article have previously conducted research on donor assistance ([Boichenko and Vasilchuk, 2017](#)), assessment of infrastructure losses in Donbas ([Vasylchuk, 2015](#)), sustainable development ([Boichenko, Martynovych et al., 2021](#)), post-war reconstruction of territories ([Martynovych, 2022](#)), and a synthesis of foreign experiences regarding mechanisms and tools for effective territory restoration after armed conflicts, which is partially presented in this article.

2.2 Research stages

This study employs a comprehensive and systematic approach to investigating problems, incorporating both theoretical and empirical methods of scientific knowledge. Qualitative literature meta-analysis is used as a method to identify key theoretical principles related to special regimes and instruments of voluntary financing for post-war reconstruction of territories. In order to establish the distinctive features of various types of financial assistance and, based on this, to make decisions regarding the most effective methods for sustainable development, methods such as analysis, synthesis, induction, deduction, and analogy are used. The step-by-step research procedure is illustrated in *Figure 1*.

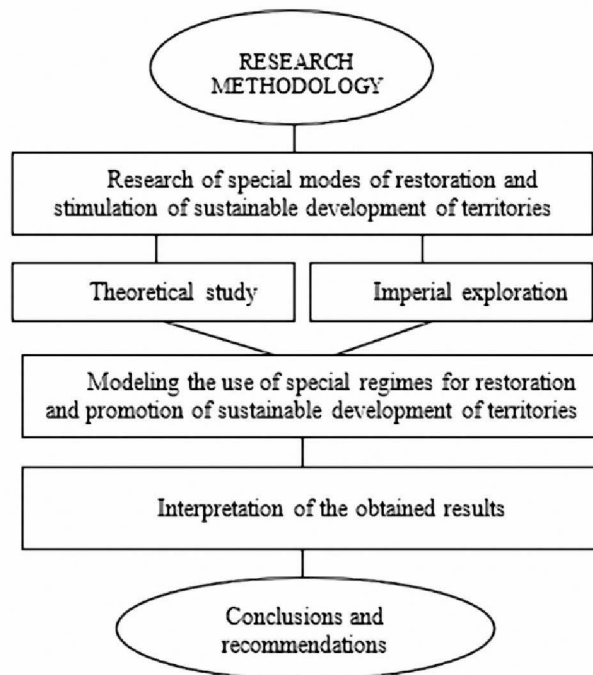


Figure 1. Research methodology flowchart

The theoretical review drew upon publications from both domestic and foreign authors. Specifically, it relied on the research of Medved, Kim and Ursic ([Medved, Kim et al., 2020](#)), which, among other things, includes a comparative analysis of two large-scale sustainable urban development projects in Northeast Asia (the eco-cities Sino German Ecopark in Qingdao, China and Pangyo in Seongnam, Korea) and two in Europe (the resilient areas of Wauban in Freiburg, Germany and Hammarby Sjöstad in Stockholm, Sweden). Key insights were derived from this research regarding the feasibility of using voluntary funding for the recovery of Ukrainian territories. This work also affirms the value of planning the restoration of territories by dividing them into functional zones. From the work of [Lian \(2018\)](#), we adopted the "integration of several plans" planning approach. As the war continues in Ukraine, many regions that have not yet experienced combat may find themselves needing to evacuate their populations. In this regard, the conceptual provisions of an evacuation simulator accounting for mutual assistance during various earthquakes, as reflected in the article by [Karashima and Ohgai \(2018\)](#), are of interest.

The theoretical review was grounded in the regulatory and legal acts of Ukraine and the European Union, official reports from international organizations, including the UNCTAD study: "The war in Ukraine will negatively affect the entire global economy," Report No. 2 from the UN Group for Sustainable Development, "The Global Impact of the War in Ukraine on the Food, Energy, and Financial System," as well as input from state and regional authorities. Additionally, research by domestic and foreign scientists was consulted, specifically focusing on the standardization of organizational support for the investment attractiveness of Ukraine's regions and special regimes for the restoration and stimulation of sustainable development in these territories. In particular, key scientific-methodical and practical conclusions were based on the Law of Ukraine "On Investment Activity", the Law of Ukraine "On the Regime of Foreign Investment", the Law of Ukraine "On Humanitarian Aid", the 3rd Law of Ukraine "On Amendments to Some

Legislative Acts of Ukraine on the Basics of the State regional policy and the policy of restoration of regions and territories", and the resolution of the Cabinet Ministers of Ukraine (CMU) "On the creation of a unified system of attraction, use, and monitoring of international technical assistance". Analytical materials from the Rating Sociological Group and the Transatlantic Dialogue Center were also utilised.

To make well-balanced decisions regarding the timing of recovery initiation, the application of specific types of special economic regimes, and the promotion of sustainable development, an empirical method was employed. This empirical study was conducted by interviewing Ukrainian residents living in territories controlled by the Ukrainian government. The data collection method was computer-assisted telephone interviewing (CATI) based on a random sample of mobile phone numbers. The research's representativeness error, with a 95% confidence interval was not more than 3.1%. The sample size was 1000 respondents from different age groups.

The theoretical and empirical results obtained in the study became the basis for creating a cognitive model of sustainable territorial development. This model was developed using the scientific method of modelling, allowing for the visualisation of several scenarios for the post-war restoration of territories. Data processing was carried out using the Microsoft Office suite, including Microsoft Excel for spreadsheet tasks and Microsoft Word for text editing. Additionally, the graphic editor Adobe Photoshop was used.

3. RESULTS

3.1 Theoretical overview

3.1.1 Special regimes and instruments of voluntary financing for the reconstruction of Ukraine

While Ukraine is in a state of war, Western partners provide substantial military and financial support. However, peace will eventually come, and unconditional funding will gradually decrease. Consequently, the primary task for Ukrainian society today is to make a positive impression on Western partners who may become future investors.

Investments are of utmost importance for growth and sustainable development. They contribute to the expansion of the economy's production potential, the creation of jobs, and an increase in income. Under suitable conditions, foreign direct investments (FDI) offer additional benefits by bringing new knowledge and more sustainable business methods to recipient countries, ultimately improving the standard of living of citizens and meeting their basic needs.

It should be noted that summarising the scientific viewpoints of different authors regarding the interpretation of the category "investment" allowed us to conclude that there are several approaches. In this study, investments are interpreted as a set of benefits and values invested in activities to obtain certain effects in the future; thus, investments are considered in a broad sense. Representatives of this school include J. Keynes, K. McKenzie (1936-1939), J. Dolan, K. Campbell (1947), and later American scientists E. Casta, M. Becker, and A. Nelson. International technical assistance is considered by the authors as resources provided by donors on a gratuitous basis following Ukraine's international agreements for the implementation of programs and

projects of international technical assistance to carry out reforms and implement programs of socio-economic development in Ukraine ([CMU, 2017](#)). The structure and purpose of international technical and humanitarian assistance are presented in *Figure 2*.

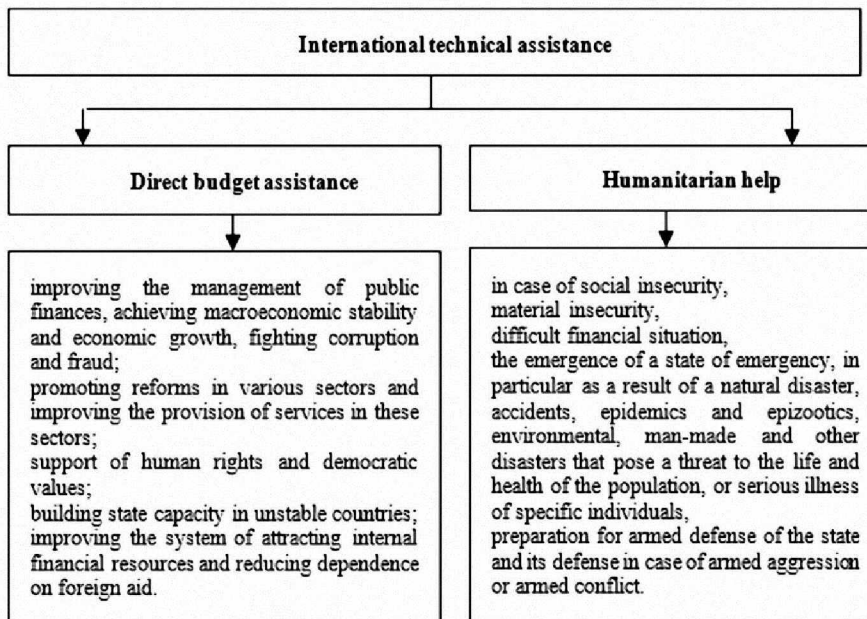


Figure 2. Structure and purpose of international technical assistance. Source: compiled by the authors based on data ([CMU, 2017](#)).

Direct budgetary support is implemented through the conclusion of an international financial agreement to support structural reforms in the country. This agreement provides for the transfer of funds on a gratuitous and non-refundable basis to the country's state budget after the agreed conditions for the allocation of funds are met ([Government portal, 2023](#)). The coordinator of the third-party monitoring (TPM) in Ukraine is the Ministry of Economic Development, Trade, and Agriculture of Ukraine, as well as the Ministry of Development of Communities and Territories of Ukraine (sectoral budget support from the EU) ([MDCTU, 2023](#)).

In contrast to direct budgetary support, humanitarian assistance provides targeted, gratuitous assistance in the form of monetary or in-kind aid, such as non-repayable financial aid, voluntary donations, assistance through the completion of work, and the provision of services provided by foreign and domestic donors for humanitarian reasons to recipients of humanitarian assistance in Ukraine or abroad. Humanitarian assistance is a form of charity that is directed by the circumstances and needs of the population. It is provided by domestic and international organizations, governments, and non-governmental organizations. Humanitarian aid (HA) is a type of charity directed following circumstances, objective needs, and the consent of its recipients, and it is subject to compliance with the requirements of Article 3 of the Law of Ukraine "On Charitable Activities and Charitable Organizations" ([VRU, 2023](#)). The Ministry of Social Policy acts as the coordinator of HA in Ukraine.

It should be noted that from January 26, 2023, the coordination platform of donors for the restoration of Ukraine began to function, the purpose of which is to connect international donors with international financial organizations so that aid to Ukraine is provided "coherently, transparently and

following the principles of accountability" ([European Commission, 2023](#)). The platform unites the G7 countries and key international organizations, including the IMF, World Bank, EBRD, and EIB. However, this is not an exhaustive list of countries, as the platform is open to others who wish to systematically help Ukraine.

Crowdfunding is a relatively new financing tool in Ukraine, but it has been quite popular in the USA, Japan, Hong Kong, Singapore, and some European countries since the 2000s. The widespread use of crowdfunding is due to several advantages, both for potential investors and beneficiaries. It allows you to raise funds without the involvement of banks, venture funds, and stock exchanges, making the process of obtaining funds easier and more democratic. The most popular areas for crowdfunding worldwide include social projects, gadgets and inventions, cinema, video and music, information technologies, small businesses, fashion, and the cultural and creative sectors of the economy, the development of which is one of the conditions for ensuring the sustainable development of society ([Rich, 2015](#)).

There are several popular platforms where you can present a project and obtain financing, including Kickstarter (founded in 2009), Indiegogo (founded in 2007-2008), and Crowdfunder. Unfortunately, independent registration on these platforms is not available to Ukrainian citizens. Such an opportunity is available in the USA, Great Britain, Canada, Australia, New Zealand, the Netherlands, Denmark, Ireland, Norway, Sweden, Germany, France, Spain, Italy, Austria, Belgium, Switzerland, Luxembourg, Hong Kong, Singapore, Mexico, Japan, Poland, Greece, and Slovenia ([PaySpace Magazine Crowdfunding, 2020](#)).

Despite this, three domestic crowdfunding platforms operate in Ukraine: "Spilnokost", "Na starte" (with no recent updates since 2019), and "Cube" (associated with PrivatBank). The first two platforms specialise in creative (film financing) and social (educational programs for children) initiatives. On the Cube platform, business projects, production scaling, hiring additional employees, and startups are more common. Investor returns from the "Cube" project are varied: investing UAH 1,000 yields UAH 230 per hour, and for 20 thousand UAH, you can expect 4600 hryvnias in 12 months. Additionally, all deposits on this site are insured ([PaySpace Magazine Crowdfunding, 2020](#)).

An example of public financing using crowdfunding is the "People Place" project implemented in Lviv. In two months, 243 benefactors helped collect 174,000 UAH. We consider it expedient to use this type of financing in addition to international technical assistance, state assistance, and direct investments for the restoration of infrastructure facilities or their components.

3.1.2 Experience in the recovery of countries after a military conflict

For this research, the authors summarised experiences of restoring various countries after military conflicts. The European experience allows us to assert that the aid allocated by the USA in the form of free financing allowed funds to accumulate and be redistributed in the form of investments in reconstruction, as France and Germany did. Thus, in Germany during the period from 1950 to 1957, the volume of investments increased by 81% ([Zheleznyak, 2022](#)). The bulk of state budget expenditures were directed towards business development. To stimulate exports, the German government provided tax incentives, and for large contracts, financing was offered. Individuals whose incomes were below 2,400 marks per hour paid an 18% tax, and the tax rate on incomes above 250,000 marks per hour increased to 95%. In addition, taxes on income from securities were lowered.

As a result, in 1962, the level of industrial production in West Germany exceeded pre-war indicators threefold. The Federal Republic of Germany held second place in terms of gold and currency reserves and third place after the USA and England in the volume of industrial production. The average annual rates of economic growth in 1950 - 1966 amounted to about 9.2% ([Zheleznyak, 2022](#)).

The experience of Japan, which managed to build a planned economy "in Japanese style," is unique. It is obvious that the "economic miracle" of Japan is a combination of many different factors based on national and cultural traditions and the way of life of its inhabitants, making it a special, unique experience. At the same time, the experience of changing the priority of industries can be valuable and applicable to Ukraine. Thus, after the end of the war, the focus of attention on the Japanese economy shifted from metallurgy, energy, and shipbuilding (1950) to electronics and automotive (1960). During Japan's recovery period, the average annual GDP growth per capita was 7.1%. Twelve years later, in 1969, Japan took second place in the world in terms of GDP and industrial production, and the economy became a textbook example of successful post-war recovery.

Studying the issues of restoring the territories of Ukraine in the context of their sustainable development, the experience of restoring post-war Japan is unique, according to the authors. It should be noted that Japan is a country that at one time not only lost the war but also underwent the destruction of its social and economic infrastructure. It can be said that it was practically destroyed. Thus, the level of post-war industrial production was only 20% of the indicators of 1939, and 70% of all industrial capacities of the country were destroyed. The country lost all the captured territories, on which the supply of raw materials, fuel, and food depended ([Zheleznyak, 2022](#)).

A similar situation is observed in Ukraine. As of September 5, 2022, the total amount of direct damage to infrastructure reached \$114.5 billion. Compared to the latest estimates, the damage caused due to the destruction and damage to civilian and military infrastructure increased by \$1 billion. The largest share in the total amount of losses belongs to housing stock and infrastructure - 72%. In total, the losses of these two areas are estimated by project experts at \$82.9 billion ([The World Bank, 2022](#)).

3.2 Results of the poll "Reconstruction of Ukraine and international assistance"

The key findings and conceptual positions of this research were based on a survey titled "Recovery of Ukraine and International Assistance," which was conducted on November 20-21, 2022, among Ukrainians living in Ukraine. The survey excluded the temporarily occupied territories of Crimea and Donbas and areas where Ukrainian mobile communication was not available at the time of the survey. As a result, it was established that the restoration of the state should start as soon as possible (44%), while 52% of the respondents said that it is necessary to wait for the end of the war. The proportion of those who advocate for the immediate restoration of the state is higher in the eastern regions of Ukraine (see *Figure 3*).

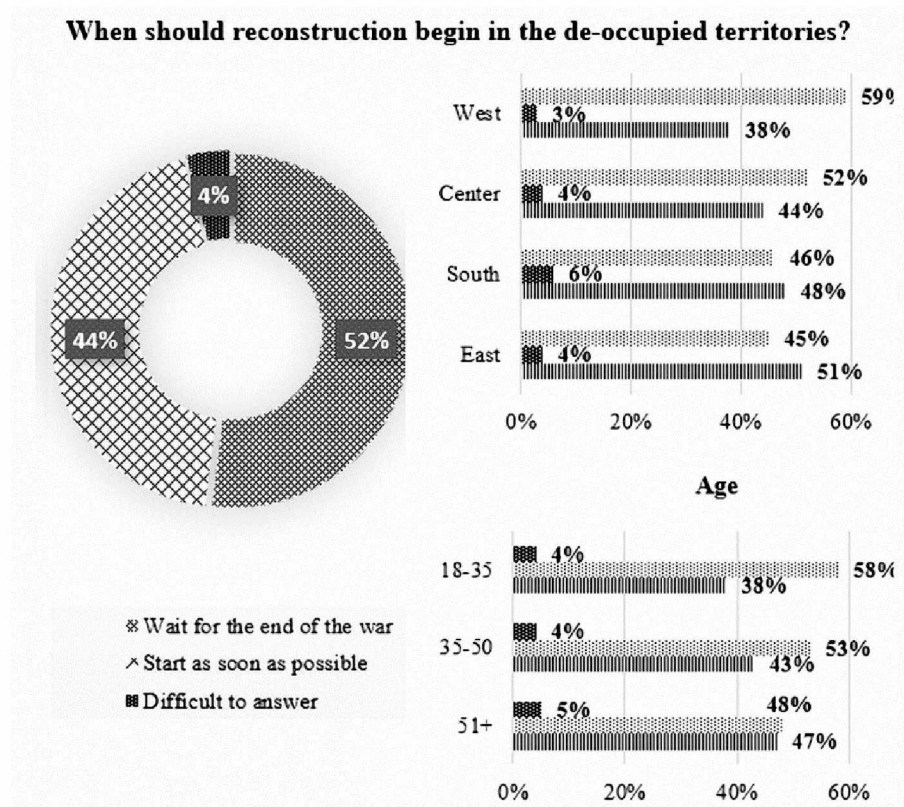


Figure 3. Fragment 1 of the result of a survey of the population of Ukraine

Moreover, the survey showed that restoring communication and energy infrastructure is the top priority, followed by social infrastructure (schools, hospitals, cultural and sports institutions), and the housing sector is in third place. It is interesting to note that in all regions of Ukraine, the percentage of people willing to wait for infrastructure restoration with the condition of modernizing equipment and introducing green energy is quite high, exceeding 50% (see Figure 4).

What should be the priority in restoring affected communities?

Priority 1							
	Regions				Age		
	West	Center	North	East	18-35	36-50	51+
Communications, energy infrast.	62	66	61	68	66	60	64
Housing	19	16	20	14	16	20	17
Social infrast.	12	10	12	8	11	12	10
Transport infrast.	5	5	5	6	6	5	5
Commercial infrast.		1		2	1	1	1
Difficult to answer	3	2	3	2	1	3	3

Priority 2							
	Regions				Age		
	West	Center	North	East	18-35	36-50	51+
Social infrast.	32	30	24	31	26	28	33
Housing	19	27	24	28	26	27	22
Communications, energy infrast.	26	23	25	19	22	25	24
Transport infrast.	17	15	22	16	23	15	15
Commercial infrast.	2	2		1	2	2	1
Difficult to answer	3	3	6	4	1	3	6

Figure 4. Fragment 2 of the result of a survey of the population of Ukraine

Among support programs for the population, restoring businesses and jobs in war-affected regions was considered the most necessary by respondents.

Thus, the survey allowed us to conclude that Ukrainians preferred to have the opportunity to get a job and earn money on their own, rather than receive financial assistance. The results of the survey, together with the analysis of the experience of restoring other countries, led to the conclusion of the necessity of finding optimal tools and ways of attracting financial and labour resources, whereby sustainable development should constitute the conceptual basis for post-war socio-economic growth.

Since Ukrainian science has no experience in restoring and stimulating the development of regions in times of war, and global practice does not have the appropriate tools to adapt existing scientific and methodological approaches to territory development in the face of massive city destruction, population centre degradation, infrastructure collapse, rapid economic decline, inflation growth, mass migration, etc., it is necessary to propose ways to effectively restore the economic complex of Ukraine in a compressed time frame. The authors attribute such tools to include investments, international technical assistance, government support, and charitable aid (crowdfunding).

3.3 Cognitive model of sustainable territorial development

According to the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine Regarding the Basics of State Regional Policy and the Policy of Restoration of Regions and Territories" dated July 9, 2022, the restoration of regions and territories affected due to the armed conflict in the territory of Ukraine can be considered a set of priority measures aimed at the accelerated restoration of critical and social infrastructure, residential and public facilities to a state that allows for the return of internally displaced persons and refugees to the region and the creation of favourable conditions for the activities of all business entities" ([VRU, 2022](#)).

Under the special regime of restoration and stimulation of the sustainable development of territories, the authors understand the socio-economic space, which is an economic system, the development of which is mutually determined by the connections between nature, society, and economic relations between economic entities, in which military actions took place that led to destruction and/or damage to its infrastructure, resulting in adverse socio-economic and/or environmental consequences, and on which a special regime of investment activity is being introduced for its restoration and development (Compiled by the authors).

As already noted earlier, the main sources of funding for the restoration of territories by the authors include:

- investments (I);
- international technical assistance (ITA);
- government assistance (GA);
- crowdfunding (Cr).

In general, the number of funds attracted for the restoration of territories (VAFRT) can be represented by the following mathematical model:

$$\sum_{i=1}^n I_i + \sum_{i=1}^n ITA_i + \sum_{i=1}^n GA_i + \sum_{i=1}^n Cr_i = VAFRT \quad (1)$$

where:

VAFRT is the number of funds raised for the restoration of territories;

$\sum_{i=1}^n I_i$ – is the volume of investments;

$\sum_{i=1}^n ITA_i$ is the volume of technical assistance;
 $\sum_{i=1}^n SS_i$ is the volume of government assistance; and
 $\sum_{i=1}^n Cr_i$ is the volume of crowdfunding.

The amount of funds required for the restoration of territories (VFNRT) depends on the number of funds raised and can be represented by the following ratio (see *Figure 5*).

The variable-ratio of the volume of funds raised and their needs:		
VAFRT < VFNRT VAFRT = VFNRT VAFRT ≥ VFNRT VAFRT > VFNRT		
Lack of conditions for the provision of sustainable development of territories	Creation of conditions for the provision of sustainable development of territories	Creation of conditions for stimulating the sustainable development of territories
VAFRT < VFNRT	VAFRT = VFNRT VAFRT ≥ VFNRT	VAFRT > VFNRT

Figure 5. A cognitive model of sustainable development of territories.

The situation in which the following inequation/equation holds:

$VAFRT < VFNRT$ characterizes a model that describes a situation indicating a lack of opportunities to restore the territory to its full extent and necessary quality and to provide conditions for sustainable development.

$VAFRT = VFNRT$ is a model that describes the situation when the amount of funds involved allows for the restoration of the infrastructure of the territories.

$VAFRT \geq VFNRT$ is a model that describes the situation when the funds involved create conditions for the sustainable development of the territory.

$VAFRT > VFNRT$ is a model that describes the situation when the funds involved ensure the sustainable development of the territory.

The development of an effective mechanism for attracting material and non-material resources aimed at restoring and stimulating the sustainable development of territories requires consideration of each component of the proposed model. The purpose of introducing the regime of restoration and stimulation of sustainable development of territories is to attract investments, international technical and state assistance, crowdfunding for the development of infrastructure damaged as a result of military aggression, and to ensure the sustainable development of not only the territory where this regime is applied but also the use of such a tool for the development of the national economy in general.

The expected results of the implementation of the regime of restoration and stimulation of the sustainable development of territories may be the following: prompt restoration of critical infrastructure destroyed and/or damaged as a result of the armed conflict with Russia, ensuring the vitality of the territory and its development based on modern construction standards, the best global practices, and technologies; demining and examination for the presence of explosive objects in the territories of hostilities and restoration of agricultural lands; creating favourable conditions for preserving existing and creating new jobs; introduction of innovative technologies; ensuring conditions for expanded reproduction to increase the volume of production of goods and services; effective use of the natural resource potential of the territory and others. The restoration of territories in the context of their sustainable development can be presented as shown in *Figure 6*.

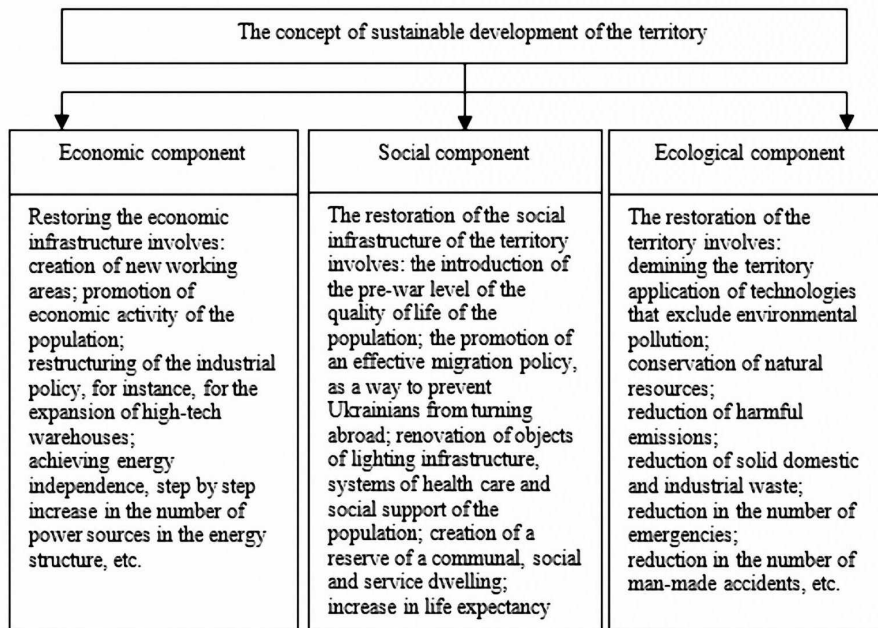


Figure 6. Restoration of territories in the context of their sustainable development

Source: compiled by the authors based on data ([NCRUW, 2022](#)).

As has been repeatedly noted, one of the main sources of funds for recovery and stimulation of sustainable development is investment. In this study, we will consider this particular source of funding for the restoration of territories. The authors plan to devote further research to state and international technical assistance, as well as crowdfunding. The presence of investment, as a more important source of restoration and development of infrastructure damaged as a result of military actions, allows for the sustainable development of the community where this regime is applied.

The State shall encourage investment through law-making and law enforcement activities. This method of governance is to stimulate investment activity, and to reach it, it is necessary to create a friendly investment environment that can provide for additional incentives for investors. "Incentives, as provided by legislation... allow the investor to adapt to the new minds of the state and to minimize investment. The provision of incentives for the investment process is one of the most important tools for promoting the investment attractiveness of Ukraine" ([Zeldina, 2018](#)).

The mode of renewal and stimulation of the sustainable development of territories can be seen as a modern phenomenon, the existence of which was laid during the hours of the creation of free economic zones. Thus, in Ukraine, as a useful tool for treating depressive manifestations in the regions, special government regimes were introduced in the territories of priority development, as if they were directed to the acquisition of local and foreign investments and the creation of new jobs. A special regime of investment activity in the territories of priority development envisaged the use of customs and tax benefits (see *Table 1*).

Table 1. List of benefits granted to investors in priority development areas.

Benefit code	Content of the benefit
X1	the first 2 years the income tax rate is 0%, and from the third to the fifth year 50% of the current rate
X2	the first 3 years the income tax rate is 0%, and from the fourth to the sixth year 50% of the current rate
X3	The investment amount received according to the investment project is exempt from taxation.
X4	Value added tax is charged in the case of equipment (except excise goods) imported from outside the customs territory of Ukraine for the implementation of an investment project, but not for more than 5 years.
X5	Value added tax is not charged in the case of equipment imported from outside the customs territory of Ukraine (except excise goods) for the period of implementation of the investment project.
X6	Customs duty is not charged in the case of import from outside the customs territory of Ukraine of raw materials, materials and equipment (except excise goods) for the implementation of an investment project, but for no more than 5 years.
X7	Customs duty is not charged in the case of import from outside the customs territory of Ukraine of raw materials, materials and equipment (except excise goods) for the period of implementation of the investment project.
X8	Taxation of incomes of non-residents in the amount of 2/3 of the established rate.
X9	Dividends are taxed at a rate of 10 percent.
X10	For the first 2 years from the beginning of the implementation of the investment project, no fee is charged to the State Innovation Fund.
X11	No fee is charged to the State Innovation Fund for the period of implementation of investment projects, but for no more than 5 years.
X12	No land fee is charged for the period of development of land plots, but for no more than 5 years.

The functioning of the regime of restoration and stimulation of the development of territories should be based on the coordination of tripartite interests created between the state, the investor, and the territorial community (see Figure 7).

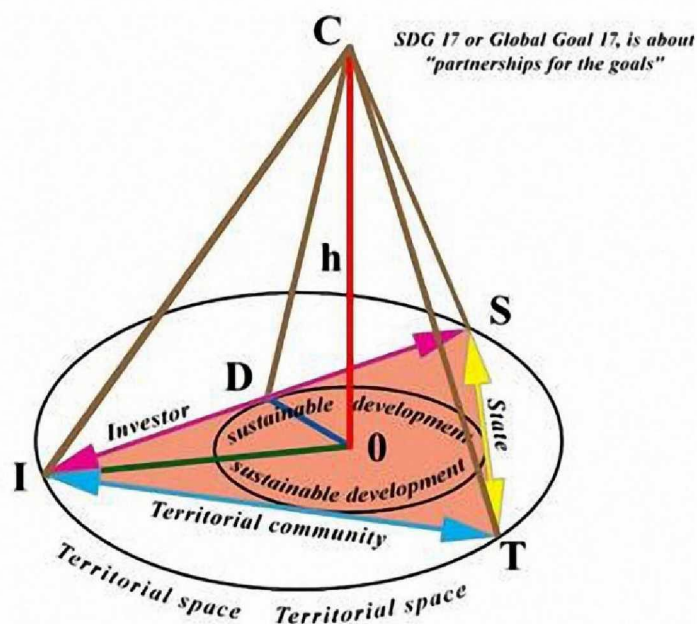


Figure 7. Principle scheme of coordination of interests between the state, the investor, and the territorial community.

Determination of the incentives provided to investors in territories with a special recovery regime should take into account the assessment of damage to its infrastructure. It is worth noting that the pace and results of recovery are directly related to the losses incurred. The amounts of funds required for the restoration of the territory are determined based on the obtained assessment of the damage to the infrastructure of the territory. In 2014, the report of the Office for the Coordination of Humanitarian Affairs (OCHA) of the United Nations noted the losses in monetary and in-kind terms. Incidentally, OCHA has been keeping statistics on the consequences of the military conflict between Russia and Ukraine for eight years ([OCHA, 2022](#)). Since 2014, the Vienna Institute for International Economic Research (WIIW) has also been dealing with the issue of determining losses. In the summer of 2020, they published the results of an assessment of Ukraine's losses from the armed conflict in Donbas, which amounted to \$21.7 billion ([Astrov, Ghodsi et al., 2022](#)).

According to the WIIW, direct damage from hostilities in Donbas includes any infrastructural destruction, as the entire spectrum of heavy weapons (mortars, guns, tanks, volley fire systems) was used in the specified territory. A similar approach is proposed in the Damage and Loss Assessment (DaLA) methodology published on the World Bank website. According to this methodology, the assessment considers firstly, short-term government interventions necessary to start recovery, and secondly, financial needs to achieve general recovery post-disaster, reconstruction, and disaster risk management or reduction. The end product of the assessment is a comprehensive recovery, reconstruction, and risk management program that will guide all actions in the country recovering from the disaster ([The World Bank, 2022](#)). For each group reflecting the degree of damage to the territory's infrastructure, the corresponding class of investment attractiveness is compared (see *Figure 8*).

The level of damage to the territory's infrastructure					
0%	up to 20%	from 20% to 40%	from 40% to 60%	from 60% to 80%	over 80%
I group	II group	III group	IV group	V group	VI group
1 class	2 class	3 class	4 class	5 class	6 class
Class of promotion of investments in the territory, according to the level of its destruction					
A favourable situation for making investments	Relatively favourable investment situation	A controversial situation for making investments	The unfavourable situation for making investments	A seriously unfavourable situation for making investments	A dangerous situation for making investments
Period of application of incentives [*]					
1 year	up to 2 years	up to 3 years	up to 4 years	up to 5 years	up to 6 years

Figure 8. Principle scheme of coordination of interests between the state, the investor, and the territorial community.

Following the proposed scale, the incentives (a set of benefits) and the period of their application offered to investors are determined. For each territorial community, the period of application of incentives and the priority of the purpose of their provision is determined separately.

4. CONCLUSIONS

The proposed conceptual approach to restoring the territories of Ukraine, according to the authors, ensures its sustainable development in the post-war period by creating a strong, socially responsible, modern, open competitive economy of equal opportunities, comfortable for people's lives, strategically and fully integrated into the European and global economic community, capable of forming a reliable financial, economic, and defence potential sufficient to resist military and economic aggression.

It is substantiated that the introduction of the regime of restoration and stimulation of the sustainable development of the territories should take place, taking into account the military situation and military operations in the territory of Ukraine, the estimated material damage of the territories where hostilities were conducted, the degree of destruction of the infrastructure, migration flows of the population, and much more. In the conditions of martial law, the introduction of a regime of recovery and stimulation of sustainable development of the territory can become an effective mechanism for the recovery of Ukraine.

The cognitive model of sustainable development of territories affected by military actions developed in this study makes it possible to justify proposals for their restoration and further development, which can be included in normative and legal documents adopted by the government of Ukraine. Namely, in laws concerning the post-war reconstruction of territories, in state strategies, state regional strategies, strategic planning for the development of regions, documents concerning the planning of reconstruction and development of territorial communities, etc.

Based on the obtained results, the authors plan to develop scientific and methodological guidelines aimed at justifying the introduction of the regime of restoration and stimulation of sustainable development of territories, which will allow substantiated expediency of the adopted measures and their effectiveness, which will be submitted in the form of recommendations to the legislative authorities of Ukraine.

The authors of the article continue their research on the search and development of a scientific and methodological basis for the restoration and stimulation of the sustainable development of territories. Work is being carried out on the methodology for assessing the territories' restoration and its approval, which will be carried out in the unoccupied Buchanskaya and Irpenskaya territorial communities, in the territory of which fierce battles were fought.

AUTHOR CONTRIBUTIONS

Conceptualization, N.M., E.B., and M.D.; methodology, N.M., E.B., and M.D.; software, N.M.; investigation, N.M. and E.B.; resources, M.D.; data curation, N.M.; writing—original draft preparation, N.M., E.B., and M.D.; writing—review and editing, N.M., E.B., and M.D.; supervision, N.M. All authors have read and agreed to the published version of the manuscript.

ETHICS DECLARATION

The authors declare that they have no conflicts of interest regarding the publication of the paper.

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