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THE PECULIARITIES OF THE RECONSTRUCTION OF UKRAINIAN TERRITORIAL COMMUNITIES IN THE CONTEXT OF THE EUROPEAN GREEN DEAL

ABSTRACT

The article focuses on delineating the nuances of post-war community recovery within the context of the European Green Deal. The research aims to identify the features and challenges of community recovery in the post-war period, considering the principles outlined in the European Green Deal. An analysis of the losses incurred by territorial communities in Ukraine due to the conflict with Russia is conducted, along with quantifying the percentage of territories that were occupied and require restoration. Key difficulties on the path to implementing green community recovery in the current stage are identified, and the principles of green recovery for Ukrainian communities are elucidated and characterized. The article underscores that the recovery of Ukrainian communities should be a systemic process, ensuring a long-term outcome in the form of modernization changes and sustainable development for Ukraine. It asserts that post-war recovery should not merely involve the reconstruction of what was destroyed but should be oriented towards contemporary ecological standards and the vector of European integration. This includes the extensive use of modern energy resources, innovative energy-saving technologies, decarbonization, and more. The article contends that the Green Course has the potential to play a pivotal role not only in the immediate restoration of damaged ecosystems but also in addressing long-term threats related to climate change. The article supports the idea that Ukraine's adherence to the European Green Deal and its continued implementation can be an effective instrument on the path to Ukraine's green recovery. Overall, it provides insights into the comprehensive approach required for post-war recovery, emphasizing alignment with contemporary ecological standards and the European integration trajectory. The article concludes that Ukraine's alignment with the European Green Deal can be a potent tool in steering the country towards a sustainable and green recovery.

Keywords: territorial communities, decentralization, community losses due to war, post-war recovery, green economy, European Green Deal, help for Ukraine from the EU, digitalization

JEL Classification: O44

INTRODUCTION

The restoration of communities serves as the foundation for supporting and further developing the economy of our country, as it constitutes the basis for the economic component of security and the subsequent defence capability of Ukraine. Unfortunately, due to the military aggression by Russia, 12 regions of Ukraine are recognized as territories where hostilities are ongoing or were temporarily occupied. This impacts more than 330 communities [9]. Simultaneously, with the crucial tasks of rebuilding the critical infrastructure of regions and enhancing the level of energy security, our country has set the goal of joining the EU. This objective involves harmonizing Ukrainian legislation with European legal norms, implementing the best practices of the EU, and achieving European standards and norms. Additionally, a vital step on the path to recovery in the context of Eurointegration processes is digitization. Amid the initiative of the European Green Deal, Ukraine faced a full-scale invasion by Russia. Although the new realities of war slowed down certain steps towards achieving the goals outlined by the Green Deal, environmental and climate challenges have not lost their relevance.

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They have intensified further due to the loss of Ukraine's ecosystems resulting from the armed conflict. Considering the necessity of overcoming the consequences of destruction and rebuilding territorial communities based on the principles of innovation, environmental sustainability, and alignment with European standards, determining key aspects of such recovery in the context of the European Green Deal becomes paramount.

LITERATURE REVIEW

Presently, there exist numerous studies addressing the recovery of communities within the framework of the European Green Deal. Authors such as O. Kondratiuk, N. Lushnikova, M. Holiuk, and O. Liashchuk have contributed to the development of a handbook for local self-government bodies titled "Green Recovery of Ukrainian Communities." Their focus encompasses aspects such as post-war reconstruction aligned with energy and climate considerations, Euro-integration, the role of local self-government bodies in the development process, and securing the resilience and autonomy of communities. O. Popova delves into the post-war reconstruction of Ukrainian agriculture towards Eurointegration and the green trajectory, examining the evolution of targeted support for farmers within the EU Common Agricultural Policy (CAP). The study underscores the shift from productivism to socio-ecological-economic support, with an updated focus on the environmental-climate objectives of the European Green Deal in 2021–2027. It highlights the significance of rebuilding the agricultural sector based on circular economy principles and proposes a series of ecological and climate measures. R. Yaroshchuk examines the problem of the impact of war on climate change and the well-being of communities through the damage to soils caused by combat actions by Russian terrorist forces. This issue requires resolution through the conservation of natural resources, restoration, and the creation of protective forest plantations. D. Oliinyk and D. Nizhnyi focus their scientific interests on the problems of post-war economic recovery of natural assets of territorial communities within the framework of the European innovative partnership of "smart" cities and "smart" communities, using the example of a deregulated market for electricity assets and the implementation of the natural asset securitization mechanism.

Among Ukrainian non-governmental organizations, analytical institutes, and international organizations, the issue of green community recovery also sparks lively discussion. The non-governmental organization "DIXI GROUP" formulated Quarterly Review No. 1 (January-April 2022) "Ukraine and the European Green Deal," which identified key trends in view of Russia's military invasion, reviewed main policies, and provided recommendations for further implementation of this initiative in Ukraine. The Center for Environmental Initiatives "Ecoaction" developed and presented the principles of green post-war reconstruction of Ukraine, and this organization actively researches and develops recommendations for the transformation of coal regions during the post-war recovery of Ukraine. The Ukrainian Center for Economic and Political Studies named after Oleksandr Razumkov, as part of the presented analytical report "Ukraine on the Path to the EU: Realities and Perspectives," emphasizes the need to create a "roadmap" for Ukraine to implement the European Green Deal. This roadmap aims to achieve coherence between Ukraine's tasks to join this strategy and the real opportunities related to the consequences of the war. The map should include a set of priority areas for cooperation between Ukraine and the EU, particularly in the areas of greenhouse gas emissions trading, hydrogen energy, and provide an individual approach to the conditions of decarbonization of Ukraine's economy and access to sources of funding. The EU Delegation to Ukraine is implementing an extensive information and communication campaign called "Unlocking Green Potential Together," aimed at delivering to all target groups relevant, objective, and comprehensive information about the European Green Deal. The UNDP, as part of the project "Support for Green Recovery in Ukraine," focuses its activities on creating the necessary foundations for attracting green investments to stimulate economic growth, create environmental and social benefits, and accelerate a more sustainable recovery.

However, despite a significant scientific background in this direction, it should be noted that most studies are primarily focused on the implementation of the European Green Deal as a whole in Ukraine or on a generalized strategy of green recovery for territorial communities. The issue of defining the specifics of the recovery of territorial communities in Ukraine as part of the European Green Deal initiatives remains unexplored.

AIMS AND OBJECTIVES

The aim of the article is to identify the peculiarities and challenges of the post-war recovery of communities within the framework of the European Green Deal. The stated objective involves the accomplishment of the following objectives:

- to assess the extent of destruction and losses of territorial communities in Ukraine due to the Russian invasion;
- to analyze the opportunities for Ukraine's recovery based on the European Green Deal;
- to identify the principles of green recovery of communities at the present time;

- to develop proposals for effective post-war reconstruction of territorial communities within the framework of the European Green Deal.

METHODS

The study employs a blend of general scientific and specialized methods of scientific understanding grounded in contemporary theoretical and methodological approaches. This approach facilitated the attainment of the defined objective and the resolution of the outlined tasks. It involves dialectical reasoning to substantiate the theoretical foundations of post-war recovery, synthesis, induction, and deduction for crafting generalizations and theoretical conclusions based on the examined material, retrospective analysis while scrutinizing Ukraine's adoption of the European Green Deal, logical-analytical methods to characterize contemporary needs in the recovery of territorial communities, statistical information processing to determine quantitative parameters of losses of territorial communities from military actions, and scientific abstraction to articulate and elucidate the content of specific concepts and definitions.

RESULTS

Even in the conditions of a state of war, Ukraine's Euro integration vector, as before, identifies the European Green Deal as one of its priority directions. The European Green Deal is a step-by-step action plan developed by the European Union with the goal of transforming Europe into a climate-neutral continent by 2050. The initiative includes the decarbonization of energy, the development of energy efficiency and renewable energy sources, the implementation of circular economy principles, addressing climate change, and improving the well-being and health of the population based on sustainable development principles.

Funding for the European Green Deal for EU member states is outlined in the Investment Plan of the European Green Deal. This plan consists of two main financing streams totalling EUR 1 trillion. Over 50% of the funds, totalling EUR 528 billion, will be sourced directly from the EU budget and the EU Emissions Trading System. The remaining portion will be secured through the InvestEU program, encompassing EUR 279 billion from both public and private sectors by 2030, along with EUR 114 billion in national co-financing. Additionally, the European Innovation Council has earmarked a budget of 300 million euros to invest in innovations that stimulate market creation and align with the objectives of the European Green Deal.

Within the investment plan of the European Green Deal, funding is provided only for projects that contribute to the realization of the deal's objectives. These projects can range from small-scale initiatives (such as the energy retrofitting of individual households) to larger endeavours (such as establishing a network of electric vehicle charging stations). Examples of sustainable investment projects supported by the Investment Plan for Europe include the modernization of centralized heating services in Budapest, support for the installation of solar panels in private homes and the improvement of energy efficiency in industrial companies in Lithuania, or the modernization of electricity and heating supply in Zagreb. It is evident that the possibility of obtaining funding for the implementation of climate and environmental projects will only be available after Ukraine joins the European Green Deal.

There is a stable trend towards increasing financing for the measures of the European Green Deal. This trend has strengthened after the full-scale invasion of Russia into Ukraine, particularly in light of the need to diversify energy resource supply sources and increase the energy independence of the European Union. A specific component of the increased funding is the solidarity measures with Ukraine and providing access to specific EU programs. With the prospective attainment of candidate country status for EU accession, Ukraine may gain direct access to additional sources of funding, which is advisable to utilize for the modernization and "green" reconstruction of the economy.

While the military actions have slowed down the pace of implementing Ukraine's long-term climate neutrality strategy initiated in 2021, they have also become a negative factor that further pushes our country along this path [19]. Since the damage to the Ukrainian ecosystem due to Russia's aggression is estimated at over EUR 46 billion [20], environmental protection will become a key element of post-war reconstruction.

The Russian military aggression has resulted in a series of detrimental effects on various environmental components, including atmospheric air, soils, surface, wildlife, underground waters, landscapes and vegetation.

The losses inflicted by the occupiers on the environment are currently estimated by the Ministry of Ecology and Natural Resources of Ukraine at 2,108 billion hryvnias. These figures are as of October 11, 2023. Among them, losses from air

pollution amount to 1,078.7 billion hryvnias, from soil and land - 984.4 billion hryvnias, and from water - 60.7 billion hryvnias.

In wartime conditions, the primary environmental threat is linked to the potential pollution caused by damage to industrial enterprises and infrastructure due to the impact of munitions or disruptions in their operation resulting from issues like electricity, water supply, gas supply interruptions, and technological process violations. Combat actions in industrially developed territories, especially in the east and south of Ukraine, pose significant environmental risks.

Numerous industrial facilities, including the Chornobyl, Zaporizhia, Khmelnytskyi, Rivne, and South Ukrainian Nuclear Power Plants, Kyiv, Dnipro, Kremenchuk, Dnistrovska, and Kakhovska Hydroelectric Power Stations, thermal power plants, combined heat and power plants, chemical and metallurgical enterprises, mines, oil refineries, and oil product storage facilities, have suffered damage or disruptions during hostilities. These instances pose considerable environmental hazards [8].

Throughout the conflict, there were repeated instances of infrastructure damage and power disruptions affecting coal mining operations. This led to the stoppage of mine water drainage systems, resulting in complete flooding of mines in several cases. This, in turn, caused pollution of surface water, widespread flooding, pollution of the adjacent areas and sinking of the ground surface.

Additionally, the development of the green economy in Ukraine is embedded in the Association Agreement with the EU. In particular, the appendices to the agreement include a list of specific directives and regulatory acts that regulate the transition to a green economy [18]. Therefore, the concept of green community recovery is objectively necessary both in terms of addressing damages and destruction and from the perspective of Eurointegration policies.

In the initial weeks of the conflict, spanning late February to early March, military engagements occurred in 10 regions. As of March 2023, active combat operations persist in the Kharkiv, Luhansk, Donetsk, Kherson, and Zaporizhia regions. The region's most significantly impacted are those directly engaged in the conflict, namely Donetsk, Kharkiv, Luhansk, Mykolaiv, Zaporizhia, Kyiv, and Chernihiv. Table 1 provides a breakdown of the total monetary losses by region as of February 2023.

Table 1. The comprehensive evaluation of total monetary losses by regions as of February 2023. (Source: [8])

Regions	Evaluation of immediate losses, USD million
Cherkasy region	130
Chernihiv region	6 364
Chernivtsi region	68
Dnipropetrovsk region	2 045
Donetsk region	32 217
Ivano-Frankivsk region	447
Kirovohrad region	330
Kharkiv region	31 206
Kherson region	7 310
Khmelnytskyi region	48
Kyiv City	1 198
Kyiv region	9 099
Luhansk region	17 681
Lviv region	171
Mykolaiv region	6 326
Odesa region	555
Poltava region	263
Rivne region	79
Sumy region	2 968
Ternopil region	53
Vinnitsia region	529
Volyn region	25
Zakarpattia region	14
Zhytomyr region	750
Zaporizhia region	10 528

Over half of the regions in Ukraine experienced direct impacts from active hostilities. Numerous communities in these conflict zones underwent occupation by Russian forces. Out of the 65 communities in active war zones, 46 (71%) were occupied and subsequently liberated by Ukrainian forces. The majority of the communities affected by occupation are situated in the Chernihiv oblast, accounting for 33% of all occupied amalgamated territorial communities (Table 2).

These communities, along with those in the Kyiv and Sumy regions, were liberated in late March. The average duration of occupation for liberated amalgamated territorial communities was 36 days, while communities yet to be liberated had an average occupation duration of 107 days by the time of the response [13].

Table 2. Occupied amalgamated territorial communities by regions. (Source: [13])

Region	Number of amalgamated territorial communities	Percentage of all communities occupied, %	Percentage of total responses in the region, %
Chernihiv region	15	33	58
Donetsk region	3	7	20
Kharkiv region	1	2	8
Kherson region	1	2	100
Kyiv region	6	13	20
Luhansk region	3	7	100
Mykolaiv region	3	7	19
Sumy region	6	13	35
Zaporizhzhia region	6	13	43
Zhytomyr region	1	2	4

The needs for recovery vary among different regions and territories, but green community recovery should be based on common principles of sustainable development, taking into account social, economic, and environmental factors. The Center for Environmental Initiatives "EcoDia" proposes the following principles [3]:

1. Sustainable and systemic solutions. Any temporary and urgent tasks should be supported by long-term development plans. In the post-war recovery period, Ukraine, represented by responsible authorities, should orient itself towards stable and systemic solutions. Economic development is a crucial component of any country's progress; however, for a comfortable and high-quality life, it is essential to always consider the need for a balance between the economy, environmental safety, and the needs of society. Hence, in the reconstruction of urban and rural areas along with their communities, competent authorities need to strike this balance. The most successful global practices in revitalizing cities following extensive devastation emphasize that only a comprehensive approach rooted in the principles of sustainable development can revive the welfare of the population and restore social life.
2. Openness, active community engagement, and public inclusion in the decision-making process. One of the foundations of democracy is transparency and openness in governance for effective public oversight, which Ukraine sought before the onset of the full-scale invasion by the enemy. To implement public control over the fulfilment of set tasks and to ensure informed decision-making at the local level, it is crucial to provide access to public information and necessary data. In the process of rebuilding Ukraine, the role of communities is paramount, especially in the context of decentralization and the need to ensure a sense of "ownership" of the results of this reconstruction. Communities, as key participants in this process, have the right to decide and plan recovery processes according to their defined priorities.
3. Utilization of the best available technologies and practices. The rebuilt Ukraine should strive to become a high-tech nation while adhering to all environmental standards. Therefore, post-war reconstruction of infrastructure and the economy should be based on the best available technologies and practices, allowing our country to move away from its Soviet past and transition into a bright and secure future.
4. The development of cities and regions should prioritize resilience and sustainability. The reconstruction process in Ukraine should emphasize enhancing urban planning guided by sustainable development principles. Urban planning should be centred around people and their needs, with public spaces being safe, accessible, and comfortable for everyone, achievable through the implementation of appropriate measures.

5. Decarbonization and decentralization of energy. Green reconstruction should involve Ukraine's accelerated abandonment of fossil fuels, especially its imports. The processes of increasing energy efficiency and prioritizing decentralized renewable energy sources should take precedence in the country's new energy policy. Ukraine should aim to achieve a complete shift to renewable energy sources, reaching 100% reliance by 2050, and gradually reducing dependence on nuclear energy for power generation. Investments in the energy sector should align with the imperative to move away from fossil fuels.
6. The focus on building resilient and decentralized agri-food systems is essential for ensuring food and ecological security in Ukraine. The existing system, characterized by large-scale monoculture production and centralized logistics and processing, is vulnerable to attacks by aggressors, causing disruptions with systemic consequences for supply chains in Ukraine and globally. Thus, in the post-war recovery phase, Ukraine should prioritize the development and support of agri-food systems that are more adaptive, resilient, and decentralized.
7. Preservation of Ukraine's ecosystems and natural resources. The crucial role of ecosystems in mitigating the impacts of climate change, supporting the health of Ukrainians, ensuring food security, and contributing to defense capabilities. Therefore, it is important to maintain the volume of ecosystems at a level no worse than before the full-scale invasion, excluding areas directly affected by military actions.

Considering the principles of green recovery, adhering to EU legislation, and drawing from the experiences of European nations in implementing environmentally friendly initiatives will assist communities in pursuing eco-friendly post-war recovery and accessing EU funding.

Communities can leverage best practices from the EU for post-war recovery. The experience of Croatia (after the war for independence in 1991-1995) and Slovenia (1991) indicates that a key focus should be on people-centric approaches, creating conditions and incentives for residents' return. Furthermore, Croatia's main recommendations for Ukraine include caution against hyperregulation and centralization in reconstruction processes, reducing bureaucratic barriers in the documentation of reconstruction processes for damaged or destroyed property, supporting local businesses and startups, and promoting trilateral cooperation between municipalities, central executive authorities, and international partners [7].

The necessity for community recovery based on the principles of the green economy is also supported by relevant programs within the framework of the Recovery Plan for Ukraine, developed by the National Recovery Council [16]. For example, the list of 15 programs aimed at achieving the goals for 2032 includes Program 3, "Reconstruction of a clean and protected environment and ensuring sustainable development in sync with the EU Green Deal," Program 4A, "Enhancing the resilience of the integrated energy system: expanding interconnections with ENTSO-E, developing oil pipelines tied to refineries in Europe, and building gas storage facilities," Program 4B, "Supporting the EU's transition to zero-carbon energy: developing carbon-free energy (nuclear and renewables), increasing gas and biofuel production, developing the H2 ecosystem," as well as Program 10A, "Modernization of housing in regions with a priority focus on energy efficiency and new urban planning pilot projects," and Program 10B, "Large-scale housing construction and infrastructure modernization according to advanced urban planning and sustainable development practices (including transportation), development of electrification, heating, water networks, and digitization."

The presentation of this plan at a conference in Lugano in July 2022 confirmed the readiness of international partners to support Ukraine in the path of reconstruction through such means. Although the Ukrainian side is the developer and initiator, it is worth noting that several initiatives related to sustainability and green recovery are clear conditions for receiving international assistance.

For instance, financing under the Rebuild Ukraine Facility, as outlined in the European Commission's "Ukraine Relief and Reconstruction" Communication [17], provides the opportunity to invest in strategically important sectors of Ukraine's economy, contingent upon their alignment with climate and environmental policies and standards of the EU. These conditions are not unique to Ukraine but rather a consequence of the EU's consistent policy regarding the European Green Deal.

The recovery of Ukrainian communities is a systemic process that should ensure the modernization and further sustainable development of our country. Post-war reconstruction must respond to modern challenges of environmental orientation and European integration processes, namely:

1. Guarantee widespread availability of contemporary energy resources;
2. Introduce the use of innovative energy-saving technologies during reconstruction;
3. Develop a clear action plan for critical situations of energy supply disruption;
4. Formulate a perspective plan for different population segments to transition from fossil fuels to renewable energy;

5. Conduct an information campaign on climate change and the resulting threats, as well as propose solutions to these problems.

Rebuilt Ukrainian settlements should become barrier-free environments with accessible goods, services, and information for the inclusive life of all citizens regardless of their mobility. This also applies to ensuring equal access to energy resources. Inclusive climate actions mean reducing the influence of climate change on the most vulnerable segments of the population and ensuring a fair distribution of the benefits and burdens of climate measures. Climate actions become inclusive through the involvement of a wide range of stakeholders, the development of fair and accessible policies, and the equitable distribution of policy impact. This leads to an adaptive and scalable approach that provides economic and social benefits [7].

Territorial communities should create strategic plans to enhance energy efficiency and adapt to climate change. They need to study the positive experience of implementing green projects both in Ukraine and abroad. Another key challenge is the necessity to learn from the experience of local self-government bodies in crisis situations, such as natural disasters, armed conflicts, or the migration of refugees.

In 2021, Ukraine, according to the Open Data Maturity Report, ranked 6th in the open data rating, demonstrating significant growth compared to 2020 (17th place) [12]. The Ministry of Digital Transformation, in collaboration with European partners, is exploring the possibility of joining the Connecting Europe Facility (CEF) program, which aims to invest more than EUR 30 billion in Europe's transport (approximately EUR 25,8 billion), energy (EUR 5,8 billion), and digital (EUR 2,1 billion) infrastructure for the period 2021-2027. Within the digital sector of the program, initiatives are underway to create secure digital networks with high capacity, implement 5G systems, and digitize transportation and energy networks.

DISCUSSION

According to the authors of the handbook "Green Recovery of Ukrainian Communities," there are three main problems in expanding the green course in Ukraine [7]:

- low level of public demand for climate actions;
- weak state institutions unable to implement necessary reforms;
- lack of financial resources.

It is evident that the situation with Ukraine's alignment with the European Green Deal during 2022 was hampered by the onset of full-scale Russian aggression against Ukraine, necessitating a review of existing policies and increased uncertainty in energy markets [10].

However, in our opinion, the European Green Deal has the potential to have a significant impact, not just in promptly rehabilitating damaged ecosystems but also in tackling enduring challenges posed by climate change. Therefore, the European Green Deal can be a valuable tool for Ukraine's green recovery.

Regarding the mentioned obstacles on the path to expanding the green course in Ukraine, we believe that the military aggression and its consequences, in the context of exacerbating environmental problems, have drawn even more attention from Ukrainian society to climate issues and prompted corresponding activism. The issue of the ineffectiveness of state institutions in the reform sector will be automatically addressed due to the necessity of institutional reforms as a condition for EU accession. Insufficient financial resources can be mitigated through EU programs, as mentioned earlier, and by attracting investments.

We support the idea that the successful implementation of the European Green Course can bring several potential benefits for Ukraine's development, including:

- facilitating the integration of Ukrainian industries into new EU industrial processes through the introduction of an "industrial visa-free regime.";
- strengthening the development of organic production;
- collaboration on hydrogen energy;
- increasing the potential to access the European public procurement market;
- access to EU financial and technical support instruments in the areas of climate change adaptation, integration of Ukraine's conservation areas into the NATURA 2000 network;
- further affirmation of Ukraine as a full-fledged participant in climate-neutral Europe [7].

The processes of Ukraine's integration with Europe and the implementation of the European Green Deal are intricate and will profoundly influence the country's development in the long term. The involvement of Ukrainian municipalities in these processes presents an opportunity for them to modernize and advance. However, to ensure the utmost effectiveness of this participation, it is crucial to enhance the financial opportunities of communities and actively contribute to the development and execution of actions by the Eurointegration processes.

CONCLUSIONS

For the full integration of Ukraine into the European space, a significant restructuring of the economy to eliminate carbon dependence is crucial. Ukraine actively engages in the "green" policies of the European Union, participates in relevant European programs, and gradually integrates into new environmentally "clean" production networks, thereby accelerating the decarbonization of the economy. Further implementation of European environmental standards will contribute to the synchronization of environmental protection processes in Ukraine and Europe. The partnership between Kyiv and Brussels in this area will help minimize and overcome the losses inflicted on Ukraine's ecosystems by Russian aggression [20], which, according to conducted research, amount to 46 billion Euros. The losses of individual communities due to military actions range from USD 14 million to USD 32,217 million.

Given the scale of losses and considering the damage to the ecosystems of the regions, we believe that recovery within the framework of the European Green Deal will provide necessary financial and modernization opportunities for the qualitative reconstruction and further sustainable development of Ukrainian territories. Despite the critical situation, Ukrainian communities should have the opportunity for sustainable recovery and can serve as a platform for implementing innovative climate policy approaches.

Green community recovery should be based on principles such as stable and systemic solutions, transparency, community and public participation in decision-making, the use of the best available technologies and practices, sustainable development of cities and regions, decarbonization and decentralization of energy, development of sustainable and decentralized agro-food systems, and ensuring the preservation of Ukraine's ecosystems and natural wealth. Adhering to these principles will not only restore what was lost but will also build a fundamentally new economic system based on inclusivity and sustainability.

Post-war reconstruction must meet environmental demands, ensuring free access to modern energy resources, introducing innovative energy-saving technologies, having an action plan for energy supply disruption, transitioning from fossil fuels to renewable energy, and conducting awareness campaigns on climate change and related threats.

The war in Ukraine poses unprecedented challenges for the entire world, especially for the European continent striving for climate neutrality. Thus, driven by internal needs and European policies on financial support, the necessity for green community recovery can become a driving force for Ukraine on the path to sustainable long-term growth. In this scenario, significant improvements in the functioning of these territories are envisioned, employing advanced practices and modern technologies.

ADDITIONAL INFORMATION

Author's contributions are equivalent.

REFERENCES

1. Analytical Report following the Communication from the Commission to the European Parliament, the European Council and the Council Commission Opinion on Ukraine's application for membership of the European Union (2023). https://neighbourhoodenlargement.ec.europa.eu/system/files/2023-02/SWD_2023_30_Ukraine.pdf
2. Brown, L., Larsen, J., Roney, M., & Adams, E. (2015). The Great Transition: Shifting from Fossil Fuels to Solar and Wind Energy. Earth Policy Institute. Rutgers University. <http://www.earth-policy.org/books/tgt>
3. Center for Environmental Initiatives Ecoaction. (2022). *Pryntsypy zelenoi pisliavoiennoi vidbudovy Ukrainy Ekodii*. EcoDia. <https://ecoaction.org.ua/zelena-vidbudova-ua.html>
4. EIP-SCC Eurocities. (2020). *The Marketplace of the European Innovation Partnership on Smart Cities and Communities (EIP-SCC)*. <https://eurocities.eu/projects/eip-scc/>

5. Eur-lex. (2022). *Communication from the commission to the European parliament, the council, the european economic and social committee and the committee of the regions*. A New European Innovation Agenda. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0332/>
6. Interoperable Europe Act. (2022). *ISA² – Interoperability solutions for public administrations, businesses and citizens*. https://ec.europa.eu/isa2/eif_en/
7. Kondratiuk, O., Lushnikova, N., Holiuk, M., & Liashchuk, O. (2023). *Zelene vidnovlennia ukrainskykh hromad*. NGO "Ecoclub". https://ecoclubrivne.org/green_recovery_ukr/
8. Kyiv School of Economics. (2023). *Zvit pro priami zbytky infrastruktury vid ruinuvan vnaslidok viiskovoi ahresii rosii proty Ukrainy za rik vid pochatku povnomasshtabnoho vtorhnennia*. https://kse.ua/wp-content/uploads/2023/03/UKR_Feb23_FINAL_Damages-Report-1.pdf
9. Ministry of Reintegration of Temporarily Occupied Territories of Ukraine. (2022). *Perelik terytorii, na yakyykh vedutsia (velysia) boiovi dii abo tymchasovo okupovanykh Rosiiskoiu Federatsiieu: Nakaz Ministerstva z pytan reintehratsii tymchasovo okupovanykh terytorii Ukrainy 22 hrudnia 2022 roku № 309*. <https://minre.gov.ua/wp-content/uploads/2023/09/perelik.pdf>
10. NGO "DIXI GROUP." (2022). *Ukraina ta Yevropeiskyi zelenyi kurs: Kvartalnyi ohliad №1 (sichen-kviten 2022 roku). Osnovni tendentsii. Rekomendatsii*. <https://ua-energy.org/uk/posts/ukraina-ta-yevropeiskyi-zelenyi-kurs-1>
11. Oliinyk, D., & Nizhnyi, D. (2023). Post-war economic rehabilitation of the natural assets of territorial communities. In V.V. Nebrat (Eds.), *Reconstruction for development: foreign experience and Ukrainian perspectives* (pp. 394-406). NAS of Ukraine, SI "Institute for Economics and Forecasting of the NAS of Ukraine". <http://ief.org.ua/wp-content/uploads/2023/08/Reconstruction-fordevelopment.pdf>
12. Open Data Maturity Report 2021. (2021). Publications Office of the European Union. https://data.europa.eu/sites/default/files/landscaping_insight_report_n7_2021.pdf
13. Piddubnyi, I., Neyter, R., Zamidra, S. & Nivievskiy, O. (2022). *Ukrainian ATCs during RF full-scale invasion*. KSE Center for Food and Land Use Research. <https://kse.ua/wp-content/uploads/2022/10/Final-Report-II-part-KAS.pdf>
14. Popova, O. (2023). Post-war reconstruction of Ukrainian agriculture in the context of European integration: the green course. In V.V. Nebrat (Eds.), *Reconstruction for development: foreign experience and Ukrainian perspectives* (pp. 413-441). NAS of Ukraine, SI "Institute for Economics and Forecasting of the NAS of Ukraine". <http://ief.org.ua/wp-content/uploads/2023/08/Reconstruction-fordevelopment.pdf>
15. Rac, I., Erjavec, K., & Erjavec, E. (2020). Does the proposed CAP reform allow for a paradigm shift towards a greener policy? *Spanish journal of agricultural research*, 3(18). <https://doi.org/10.5424/sjar/2020183-16447>
16. Recovery of Ukraine. (n.d.). <https://recovery.gov.ua/>
17. Recovery and Reconstruction of Ukraine. (2023). EU Solidarity with Ukraine. https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/recovery-and-reconstruction-ukraine_en
18. Supporting green recovery in Ukraine. (2022). UNDP. <https://www.undp.org/ukraine/projects/supporting-green-recovery-ukraine>
19. *Ukraine on its way to the European Green Deal*. (n.d.). European Union and Ukraine: Moving Forward Together. <https://eu4ukraine.eu/greengeal-ua>
20. Ukrainian Center for Economic and Political Studies named after Oleksandr Razumkov. (2022). *Ukraina na shliakhu do Yes: realii i perspektyvy: analitychna dopovid*. https://razumkov.org.ua/images/journal/NSD187-188_2022_ukr_full.pdf

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ОСОБЛИВОСТІ ПОВОЄННОГО ВІДНОВЛЕННЯ ГРОМАД У КОНТЕКСТІ ЄВРОПЕЙСЬКОГО ЗЕЛЕНОГО КУРСУ

Стаття присвячена визначенню особливостей повоєнного відновлення громад у контексті Європейського зеленого курсу. Метою дослідження є визначення особливостей та викликів відновлення громад у післявоєнний період у контексті Європейського зеленого курсу. Здійснено аналіз втрат територіальних громад України внаслідок війни з росією, а також визначено відсоток територій, що були в окупації та потребують відновлення. Визначено ключові труднощі на шляху до реалізації зеленого відновлення громад на сучасному етапі. З'ясовано та охарактеризовано

принципи зеленого відновлення українських громад. У статті наголошено на тому, що відновлення українських громад як процес повинне мати системний характер та забезпечити довгостроковий результат у формі модернізаційних змін і сталого розвитку України. Стверджується, що повоєнне відновлення повинне не просто являти собою відтворення зруйнованого, а бути орієнтованим на сучасні екологічні запити та вектор європейської інтеграції. Обґрунтовано, що долучення України до Європейського зеленого курсу та подальше його дотримання може стати дієвим інструментом на шляху до зеленого відновлення України.

Ключові слова: територіальні громади, децентралізація, втрати громад через війну, повоєнне відновлення, зелена економіка, Європейський зелений курс, допомога Україні від ЄС, цифровізація

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