IMPLEMENTING AN ECOSYSTEM APPROACH IN PUBLIC ADMINISTRATION: PATHWAYS TO ACHIEVING SUSTAINABLE DEVELOPMENT GOALS AMIDST CRISIS AND RECOVERY

IMPLEMENTAÇÃO DE UMA ABORDAGEM ECOSSISTÊMICA NA ADMINISTRAÇÃO PÚBLICA: ALCANÇANDO OS OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL EM TEMPOS DE CRISE E RECUPERAÇÃO

ВПРОВАДЖЕННЯ ЕКОСИСТЕМНОГО ПІДХОДУ В ДЕРЖАВНОМУ УПРАВЛІННІ: ШЛЯХИ ДО ДОСЯГНЕННЯ ЦІЛЕЙ СТАЛОГО РОЗВИТКУ В УМОВАХ КРИЗИ ТА ВІДНОВЛЕННЯ

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Abstract. The article explores the potential of the ecosystem approach in transforming public administration to meet pressing demands. It examines how the ecosystem framework can guide decision-making and resource management in ways that promote resilience, inclusivity, and sustainability. The research highlights the critical intersections of governance, environmental protection, and socio-economic development, offering a roadmap for aligning Ukraine's reconstruction efforts with global sustainability benchmarks. The study begins by addressing the theoretical foundations of the ecosystem approach and its relevance to public administration. It then investigates practical applications, focusing on indicators and methodologies for achieving SDGs within the context of Ukraine's recovery and ongoing European integration. Finally, it proposes strategies for fostering multi-level governance, stakeholder participation, and adaptive policymaking in a rapidly changing and uncertain environment. By addressing these themes, this article contributes to the discourse on innovative governance practices, providing insights into how an ecosystem approach can reshape public administration to navigate the dual imperatives of crisis response and sustainable development. The authors provide a reasoned classification of key challenges in implementing the ecosystem approach in modern public administration. Based on the challenges, research areas of ecosystem approach in public administration are proposed, and the main research questions of these areas are given. The needs for research in the indicated areas are proven through their correlation with SDGs. The authors propose key indicators for achieving the SDGs in the reconstruction of Ukraine based on the principles of the Ukraine Facility 2024-2027 plan.

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Resumo. O artigo explora o potencial da abordagem ecossistêmica na transformação da administração pública para atender às demandas mais urgentes. Examina como o modelo ecossistêmico pode orientar a tomada de decisões e a gestão de recursos de maneiras que promovam resiliência, inclusão e sustentabilidade. A pesquisa destaca as interseções críticas entre governança, proteção ambiental e desenvolvimento socioeconômico, oferecendo um roteiro para alinhar os esforços de reconstrução da Ucrânia com os parâmetros globais de sustentabilidade. O estudo começa abordando os fundamentos teóricos da abordagem ecossistêmica e sua relevância para a administração pública. Em seguida, investiga aplicações práticas, com foco em indicadores e metodologias para alcançar os Objetivos de Desenvolvimento Sustentável (ODS) no contexto da recuperação da Ucrânia e da integração europeia em andamento. Por fim, propõe estratégias para promover a governança multinível, a participação de stakeholders e a formulação de políticas adaptativas em um ambiente rapidamente mutável e incerto. Ao abordar esses temas, o artigo contribui para o debate sobre práticas inovadoras de governança, oferecendo insights sobre como a abordagem ecossistêmica pode remodelar a administração pública para navegar entre as exigências duplas de resposta a crises e desenvolvimento sustentável. Os autores apresentam uma classificação fundamentada dos principais desafios na implementação da abordagem ecossistêmica na administração pública moderna. Com base nesses desafios, são propostas áreas de pesquisa para a abordagem ecossistêmica na administração pública, juntamente com as principais questões de investigação relacionadas. A necessidade de pesquisa nessas áreas é comprovada por sua correlação com os ODS. Os autores também propõem indicadores-chave para alcançar os ODS na reconstrução da Ucrânia, baseados nos princípios do plano Ukraine Facility 2024-2027.

Palavras-chave: abordagem ecossistêmica; administração pública; desenvolvimento sustentável; gestão de crises e recuperação; governança verde; políticas públicas; guerra e reconstrução pós-guerra na Ucrânia

Анотація. У статті досліджується потенціал екосистемного підходу в трансформації державного управління відповідно до нагальних потреб. Досліджується, як фреймворк екосистеми може керувати прийняттям рішень і управлінням ресурсами таким чином, щоб сприяти стійкості, інклюзивності та сталості. Дослідження підкреслює критичні точки перетину управління, захисту навколишнього середовища та соціально-економічного розвитку, пропонуючи дорожню карту для узгодження зусиль України з відновлення з глобальними стандартами сталого розвитку. Дослідження починається з розгляду теоретичних основ екосистемного підходу та його актуальності для державного управління. Далі досліджується практичне застосування, зосереджуючись на індикаторах і методологіях для досягнення ЦСР у контексті відновлення України та поточної європейської інтеграції. Насамкінець, у дослідженні пропонуються стратегії сприяння багаторівневому управлінню, участі зацікавлених сторін і адаптивному виробленню політики у швидко мінливому та невизначеному середовищі. Звертаючись до цих тем, ця стаття робить внесок у дискурс щодо інноваційних практик управління, надаючи розуміння того, як екосистемний підхід може змінити форму державного управління та служити навігатором дуальних імперативів реагування на кризу та сталого розвитку. Авторами надано аргументовану класифікацію ключових викликів реалізації екосистемного підходу в сучасному державному управлінні. На основі викликів запропоновано напрями дослідження екосистемного підходу в державному управлінні та наведено основні питання дослідження цих напрямів. Потреби в дослідженнях у зазначених сферах доведено через їх співвідношення з ЦСР. Автори пропонують ключові індикатори для досягнення ЦСР у відбудові України на основі принципів плану Ukraine Facility 2024-2027.

Ключові слова: екосистемний підхід; державне управління; сталий розвиток; управління кризою та відновлення; зелене управління; державна політика; війна та повоєнна відбудова України.

1. INTRODUCTION

In the modern era, public administration faces increasingly complex and interconnected challenges, ranging from environmental degradation and socio-economic inequality to political instability and the need for post-conflict recovery. For Ukraine, the ongoing war and its aftermath have amplified these challenges, underscoring the necessity for innovative governance frameworks that can simultaneously address immediate crises and foster long-term sustainability.

The ecosystem approach offers a promising paradigm for public administration, emphasizing the interdependence of natural, social, and economic systems (Voronina et al., 2024). By integrating this approach into governance structures, policymakers can develop holistic solutions that align with the principles of sustainable development. This is particularly relevant as Ukraine pursues its recovery and reconstruction under the "do no significant harm" and "build back better than before" principles, as well as its commitment to achieving the Sustainable Development Goals (SDGs) and harmonizing national policies with European Union standards.

Achieving the SDGs necessitates holistic and integrated strategies that recognize the interdependencies between social, economic, and environmental systems. The ecosystem approach, emphasizing the interconnectedness of ecological and human systems, presents a powerful framework for achieving these objectives. However, the implementation of this approach in public administration is fraught with challenges, making research on these problems both critical and urgent.

The ecosystem approach prioritizes sustainable management of natural resources and equitable socio-economic development while maintaining ecological integrity (Ali Ismail & Abdellatif, 2024; Ivanov et al., 2024; Zahorskyi et al., 2022). Modern public administration is the vehicle through which policies embodying this approach are enacted. However, the implementation of the ecosystem approach in governance is complex due to the necessity of cross-sectoral collaboration, adaptive management, and inclusive stakeholder engagement (Bondar et al., 2022; Lukashev et al., 2022; Zilinska et al., 2022). Research on these issues provides insights into creating more robust frameworks for policy design and implementation.

At the request of the Ministry of Environmental Protection and Natural Resources of Ukraine, the Ministry of Education and Science of Ukraine, scientists of the National Forestry University of Ukraine conducted a thorough analysis of various aspects of the state of the environment and management in this area, substantiated and proposed their own vision of the problems and ways to solve them, which was reflected in the materials of the National Report on the State of the Environment in Ukraine for 2023. I

n particular, specialists of the Department of Public Management and Administration of the National Forestry University of Ukraine prepared materials for section 15.9 "State and Prospects of Scientific Research in the Field of Environmental Protection" (*Materials of public discussion in the Committee on Environmental Policy*, 2024; *Report on the status of implementation*, 2021). It was the study that prompted the staff of the Department of Public Management and Administration of the National Forestry University of Ukraine to develop the research further and work on the research topic "Conceptualization of sustainable development priorities in political-legal reality: the experience of the EU and Ukraine". This article is the result of one of the stages of the aforementioned comprehensive study.

2. THEORETICAL FRAMEWORK OR LITERATURE REVIEW

The issue of how ecosystem thinking is introduced and applied in government organization is of particular relevance at present, so it attracts considerable attention from scientists as it concerns important aspects related to solving the catastrophic environmental problems due to

war in Ukraine. A valuable contribution to the study of this issue has been made by such authors as M. Dziamulych, N. Antoniuk, V. Tretyak, M. Rudenko (Dziamulych et al., 2022a, 2022b), and other authors who focus on the relationship between financial security and sustainable development. The role of effective resource management, investment activity and financial support in achieving sustainable development is analysed.

It is also worth noting the study by I.Britchenko, J.Drotárová, O.Yudenko, L. Holovin (Britchenko et al., 2022), T. Shmatkovska (2022) who consider the relevance of the transformation of approaches to understanding the essence and principles of ecological and economic security in the context of the need to ensure sustainable development (Britchenko et al., 2022).

Also important ones are the works of such researchers as O. Rudenko, O. Mykhailovska, I. Koziura, I. Kolosovska, who define current tasks and long-time priorities of the environmental safety and environmental protection of the national, regional and facility levels, and analyse activities of various social institutions to ensure environmental safety (Rudenko et al., 2022).

In addition, we can note the research of Yu. Polukarov, N. Kachynska, O. Polukarov (Polukarov et al., 2024), O.Zemlyanska, K. Smith, J. Cilliers (Cilliers, 2023), in which the impact of the war on the state of the environment in Ukraine, as well as on the environmental rights of citizens is analysed. These studies determine the environmental damage and ways to bring to justice those responsible for illegal actions against the environment. Environmental pollution also affects the protection of human environmental rights and freedoms, including the right to a clean and safe environment, as the conditions in which some Ukrainians is not completely safe for their health due to air and water pollution.

K. Smith (2022), B. Slay (2022), N. Kalashnyk (2023), as well as R.J.Wenning and T.Tomasi (2022) study changes in public administration in connection with the war in Ukraine. Researchers consider various aspects of the changes, including in approaches and relevance to achieving the SDGs, ways to understand the environmental consequences of the war in Ukraine, economic, geopolitical and environmental impact of the war and the prolonged military threat, etc.

In studying the current state of public regulation of environmental protection in Ukraine and the possibilities of achieving the Sustainable Development Goals, it has been determined that in 2023-2024, significant attention was devoted by the state to improving national environmental legislation. This includes both legislative acts and regulatory documents issued by central executive authorities (*Analysis of Ukraine's implementation of the Framework Convention*, 2024; Fem2forests, n.d.; *Rapid Integrated Assessment*, 2022; *Report on the status of implementation*, 2021; *Resolution of the Cabinet of Ministers of Ukraine*, 2022; *Ukraine rapid damage and needs assessment*, 2023).

While we do not aim to detail their content and main provisions, it is worth noting that more than 70 documents regulating this field were adopted in 2023 and the first half of 2024. Most of them were aimed at aligning Ukraine's national legislation with EU requirements (*EIB and UNDP expand partnership*, 2022; *Ukraine Facility 2024-2027 Plan*, 2024). Particular attention was paid to the development and refinement of the strategic environmental assessment (SEA) procedure and the distribution of responsibilities among central and local executive authorities, as well as local self-governance bodies, in this process.

The proposed research areas provide a broad and multidisciplinary framework for addressing critical questions in the implementation of the ecosystem approach in public administration. These questions are vital for understanding how to build sustainable governance systems, particularly in the context of Ukraine's current challenges, including war, European integration, and efforts to achieve the SDGs.

During the research, the team of authors analysed numerous legislative sources, reports, plans, and analytical materials from central government bodies, local authorities, international organizations, civil society institutions, and others. The study relied on materials available in open access and published on official web resources. Additionally, the authors referred to their own scientific developments and expert opinions in the field of public administration related to environmental protection *(Ideas to Enhance Finance and Funding Capabilities for Municipalities*, 2024; Resolve. 2024; *Strengthening Resilience*, 2024; UN. Department of Economic and Social Affairs. Forest, 2024).

The research received significant impetus from participation in the meeting of the Parliament's (Verkhovna Rada of Ukraine) Committee on Environmental Policy and Nature Management, held on April 8, 2024. The meeting addressed issues related to Ukraine's reconstruction based on European principles of "green recovery". Government bodies and public representatives submitted reports and proposals during the session. This played a crucial role in shaping the ecosystem approach, which is central to our study. All materials were analysed, but this research incorporates only the information disclosed in the Committee's protocols and transcripts (*Materials of public discussion*, 2024).

3. METHODOLOGY

To achieve the main objectives of the article, a mixed-methods approach combining qualitative and quantitative methods was essential. A case study method helped to analyse successful ecosystem-based reconstruction efforts globally to derive best practices. Gathering insights from policymakers, local communities, and experts to assess needs, challenges, and opportunities helped to systematize existing challenges and develop indicators of compliance of the ecosystem approach with the SDGs.

We used qualitative data analysis to track indicators like biodiversity restoration or resource utilization rates. One of the core methods used in the article is policy analysis. It provided an opportunity to evaluate existing legal frameworks and their alignment with sustainable development principles.

4. RESULTS AND DISCUSSION

In our opinion, the implementation of the ecosystem approach into the political decision-making system, the implementation of policies in reality is one of the important problems of modern public administration. The authors' collective offers the authors' vision of key challenges in implementing the ecosystem approach based on theoretical developments and their own experience of implementation. Key challenges in implementing the ecosystem approach are as follows:

- Fragmentation in governance structures. Public administration often operates within siloed structures where different departments manage environmental, social, and economic policies independently. This fragmentation impedes the integrated decision-making required for the ecosystem approach. Research can highlight models of governance that overcome these barriers by fostering interdepartmental coordination and multi-level governance.
- Inadequate data integration and technology. Modern ecosystems are dynamic, requiring real-time data and predictive analytics to inform policy decisions. Many governments, especially in developing regions, lack the technological infrastructure and expertise to integrate data effectively. Research can address ways to bridge these gaps, emphasizing innovations in technology and capacity-building initiatives.
- Stakeholder engagement. The ecosystem approach demands active participation from diverse stakeholders, including local communities, businesses, and NGOs. However,

political, cultural, and logistical barriers often hinder meaningful engagement. Academic studies can identify best practices for inclusive governance and equitable stakeholder involvement, especially in marginalized communities.

- Policy and legislative misalignment. Policies often fail to reflect ecosystem-based principles due to outdated legislative frameworks and short-term political agendas. Research on aligning national policies with SDGs and ecosystem approaches can help governments design laws that prioritize long-term sustainability over immediate gains.

The role of research in addressing challenges cannot be underestimated. Research serves as the foundation for understanding and overcoming the challenges of implementing the ecosystem approach. By examining case studies, pilot projects, and successful models worldwide, researchers can propose scalable and adaptable solutions. For example, studies on integrated water resource management or urban ecosystem planning demonstrate the feasibility of ecosystem-based policies in addressing complex issues like climate resilience and biodiversity conservation.

Moreover, research fosters innovation by exploring how emerging technologies such as artificial intelligence, blockchain, and geospatial analytics can facilitate adaptive governance. It also emphasizes the importance of monitoring and evaluation systems to track progress toward SDGs, ensuring that policies remain dynamic and responsive to changing conditions.

Evidently, such an approach to key challenges in implementing the ecosystem approach is not easy in the interpretation and introduction. We are aware that part of the discussion will be conducted around theoretical methodologies for understanding and content of the ecosystem approach, while the other will focus on applied aspects of implementing the ecosystem approach in the everyday realities of public administration. In both cases, it is difficult to deny the relevance and necessity of research in these areas. Proposed research areas of ecosystem approach in public administration are presented in Table 1.

Table 1. Proposed research areas of ecosystem approach in public administration

No.	Proposed Research Areas	Key Discussion Questions
1.	Methodology of Research on Public Administration	How can adaptive methodologies better address ecosystem complexities? What methodological frameworks are suitable for integrating ecosystem approaches with SDGs in volatile environments?
2.	Methodology of Managing Ecosystems	What are the best practices for managing ecosystems in complex public administration systems? How can an ecosystem perspective redefine the roles of state and local governments in sustainable governance?
3.	Public Administration as a System of Relations	How can multi-level governance models, especially within the EU, integrate ecosystem principles? What mechanisms ensure alignment between industry-specific policies and ecosystem-based approaches?
4.	Democratization of Public Administration Mechanisms	What are the trade-offs between centralization and decentralization in achieving the SDGs? How can democratic mechanisms enhance the ecosystem approach during wartime and reconstruction?
5.	Institutions and Processes of Public Administration	How can public institutions balance immediate national security concerns with long-term sustainability goals? What governance innovations are necessary for ecosystem-oriented recovery?
6.	Public Administration of Regions and Territories	How can ecosystem approaches enhance territorial development and resource management? What are the implications for regional governance under European integration?

7.	Civil Society and Public Activity	How can public control mechanisms support environmental governance? What role do volunteer initiatives play in integrating community efforts with state-driven ecosystem approaches?
8.	Public Finances and Budgeting	How can budgetary practices integrate ecosystem principles for sustainable resource allocation? What lessons from the EU can improve fiscal governance in Ukraine?
9.	Modern Tools for Governance Processes	How can digital tools enhance ecosystem-based public management during crises? What innovations are necessary for post-war governance?
10.	European Integration and Globalization	What are the implications of European integration for Ukraine's public management systems? How can global trends like glocalization influence the adoption of ecosystem approaches in governance?

Source: compile by the authors, based on: *EIB and UNDP expand partnership*, 2022; *Global Forest Goals And Targets*, 2019; *Materials of public discussion*, 2024; The Sustainable Development Goals Report, 2023

In modern conditions, the authors of the research pay special attention to the issue of contribution of research areas to achieving SDGs in the context of war and prolonged military threat in Ukraine. In the context of ongoing conflict and prolonged military threats, achieving the SDGs in Ukraine requires innovative, adaptive, and resilient public administration approaches. Each of the proposed research areas addresses critical challenges and opportunities, offering pathways to integrate ecosystem approaches and drive sustainable governance amidst adversity. Analysis of the current needs of Ukraine shows an urgent necessity for such research in the areas listed above. The areas for consideration are as follows:

1. Methodology of Research on Public Administration. This area fosters the development of adaptable governance strategies that respond to crises and changing conditions. For example, in wartime and post-war contexts, research can identify how digital tools and methodologies can support efficient resource management, disaster response, and governance aligned with SDG 16 (Peace, Justice, and Strong Institutions). Adaptive methodologies also ensure continuity in public services while addressing the broader goals of economic recovery (SDG 8) and societal well-being (SDG 3).
2. Methodology of Managing Ecosystem. Ecosystem-based management frameworks help rebuild critical systems such as energy, water, and food security (SDGs 6, 7, and 2). Research in this area highlights how to manage complex interdependencies, such as the ones between displaced populations and local ecosystems, ensuring sustainable recovery and development. It also supports long-term resilience planning, incorporating climate adaptation and ecosystem restoration (SDG 13 and SDG 15).
3. Public Administration as a System of Relations. This area examines multi-level governance, crucial for coordinating efforts between national, regional, and international actors during conflict and reconstruction. It promotes partnerships that drive SDG 17 (Partnerships for the Goals), ensuring a cohesive response to humanitarian and development challenges. By integrating ecosystem perspectives, it fosters collaborative efforts across sectors, enhancing resource efficiency and sustainability.
4. Democratization of Public Administration Mechanisms. Democratization strengthens societal resilience and inclusivity (SDG 16). Decentralization allows local governments to address community-specific needs during crises, while central oversight ensures strategic alignment with SDGs. Research helps balance these dynamics, promoting trust, participation, and legitimacy in governance.
5. Institutions and Processes of Public Administration. Transforming institutions in response to war and prolonged threats enhances governance systems' adaptability and

effectiveness. Research supports the development of policies that safeguard human rights (SDG 10) while ensuring robust security measures and aligning recovery plans with SDGs such as quality education (SDG 4) and decent work (SDG 8).

6. Public Administration of Regions and Territories. This area focuses on regional development through ecosystem-based approaches, addressing disparities exacerbated by conflict (SDG 10). It supports integrated planning that combines environmental restoration with economic revitalization (SDGs 9 and 15), ensuring balanced regional growth and equitable access to resources.
7. Development of Civil Society Institutions. Civil society plays a pivotal role in fostering social cohesion and community resilience (SDG 11). Research in this area empowers volunteer networks, enhances civic engagement, and strengthens accountability in governance, fostering transparent environmental and economic management (SDGs 13 and 12).
8. Public Finances and Budgeting. Effective financial management ensures resources are allocated to rebuild infrastructure, support vulnerable populations, and promote innovation (SDGs 1, 8, and 9). Research on budgeting practices helps integrate sustainability principles, ensuring long-term viability and alignment with both national priorities and EU standards.
9. Modern Tools for Governance Processes. Digital and innovative tools are essential for efficient governance during crises and recovery. These tools facilitate adaptive planning, real-time monitoring, and data-driven decision-making (SDG 17), enabling governments to respond proactively to challenges and opportunities.
10. European Integration and Globalization. European integration supports policy alignment with SDGs, offering access to funding, expertise, and markets. Research identifies ways to harmonize Ukraine's policies with EU standards, fostering regional cooperation, sustainable development, and resilience against prolonged threats (SDGs 13, 16, and 17).

The author's classification is based on the analysis of sources (*Rapid Integrated Assessment*, 2022; *Strengthening Resilience*, 2024; The Sustainable Development Goals Report, 2023). Each research area contributes uniquely to addressing the intertwined challenges of sustainable development and national resilience. Together, they provide a roadmap for Ukraine to rebuild and thrive, even under prolonged military threats, by aligning governance, recovery, and development efforts with the SDGs.

Since the master plan for the recovery of Ukraine is the "Ukraine Facility 2024-2027" (*Ukraine Facility 2024-2027 Plan*, 2024), the study analysed how it is possible to accelerate and increase the effectiveness of the reforms proposed in the document using an ecosystem approach in public administration.

The Ukraine Facility 2024-2027 is a comprehensive EU-supported framework designed to accelerate Ukraine's recovery, foster economic development, and align the country with European Union standards, particularly in the context of post-war reconstruction and European integration. An ecosystem approach to public administration can significantly enhance the implementation of these reforms by fostering integrated, adaptive, and sustainable governance.

Thus, the authors of this article consider it necessary to address the research direction as Holistic Governance for Coordinated Reforms. An ecosystem approach emphasizes the interdependence of economic, social, and environmental systems. This perspective is vital for the "Ukraine Facility 2024-2027" (2024), as the program encompasses diverse areas such as infrastructure reconstruction, economic stabilization, environmental restoration, and governance reforms. By breaking down silos within public administration, the ecosystem approach ensures coordinated efforts across ministries and agencies, fostering synergies and

reducing redundancies. For example, there can be a rebuilding of infrastructure (a core component of the Facility), which can be aligned with environmental goals like green energy transitions and climate resilience; economic policies can incorporate social inclusion and environmental protection to ensure equitable and sustainable outcomes, etc.

Accordingly, the authors identify the need to orient research to adaptive public administration and local management in a dynamic context. The ecosystem approach integrates adaptive management, enabling governments to respond flexibly to evolving challenges, including prolonged military threats, economic volatility, and environmental risks. The reforms envisaged in the "Ukraine Facility 2024-2027" require this adaptability to address unforeseen challenges while keeping long-term objectives intact. For instance, adaptive policies can ensure that emergency measures taken during reconstruction do not undermine long-term goals, such as achieving SDGs or meeting EU standards or iterative feedback mechanisms can allow authorities to refine strategies based on real-time data and stakeholder input.

We emphasize the importance of exploring the direction of decentralization and local empowerment, based on decentralization - a key principle of the ecosystem approach, which aligns closely with the Ukraine Facility's emphasis on strengthening local governance and regional development. This approach empowers local authorities to take ownership of reforms, tailoring solutions to their specific socio-economic and environmental contexts. Practical benefits include enhanced delivery of public services, especially in war-affected regions, more effective implementation of regional economic development plans, ensuring balanced growth and reducing disparities, etc.

Consequently, the researchers propose prioritizing the investigation of inclusive stakeholder engagement. The ecosystem approach promotes inclusive decision-making by involving all relevant stakeholders – government bodies, businesses, civil society, and local communities. This aligns with the Ukraine Facility's emphasis on partnership and public participation, particularly in areas like designing transparent and participatory budgeting processes for post-war reconstruction or engaging civil society in monitoring reforms, ensuring accountability and trust in government actions.

Authors advocate for directing attention to the research area of environmental sustainability and green transition. One of the pillars of the Ukraine Facility 2024-2027 is fostering a green recovery in line with the European Green Deal. The ecosystem approach directly supports this by integrating environmental considerations into all aspects of governance: strategic environmental assessments SEAs (helps guide infrastructure projects to minimize ecological impact) and policies (helps prioritize renewable energy, circular economy practices, and biodiversity restoration, ensuring compliance with EU standards and contributing to climate goals).

No less important is research on strengthening multi-level governance. The ecosystem approach supports multi-level governance, essential for aligning national, regional, and local policies with EU standards. This ensures that the reforms envisioned in the Ukraine Facility 2024-2027 are implemented effectively across all administrative levels, fostering coherence and reducing gaps in policy execution.

We also would like to focus on system resilience. By treating public administration as a dynamic ecosystem, this approach builds resilience into governance systems, making them better equipped to handle crises, including war-related disruptions and long-term recovery. Key applications include designing infrastructure and economic systems to withstand future shocks and building governance capacity to manage competing priorities during recovery and EU integration.

An ecosystem approach to public administration provides a robust framework for implementing the wide-ranging and ambitious reforms of the Ukraine Facility 2024-2027. By fostering holistic, adaptive, inclusive, and sustainable governance, this approach ensures that

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Ukraine's recovery and integration with the EU are both effective and enduring. It positions Ukraine to not only rebuild but to transform into a resilient, equitable, and sustainable nation aligned with European values and standards.

During the research, we identified five key indicators for achieving the SDGs in the reconstruction of Ukraine based on the principles of "do no significant harm" and "build back better than before", which are provided for in the Ukraine Facility 2024-2027 plan. The proposed indicators are based on an ecosystem approach to public administration (see Table 2).

Table 2. Indicators for achieving Sustainable Development Goals (SDGs) in the reconstruction of Ukraine

Description	Relevance to SDGs	Ecosystem Approach
Green Infrastructure Integration Index		
Measures the proportion of reconstructed infrastructure projects incorporating green and sustainable design elements (e.g., energy-efficient buildings, green roofs, and renewable energy systems).	Supports **SDG 9 (Industry, Innovation, and Infrastructure)** and **SDG 11 (Sustainable Cities and Communities)** while ensuring ecological resilience.	Promotes the use of nature-based solutions and minimizes environmental degradation
Biodiversity and Ecosystem Restoration Score		
Tracks the area of rehabilitated natural habitats, reforested lands, or restored ecosystems damaged by the war.	Aligns with **SDG 15 (Life on Land)** and **SDG 13 (Climate Action)**.	Ensures reconstruction efforts, prioritize ecological balance and biodiversity conservation
Sustainable Resource Utilization Rate		
Monitors the percentage of materials used in reconstruction that are sourced sustainably or with recycling, minimizing waste and environmental harm.	Contributes to **SDG 12 (Responsible Consumption and Production)**.	Reduces ecological footprints and promotes circular economy principles
Community Resilience and Inclusivity Index		
Measures the extent of community participation in reconstruction planning and the inclusivity of vulnerable groups, such as displaced persons and marginalized communities.	Supports **SDG 16 (Peace, Justice, and Strong Institutions)** and **SDG 10 (Reduced Inequalities)**.	Recognizes humans as integral components of ecosystems, ensuring their active role in recovery efforts.
Environmental Impact Mitigation Ratio		
Tracks the number of projects that underwent Strategic Environmental Assessments (SEAs) and implemented measures to mitigate their environmental impacts.	Aligns with **SDG 13 (Climate Action)** and **SDG 6 (Clean Water and Sanitation)**.	Ensures that reconstruction does not harm natural systems and adheres to the "do no significant harm" principle

Source: authors' proposal, based on: *Analysis of Ukraine's implementation of the Framework Convention*, 2024; *EIB and UNDP expand partnership*, 2022; Kalashnyk, 2023; *Materials of public discussion*, 2024; *Strengthening Resilience*, 2024; The Sustainable Development Goals Report 2023.

These indicators reflect the need for a balance between development and sustainability, leveraging the ecosystem approach to guide reconstruction efforts in a way that is inclusive, environmentally conscious, and aligned with global standards.

5. CONCLUSION

The ecosystem approach offers a comprehensive framework for achieving the SDGs, yet its implementation in public administration is hindered by systemic challenges. Addressing these obstacles requires a robust body of research that informs policymaking, fosters innovation, and promotes inclusive and adaptive governance. By prioritizing studies in this area, governments and international organizations can create pathways to sustainability that honor the interdependence of human and ecological systems.

Modern research in the field should be aimed at solving fundamental and applied problems of public administration in accordance with the following main directions:

1. Methodology of research on public administration, including in changing conditions (in the conditions of a digital society, in the conditions of war, in the conditions of European integration, in the conditions of achieving sustainable development goals, etc.).
2. Methodology of managing ecosystems and within the ecosystem (in the complex, as well as managing subsystems separately), the functioning of the state (individual subjects of public power), territorial units from the position of a public ecosystem approach in public administration.
3. Public administration and governance as a system of relations between subjects of sustainable development (by industry or level of management, in the conditions of multi-level governance of the EU or in general).
4. Democratization of public administration and governance mechanisms in Ukraine. Processes of centralization and decentralization of public administration in conditions of war and European integration, achievement of the Sustainable Development Goals.
5. Institutions and processes of public administration: transformations in conditions of war and post-war reconstruction, guaranteeing national security and achieving the Sustainable Development Goals.
6. Public administration of regions and territories (by different sectors or from the standpoint of an ecosystem approach).
7. Development of civil society institutions, formation of a culture of public activity, volunteering, the role of civil society in modern public management and administration, taking into account partnership relations in accordance with the Sustainable Development Goals. Competent public control in the field of environmental protection and other sectors.
8. Management of public finances and budgeting, management of the economy and its sectors in frames of modern framework concepts of public administration (sustainable development, democratization, ecosystem-based, protection of human rights, good governance, leadership, etc.). The system of external and internal budgetary control in Ukraine, its improvement based on the experience of the European Union.
9. Modern tools for implementing management processes: features of martial law, post-war reconstruction, European integration.
10. European integration, Ukraine's accession to the EU. The impact of globalization and glocalization on the processes of public management and administration in Ukraine, the country' achievement of the Sustainable Development Goals (possible sectoral and regional aspects).

The relevance of such research extends beyond academic discourse; it is a practical necessity for advancing global sustainability goals. As the world grapples with environmental degradation, social inequality, and economic instability, the ecosystem approach offers a vision of governance capable of harmonizing these competing priorities, underscoring the urgency of continued inquiry into its effective implementation.

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