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International scientific cooperation and domestic organizational and program mechanisms

Cooperación científica internacional y mecanismos organizativos y programáticos nacionales

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Abstract

This article investigates the integration of international legal standards for scientific cooperation within Ukraine's legal framework, addressing the absence of a consistent doctrinal foundation. It emphasizes the need to harmonize Ukraine's regulatory system with contemporary international and supranational standards, particularly through international treaty mechanisms. While European and American scholars have extensively studied supranational scientific collaboration standards, their practical application within Ukraine's legal and organizational systems remains underexplored. This research fills the gap by analyzing models for implementing a European treaty model, aiming to influence both Ukrainian legal norms and related organizational acts. The study employs a multidisciplinary methodology, including predictive, programmatic, hermeneutic, formal-legal, systematic, and comparative methods, to critically assess Ukrainian legislation and its organizational acts. It identifies significant contradictions and challenges in aligning universal and European scientific standards with national legal practices. Key findings reveal inconsistencies in regulating international agreements, leading to fragmented scientific priorities and limited effectiveness in collaboration. The Ministry of Education and Science, as the main regulatory body, faces criticism for undermining academic freedom. These deficiencies hinder Ukraine's integration into the global scientific community, necessitating urgent reforms to synchronize regulatory frameworks, ensure academic freedom, and enhance the effectiveness of international scientific cooperation.

Keywords: international scientific programs, international scientific projects, science, scientific research, scientific and technical cooperation.

Resumen

Este artículo examina el panorama cambiante de la cooperación jurídica internacional en materia de investigación científica en el derecho ucraniano, destacando la ausencia de un marco estable en la doctrina jurídica. Subraya la importancia de armonizar el sistema regulatorio de Ucrania con el derecho internacional contemporáneo y las normas supranacionales, en particular mediante la cooperación en virtud de tratados internacionales.
A pesar de la literatura existente de académicos europeos y estadounidenses que abordan las normas supranacionales para la colaboración científica, la integración de estos principios en los marcos jurídicos y organizativos de Ucrania sigue sin explorarse. Esta brecha subraya la necesidad de un análisis exhaustivo de los modelos y formatos que podrían implementar de manera efectiva un modelo de tratado europeo para la

investigación científica, lo que repercutiría tanto en el contenido de las normas jurídicas ucranianas como en los actos organizativos asociados.
El estudio se centra en la integración de la cooperación científica supranacional en las regulaciones nacionales, con el objetivo de delinear las especificidades de la implementación de las normas jurídicas internacionales en el marco jurídico interno de Ucrania. Investiga sistemáticamente los desafíos y contradicciones que surgen al alinear las normas científicas universales y europeas con las prácticas legislativas nacionales. Utilizando una variedad de métodos analíticos –incluidos los enfoques predictivos, programáticos, hermenéuticos, formal-legales, sistemáticos y comparativos– la investigación critica los actos organizativos actuales en la legislación ucraniana. Revela inconsistencias significativas en el tratamiento de los acuerdos internacionales y sus implicaciones para las prioridades y la eficacia científicas nacionales.
Los hallazgos indican que el Ministerio de Educación y Ciencia actúa como el principal organismo regulador, pero su supervisión plantea preocupaciones sobre la libertad académica. Además, la falta de sincronización en la regulación de las prioridades científicas y los criterios de eficacia limita el potencial de libertad académica y socava el marco regulatorio necesario para una colaboración científica internacional eficaz. Esta situación presenta un desafío considerable para la integración de Ucrania en la comunidad científica mundial, lo que requiere una reforma urgente.

Palabras clave: programas científicos internacionales, proyectos científicos internacionales, ciencia, investigación científica, cooperación científica y técnica.

Introduction

International legal cooperation concerning scientific activity, technical collaboration, and research remains inadequately defined within Ukrainian legal doctrine. The absence of a stable format and systematic framework significantly hampers efforts to adopt an evolutionary and coherent approach to harmonizing Ukraine's regulatory system with contemporary international law. This issue is particularly pressing given Ukraine's commitments under international treaties and the increasing importance of integrating supranational requirements into domestic governance.

For instance, despite Ukraine's ratification of several international agreements such as the Horizon 2020 and Horizon Europe frameworks, the lack of a cohesive implementation strategy has led to inefficiencies in accessing funding and participating in collaborative research projects. In 2022, Ukraine secured only a fraction of available Horizon Europe grants compared to its European counterparts, underscoring the practical implications of its fragmented regulatory approach.

While significant research exists on supranational standards for scientific and technical collaboration—particularly by European and American scholars—these critical issues have yet to receive thorough examination in the context of Ukraine's regulatory framework. This gap is evident in the inconsistent incorporation of international standards into domestic organizational and programmatic mechanisms, as highlighted by frequent amendments and delays in the adoption of laws regulating scientific collaboration.

In light of these challenges, a systematic analysis of relevant models and formats for implementing a universal and European treaty framework is urgently needed. For example, the European Union's structured integration of the European Research Area provides a proven model that could guide Ukraine in aligning its national policies with supranational standards. Such alignment is essential not only for enhancing research practices but also for modernizing Ukrainian legislation and associated organizational acts.

This article seeks to explore the nuances of supranational scientific cooperation as reflected in Ukraine's legal, organizational, and programmatic regulation of scientific research. Specifically, it aims to elucidate the characteristics of implementing international legal standards within the domestic legal model, examining their evolution, systematic nature, and classification.

To achieve these objectives, the study systematically investigates the paradoxes and challenges Ukraine

has encountered in incorporating universal and European standards into national regulations. For instance, the contradiction between academic freedom and rigid ministerial oversight exemplifies the systemic obstacles hindering progress. Addressing these issues requires a multifaceted approach that incorporates innovative and well-grounded legal, organizational, and programmatic reforms.

The research focuses on the following tasks:

Identifying fundamental challenges Ukraine faces in implementing international standards of scientific cooperation within domestic regulations;
Determining the forms and priorities of integrating international scientific cooperation standards into national frameworks;
Examining the role of organizational and programmatic acts in aligning domestic legal models with global standards;
Outlining the features of managerial and programmatic support for implementing international scientific cooperation standards.

To provide a comprehensive analysis, the article is structured as follows:

Theoretical Framework and Literature Review: This section reviews existing scholarly work on supranational standards for scientific cooperation, highlighting gaps in the current understanding of their integration into national legal systems, particularly within Ukraine.

Methodology: Here, the study outlines the qualitative and exploratory methods employed, including forecasting, hermeneutic, formal-legal, systematic, and comparative analyses. It details the step-by-step application of these methods and the procedures implemented to ensure the rigor and quality of the research.

Results and Discussion: This section presents the key findings from the analysis, illustrating the practical impacts of Ukraine's fragmented regulatory framework with concrete examples and data. It discusses the implications of these results for Ukraine's integration into the global scientific community.

Conclusion: The final section summarizes the main findings, reflects on the study's limitations, and offers recommendations for policy reforms aimed at harmonizing Ukraine's legal frameworks with international scientific cooperation standards.

By addressing these tasks and following this structured approach, the study aims to provide actionable insights into aligning Ukraine's scientific research regulations with international best practices, ensuring effective integration into the global scientific community.

Theoretical Framework or Literature Review

Brief and fragmented considerations on the format and scope of implementing international standards of scientific work into national administrative and programmatic acts can be observed in individual documents from specialized institutions and other UN bodies (Tytska, & Babin, 2023; 2024) These can also be seen in the search for systemic models to counter widespread Russian aggression (Babin, Chvaliuk, & Plotnikov, 2021a; Babin, Plotnikov, & Prykhodko, 2023a; Babin, 2019; Babin, Chvaliuk, & Plotnikov, 2021b). At the same time, existing research works are rather limited in scope.

Among contemporary authors in the USA and the EU, D. Bridget, M. Horvat, N. Ruffin, J. Fickers, T. Flink, and W. Schreiterer have addressed these issues in their works (Bridget, 2012; Fikkers, & Horvat, 2014; Flink & Schreiterer, 2010; Rüffin, 2021; Rüffin, & Schreiterer, 2017). However, these studies do not specifically address the implementation of international standards of scientific cooperation into national programmatic legal sources.

However, these issues were also broadly mentioned in the reports provided by relevant expert institutions to authorized UN Special Rapporteurs, who made their own attempts to reflect these developments (Plotnikov, Chvaliuk, & Babin, 2022; Chvaliuk, Plotnikov, & Babin, 2023), particularly regarding the right to science and related managerial and programmatic activities for systemic scientific research within an international legal dimension. It is noteworthy that the UN Special Rapporteur, Professor Aikaterini Xanthaki, emphasized in her 2024 report, A/HRC/55/44 "The Right to Participate in Science," prepared for the UN Human Rights Council, that the right to participate in scientific activities in its various forms should be guaranteed to all.

The report called for the establishment of numerous, large-scale mechanisms for scientific and policy interaction and for the implementation of special measures to remove obstacles to the exercise of this right. At the same time, the UN Special Rapporteur added that during the formation of national governance mechanisms, scientific freedom should be guaranteed, and a human rights-based approach to science should be applied by all parties at all levels (Xanthaki, 2024). This stance by the UN representative should be considered in analyzing Ukraine’s implementation of international standards of scientific cooperation.

It is also important to note that within the context of report A/HRC/55/44, special attention should be given to its points on the democratization of science and its achievements, as well as on strengthening the protection of scientists, scientific actors, and science itself as a public good. This includes the protection of science from manipulation, misinformation, and disinformation (Xanthaki, 2024). Moreover, the UN Special Rapporteur noted that scientific institutions are underfunded, the space for civil society continues to narrow, and states should therefore develop citizen science programs that engage representatives of all population groups not only in data collection but in all aspects of scientific research, including methodology determination, developmental designs, result analysis, and reporting (Xanthaki, 2024).

In the context of systematically studying Ukraine's implementation of international standards of scientific cooperation, the directives of report A/HRC/55/44 remain highly relevant, particularly regarding the fact that information exchange among scientists and communities includes proposing research topics and presenting views on whether the overall research agenda is advancing in a way that meets the needs of the people (Xanthaki, 2024).

However, the proposals outlined by the UN Special Rapporteur have yet to achieve a cohesive and systematic realization, even within scientific inquiry itself. In the aforementioned report A/HRC/55/44, a key modern document on the international legal dimension of scientific activity, questions of implementing supranational research standards were practically not addressed, aside from a directive for states to establish and support diverse mechanisms of scientific and policy interaction. This should involve decision-making on scientific issues by all relevant stakeholders, including community representatives and researchers across all relevant disciplines, while duly respecting scientific diversity.

Meanwhile, the relevant issues of research implementation are increasingly reflected systematically in the works of contemporary authors who have sought to characterize various aspects of scientific activity in international law, including works by Achermann and Besson (2023), Besson (2023), and Shaver (2010; 2015). Additionally, doctrinal contributions to the right to science itself by Romano and Boggio (2024) are particularly significant.

Critical Examination of Limitations:

Fragmented Focus: Existing studies and reports often lack coherence, focusing on isolated aspects rather than providing a systematic framework for integrating international standards into national governance mechanisms. For instance, while Babin, Plotnikov, and Prykhodko (2023a) explore challenges arising from geopolitical contexts, they do not propose actionable solutions for programmatic legal adjustments.

Limited Applicability: Works by Bridget (2012) primarily focus on established systems within the EU or the USA, making their recommendations less applicable to transitional or developing legal systems like Ukraine's.

Insufficient Practical Examples: The lack of concrete case studies or examples from Ukraine or similar contexts leaves a gap in understanding the real-world applicability of these standards.

Broad Recommendations: The UN Special Rapporteur's report highlights important goals, such as fostering citizen science and protecting scientific endeavors from misinformation. However, it does not address the granular steps required for legal and institutional adaptation in specific jurisdictions.

Global Trends and Connection to the Article's Objectives:

Globally, there is an increasing emphasis on democratizing scientific collaboration and aligning research practices with human rights. The UN's directives advocate for fostering inclusive scientific dialogue and establishing mechanisms that involve diverse stakeholders in decision-making processes. For example, the idea of engaging citizens in all stages of research reflects a growing trend towards participatory science.

Despite these global advancements, Ukraine faces unique challenges in implementing these principles. The lack of a stable legal framework and the underfunding of scientific institutions, as highlighted in Xanthaki's report, exacerbate systemic inefficiencies. These gaps align directly with the article's objectives to:

Identify and address challenges in integrating international standards into Ukraine's programmatic and organizational frameworks.

Propose actionable strategies for harmonizing national practices with supranational norms.
Emphasize the importance of protecting academic freedom while fostering compliance with international cooperation standards.

By critically analyzing these studies and contextualizing their findings within Ukraine's legal environment, the article seeks to bridge the gap between broad theoretical recommendations and practical implementation strategies. This approach ensures that the proposed solutions are both globally informed and locally applicable.

Methodology

This study employed a qualitative and exploratory approach to analyze the integration of supranational scientific cooperation standards into Ukraine's regulatory and legal frameworks. The methodology was designed to address both doctrinal and practical dimensions, ensuring a comprehensive understanding of the challenges and opportunities in harmonizing national legislation with international models.

To predict future regulatory and organizational needs, forecasting and programmatic methods were applied. For example, legislative trends in Ukraine's science policy were analyzed to anticipate necessary adaptations for compliance with European treaties. Historical legislative patterns were triangulated with expert insights to enhance reliability.

Hermeneutic analysis was utilized to interpret legal texts, focusing on aligning international agreements with Ukraine's legal doctrine. Specific clauses of international treaties were examined to clarify their implications for Ukrainian organizational acts, with multiple interpretations compared to ensure objectivity. Complementing this, formal-legal analysis assessed the structure and language of Ukrainian laws, such as programmatic acts issued by the Ministry of Education and Science, to verify compliance with international standards.

To understand the interplay between legal and organizational frameworks, systematic analysis was employed. This mapped how individual norms influence broader regulatory systems. The analysis was peer-reviewed for systemic coherence. Additionally, comparative analysis evaluated Ukraine's frameworks against those of EU member states to identify best practices, selecting models relevant to Ukraine's legal landscape.

Analysis and synthesis techniques deconstructed complex regulations and synthesized actionable insights for reform. For instance, Ukraine's programmatic legal acts were broken down to identify gaps and propose integrated solutions. These findings were cross-verified with primary legal sources and secondary academic analyses.

The study ensured rigor through several procedures: (1) analyzing only verified departmental and programmatic texts; (2) dynamically monitoring regulatory updates to maintain relevance; (3) triangulating findings across methods; and (4) explicitly documenting the methodology and sources.

The research also addressed challenges, such as the uncertainty of unpublished or draft departmental acts, by conducting a systematic review that accommodated evolving regulatory landscapes. This structured, multi-method approach ensured robust conclusions and actionable recommendations for aligning Ukraine's legal frameworks with global scientific standards.

Results and Discussion

It is essential to immediately state that regarding the programmatic regulation of science, the Law of Ukraine "On State Target Programs" of March 18, 2004, No. 1621-IV (Law 1621-IV, 2004) does not provide for any format of interstate target programs, nor does it establish a procedure for foreign or international funding of state target programs. This law includes nationwide programs for scientific-technical development, as well as other scientific and scientific-technical programs.

At the same time, the Law of Ukraine "On Priority Areas of Science and Technology Development" of July 11, 2001, No. 2623-III (Law 2623-III, 2001) does not recognize Ukraine's international agreements as part of the legal foundation for forming and implementing priority areas of science and technology development. Amendments to this law, introduced after 2022, established new priority areas for the development of science and technology until the cessation or repeal of martial law in Ukraine. In this context, only fundamental scientific research on the most significant issues related to the development of scientific-technical, socio-economic, socio-political, and human potential for ensuring Ukraine's global competitiveness is included in the international dimension.

The relevant priorities are also reflected in the List of Priority Thematic Areas for Scientific Research and Scientific-Technical Developments, approved by Cabinet of Ministers Resolution 476 on April 30, 2024 (Resolution 476, 2024). This list adds dimensions such as "Ukraine's national interests in the context of the geopolitical issues of the modern globalized world and the establishment of a new international legal order" and "the development of the national legal system in the context of Ukraine's European and Euro-Atlantic integration." A similar approach to programming in the field of science is found in the Law of Ukraine "On Priority Directions of Innovation Activity in Ukraine" of September 8, 2011, No. 3715-VI (Law 3715-VI, 2011), which essentially does not establish grounds for international scientific cooperation.

Meanwhile, the issue of international programs is mentioned in the Law of Ukraine "On Scientific and Scientific-Technical Expertise" of February 10, 1995, No. 51/95-VR (Law 51/95-VR, 1995). This law mandates such expertise for "interstate scientific and scientific-technical programs implemented based on Ukraine's international agreements within its territory." However, this law lacks a specific international dimension regarding scientific expertise in terms of normative regulation sources or types of expertise. It simply notes that Ukraine's cooperation with other states in the area of scientific and scientific-technical

expertise is carried out under Ukraine's international agreements and that these agreements may establish "rules different from those provided by Ukrainian legislation on scientific and scientific-technical expertise."

Certain Ukrainian government acts still regulate or at least mention the supranational dimension of cooperation in the field of science. For example, the Procedure for Conducting State Attestation of Scientific Institutions and Higher Education Institutions regarding their scientific (scientific-technical) activities, approved by Cabinet of Ministers Resolution 540 on July 19, 2017 (Resolution 540, 2017), requires that information materials for such state attestation include details on international scientific-technical cooperation.

This information should include "the number of specialists who participated in international exhibitions and conferences, underwent internships, or conducted joint scientific research and developments abroad," as well as the number of international scientific-practical events conducted by the scientific institution, the number of foreign grants received, and "the number of projects conducted within EU framework programs for scientific research, development, and innovation, bilateral and multilateral agreements, and projects funded by international foundations and programs."

Following this assessment, all scientific institutions are categorized into one of four groups. Group A should include institutions "whose scientific research and developments are conducted at a world-class level and are of significant national and/or global importance, collaborating internationally and nationally" and "integrated into the global and/or European scientific and educational spaces." Group B should include institutions that "collaborate internationally and nationally and actively pursue integration into the global and/or European scientific and educational spaces," while Group C includes institutions that are "less known in the global scientific community" (Resolution 540, 2017).

Additionally, the Procedure for Forming the Topics of Scientific Research and Scientific-Technical (Experimental) Developments Funded by the State Budget, approved by Cabinet Order 13 on January 11, 2016 (Order 13, 2016), merely requires primary administrators to form these topics considering "global trends in science and technology in relevant fields" and "the market dynamics for science-intensive products worldwide." Similarly, the Standard Regulation on the Collective Use Center for Scientific Equipment, approved by Cabinet Resolution 703 on June 21, 2022 (Resolution 703, 2022), includes in the Center's tasks only "conducting joint research and developments by domestic and foreign scientific institutions" and "facilitating international scientific-technical cooperation."

It is worth noting that the Ukrainian government also aims to take certain organizational steps to facilitate international scientific cooperation, not only through developing norms within the relevant legislation but also based on agreements with the EU.

An example of such efforts is the Regulation on National Contact Points and the Coordination Center for the EU Framework Program for Research and Innovation "Horizon Europe" and the European Atomic Energy Community Research and Training Program (2021-2025), which complements the "Horizon Europe" program, approved by Resolution 214 on February 27, 2024 (Resolution 214, 2024). This document assigns the function of organizing "support and maintenance" for the "Horizon Europe" and "Euratom" programs to a specific employee of an organization with scientific subdivisions or a public scientific organization with legal entity status.

Similarly, the Coordination Center functions for the "Horizon Europe" and "Euratom" programs are assigned to an existing or specially created structural unit of an institution with scientific subdivisions, determined by an order of the Ministry of Education and Science of Ukraine (MESU) at the request of such a legal entity. For competitive selection, MESU establishes a selection commission for national contact points, and the list of national contact points for scientific, scientific-technical, and innovation activities is approved by an MESU order.

Lists of national contact points for other areas are approved by an order of the relevant ministry or department in agreement with MESU based on a written request. At the same time, the Regulation states that the functioning of national contact points must adhere to the standards and guidelines for national contact points approved by the European Commission, particularly in terms of "independence in performing the functions of a national contact point" (Resolution 214, 2024).

The Regulation also sets forth the tasks and functions of national contact points and the Coordination Center, along with general requirements for their activities and evaluation criteria. The funding for the activities of national contact points and the Coordination Center is to be covered by the respective legal entity's own income, with MESU only "ensuring the functioning of the National Portal for International Scientific and Technical Cooperation to host current information from national contact points."

Until 2024, similar mechanisms, albeit with more concise regulation, were established by the Regulation on the National Contact Point for the EU Framework Program for Research and Innovation "Horizon 2020," approved by MESU Order No. 1469 on December 8, 2016 (Order 1469, 2016). However, this order, unlike Resolution No. 214, allowed for the funding of national contact points to be sourced from international technical assistance and other non-prohibited sources.

In this context, it is also important to mention the Procedure for the Competition to Select Representatives and Experts for the Committees Responsible for Monitoring the Implementation of the EU Framework Program for Research and Innovation "Horizon 2020," approved by MESU Order No. 919 on June 23, 2017 (Order 919, 2017), and the Regulation on the Interdepartmental Coordination Council of MESU and the National Academy of Sciences of Ukraine for Cooperation between Ukraine and the European Organization for Nuclear Research, approved by MESU Order No. 1104/580 on September 14, 2016 (Order 1104/580, 2016), which outlined the responsibilities of the international cooperation and European integration department of the ministry (Order 1104/580, 2016).

The current Regulation on the Ministry of Education and Science of Ukraine (MESU), approved by Cabinet of Ministers Resolution No. 630 on October 16, 2014, in its current version, seeks to systematize, to some extent, the competencies of MESU in the realm of international scientific cooperation (Resolution 630, 2014). Notably, Article 2 of this Regulation does not mention international acts among the regulatory sources for MESU's activities, nor does it specify international or foreign grounds for establishing priority directions in the development of science and technology, state-targeted, or scientific-technical programs.

At the same time, this Regulation assigns MESU relevant powers in several areas. These include the integration of domestic science into the global scientific space, organizing cooperation between Ukraine and NATO in the field of science, coordinating international bilateral scientific-technical cooperation, working on the recognition of educational documents, scientific degrees, and academic titles issued in other countries through approval of appropriate procedures, ensuring Ukraine's cooperation with the European Community in education, science, innovation, and technology, and enabling Ukraine's participation in EU research and innovation programs.

The Regulation primarily mentions the conclusion of international agreements in the context of the minister's authority to conduct negotiations and sign international agreements on behalf of Ukraine, as well as represent MESU in relations with foreign and international bodies (Resolution 630, 2014). MESU essentially plays an integral role in any practical steps toward scientific cooperation, as evidenced by Government Resolution No. 1029 of September 6, 2024, on an experimental project for enhancing the autonomy of certain higher education institutions, specifically the National Aviation University, Zaporizhzhia National University, and Vasyl Stefanyk Precarpathian National University (Resolution 1029, 2024).

MESU is designated as the coordinator of this experimental project, and the resolution or the procedure approved by it do not mention any specific competencies of the universities regarding "autonomy development" in an international context. The supranational dimension of cooperation in this document

pertains to references to "receipts in the form of foreign grants, including from non-governmental sources," and the inclusion of foreigners on the "committee for the selection of supervisory board members of the project participants." The procedure specifies that the committee consists of three individuals appointed by MESU and three individuals appointed by MESU based on proposals from international organizations with which Ukraine cooperates in higher education under international agreements. However, the document does not clarify how this relates to ensuring "autonomy" for these universities.

A broader document in this field, approved at the MESU level, is the Procedure for the Registration of International Scientific-Technical Programs and Projects carried out within the framework of international scientific-technical cooperation by Ukrainian scientists, as well as grants provided within such cooperation. The relevant MESU order No. 1507, dated November 20, 2017 (Order 1507, 2017), includes, among other things, the establishment of a corresponding register of international technical programs and projects.

This Procedure defines an international scientific-technical project as a set of interconnected tasks aimed at researching, developing, improving, and implementing scientific and technical achievements conducted jointly by Ukrainian and foreign scientists in accordance with Ukrainian legislation. At the same time, an international scientific-technical program is defined by the Procedure as the organizational framework, established by regulations, for implementing international scientific-technical projects united to achieve a common goal within the priority areas of science and technology development of partner countries. It is clear that, according to the Procedure, projects and programs subject to MESU registration must be formed according to Ukrainian legislation.

The Procedure also defines a grant as financial or other resources provided free of charge by foreign states and international organizations to support the development of the material and technical base for conducting scientific and scientific-technical activities, carrying out specific fundamental or applied scientific research, scientific-technical or experimental developments, including the payment of wages to scientific and academic personnel as part of their work, according to the directions and conditions specified by the grant providers (Order 1507, 2017).

Additionally, the Procedure authorizes the Ukrainian Institute of Scientific and Technical Expertise and Information (UkrISTEI) to handle the technical processing of documents related to the preparation of international technical programs and projects for registration, as well as maintaining their registry, and preparing and issuing relevant informational materials. The Procedure outlines the documentation requirements for submission to UkrISTEI to conduct state registration and accounting of international technical programs and projects, including the required registration card as per the form attached to the Procedure.

The Procedure mandates an annual analysis by UkrISTEI of registered international technical programs and projects, the preparation of relevant conclusions on the state of international scientific-technical cooperation by this institute, and submission of a report to MESU (Order 1507, 2017). In addition to this Procedure, attention should also be given to the model contract form for performing research work based on the results of competitive selections of research projects within bilateral international scientific-technical and scientific-technological cooperation, approved by MESU Order 376 dated March 21, 2024 (Order 376, 2024).

This model contract was developed by the Directorate of Science Development in Order No. 317 dated March 13, 2024 (Order 317, 2024), which also approved the Action Plan for implementing international scientific and scientific-technical programs and projects in accordance with Ukraine’s international agreements under budget program 2201380, "Fulfillment of Ukraine's obligations in the field of international scientific-technical and educational cooperation, participation in the European Union Framework Program for Research and Innovation," in relevant directions and sub-directions for 2024. The Plan includes the titles of relevant programs, regulatory grounds, and funding for 2024-2025, with nine specific funding directions outlined.

For instance, 398 thousand UAH from the state budget is allocated for activities within the International European Innovation Scientific-Technical Program "EUREKA," and another 3,895.9 thousand UAH for the NATO program "Science for Peace and Security." The remaining seven areas cover bilateral intergovernmental scientific-technical cooperation conducted based on corresponding bilateral agreements and the protocols of meetings of bilateral commissions that operate under these agreements.

Thus, 1,990,000 UAH is allocated for Ukrainian-Austrian scientific cooperation, 5,970,000 UAH for Ukrainian-Lithuanian cooperation, 1,990,000 UAH for Ukrainian-Latvian cooperation, 2,985,000 UAH for Ukrainian-Polish cooperation, 1,592,000 UAH for Ukrainian-Turkish cooperation, 796,000 UAH for Ukrainian-Israeli cooperation, and another 5,970,000 UAH for Ukrainian-German cooperation (Order 317, 2024). Notably, some protocols of bilateral commissions regarding the respective funding for 2025 were already signed in 2022.

It should be noted that, unlike these documents, other MESU departmental acts do not provide for external funding or consider the impact of international agreements, programs, or projects. An example of such a document is the Regulation on the Competitive Selection of Scientific-Technical (Experimental) Developments at the MESU by State Order, approved by MESU Order 192 on February 9, 2017, both in its original edition and in the version amended by MESU Order No. 507 on April 12, 2024 (Order 192, 2017).

Conclusions

It can thus be stated that Ukrainian legislation on program management does not regulate aspects of international scientific cooperation and international scientific-technical collaboration. Existing programmatic and organizational acts as part of Ukraine's legislation on science and scientific activities demonstrate significant inconsistency both in defining the role and functions of international agreements on scientific cooperation and in outlining the roles of international programs and projects.

The main regulator in this area is the relevant ministry, which raises considerable debate over the issue of academic freedom. Additionally, national priorities for scientific research, criteria for the effectiveness of scientific activities, and protocols for international programs are largely governed by Ukrainian by-laws, and these are rather inconsistently *coordinated*.

These challenges not only further restrict the practical capacity of domestic institutions for academic freedom but also reduce the effectiveness of the relevant regulatory framework for international scientific cooperation, which is an obviously negative factor in the current conditions.

Further Scientific Research

The aspects of implementing international standards for regulating scientific and scientific-technical activities and scientific collaboration in Ukraine within national programmatic and management documents are of paramount importance. The subsequent evolution of relevant programmatic models, along with their doctrinal, financial, and staffing reflections and content, should become a matter for separate additional scientific exploration.

At the same time, one should not overlook the forms and methods for incorporating the requirements of EU program documents regarding the standards for organizing scientific activities into Ukraine’s programmatic acts (European Union, 2024; European Union, 2003). Moreover, the programmatic dimension of implementing international standards in Ukraine's scientific collaboration processes presents a significant systemic challenge. Concurrently, the current doctrinal analysis of legal program regulation is highly fragmented (Babin, 2008; Babin, Krolenko, & Klochkov, 2010).

The Law of Ukraine "On Scientific and Technical Information" dated June 25, 1993, No. 3322-XII (Law 3322-XII, 1993) provides for a somewhat broader dimension of international interaction. Additionally, this document mentions foreign sources of reference and information funds and foreign scientific and technical information in the list of primary tasks of the national system of scientific and technical information. International cooperation in this area, mentioned in Chapter VI of this law, should occur in the forms of international informational activities and intergovernmental exchanges of scientific and technical information, which must also be coordinated by the national information center. Law No. 3322-XII further refers to the licensing and quota regulation of scientific and technical information that may be used outside Ukraine for the production of weapons, military equipment, and science-intensive products (Law 3322-XII, 1993).

Related to this norm are the requirements of the Law of Ukraine "On State Regulation of Activities in the Field of Technology Transfer" dated September 14, 2006, No. 143-V (Law 143-V, 2006), which meticulously defines the format of international cooperation in the field of technology transfer in Article 5. At the same time, the Law of Ukraine "On Innovative Activities" dated July 4, 2002, No. 40-IV, practically does not mention the international dimension, only including in Article 3 the principles of state innovation policy measures to support international scientific and technological cooperation and mentioning in Article 23 relevant international agreements (Law 40-IV, 2002). Similarly, the Law of Ukraine "On a Special Regime for Innovative Activities of Technological Parks" dated July 16, 1999, No. 991-XIV (Law 991-XIV, 1999) refers exclusively to customs duties in the context of international cooperation.

These conditions only sharpen the relevance of a systematic search for effective forms and models to counter destructive manifestations and provocations from the aggressor state, which should include further review and revision of bilateral programs and projects concluded by Ukraine in the scientific sphere, as well as re-evaluation of the corresponding management activities. This systematic counteraction should also encompass negative trends in European scientific structures, particularly regarding the misuse of relevant programmatic and project models of scientific collaboration (Tytska, & Babin, 2023; Babin, & Chvaliuk, 2021; Babin, Plotnikov, & Prykhodko, 2023b) that have been implemented by Ukraine.

Therefore, the current issue of the subsequent systemic and comprehensive improvement of mechanisms for implementing international standards of scientific work and scientific-technical activities under domestic conditions, to effectively counter such provocations from destructive forces on the international stage (Babin, 2023; 2022a; 2022b; 2024), acquires particular significance. Furthermore, the relevant evolution of the corresponding comprehensive doctrinal development regarding the situation of implementing programmatic and project subcodes standards into national law in scientific activity will obviously influence the dynamics of the scientific foundation for further unconditional processing of special universal and European international agreements concerning the future regulation of scientific activities.

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