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TREATY FRAMEWORKS OF INTERNATIONAL SPACE LAW AND THEIR RELEVANCE FOR KAZAKHSTAN: LEGAL COMPLEXITIES IMPLEMENTATION CHALLENGES AND PROSPECTS FOR REFORM

Abstract

This article examines the evolution of the formation and current direction of international space law, analyzes its fundamental principles and current issues. The principles of peaceful uses of space, non-national appropriation, and international cooperation for the benefit of humanity are described as one of the main pillars of this area of law. At the same time, the study pays special attention to new challenges, such as the widespread participation of the private sector in space activities, the development of space resources, ensuring environmental sustainability, and the threat of militarization of space. In addition, the level of Kazakhstan's participation in international space treaties and their implementation in the national legal system is assessed, and the special status of the Baikonur Cosmodrome, gaps in the national space legislation of 2012, and the inadequacy of regulatory mechanisms are analyzed. Based on the comparative legal method and international experience, the article presents specific recommendations aimed at ensuring Kazakhstan's full compliance with international space law, improving the national space management system, and strengthening the country's role as a responsible space state.

Keywords: international space law, outer space treaty, cosmodrome, space governance, private space activities, environmental sustainability.

Introduction

Over time, space governance has ceased to be an exclusive field of activity of states and has become a complex multi-level space in which scientific research organizations, commercial structures and military entities participate. Such a change complicates the issues related to the legal regulation of space activities and constantly updates their content.

After the beginning of space exploration, a new direction in public international law was formed – international space law (ISL). It was based on such principles as considering outer space as an environment serving peaceful purposes, not allowing any state to appropriate it as an extension of its national territory, and ensuring equal access to space for all countries. Multilateral international treaties concluded within the framework of the UN became the legal basis for this area, establishing mandatory rules and guiding principles aimed at limiting attempts to extend sovereignty into space, strengthening cooperation between states, and keeping outer space free from military conflicts and as a safe zone.

At the same time, the rapid development of technologies, the increase in the number of participants in space activities, and the active involvement of the private sector have clearly revealed a number of gaps and interpretative uncertainties in the existing system of international space law. Although the traditional treaty system provides the main legal framework, it is not always able to fully regulate the specific problems of modern times, such as reducing space debris, coordinating movement in orbital space, developing the resources of celestial bodies, and commercializing space activities. For this reason, scientific and political discussions on the need to reinterpret international space law and develop it in line with the realities of the 21st century are intensifying, but the analysis and debate in this direction in Kazakhstan and Central Asia as a whole are still not sufficiently systematized.

Kazakhstan, as an emerging space state, occupies a unique and complex place in this global legal system. The rich legacy of space exploration left over from the Soviet era and the location of the world's most historically significant cosmodrome, Baikonur, on the territory of Kazakhstan provide the country with unique infrastructural potential. In addition, the special legal and jurisdictional status of the Baikonur cosmodrome under a long-term lease agreement with the Russian Federation, as well as the insufficient development of the national legal and institutional framework regulating space activities, further complicate Kazakhstan's position in the system of international space law.

Kazakhstan has ratified the main instruments of international space law, including the 1967 Outer Space Treaty. However, the issue of fully incorporating the 1972 Liability for Damage Convention and the 1979 Moon Treaty into national legislation has not yet been fully resolved.

The main document regulating the space sector in Kazakhstan is the Law "On Space Activities" adopted in 2012. This law only sets out general rules. It does not clearly and comprehensively define important mechanisms for the state and private sectors, such as licensing, control, supervision and liability. Such legal gaps are particularly important in view of Kazakhstan's goals to strengthen its space capabilities, create a competitive space industry and become active in the international commercial space market.

Kazakhstan's accession to the Moon Treaty [5] places the country among the few states that recognize the Moon and other celestial bodies as the "common heritage of mankind." This principle is important. However, there are still no specific mechanisms for its implementation. There are also political contradictions at the international level. Therefore, it is difficult to apply this principle in practice.

Currently, discussions are intensifying on issues such as the development of space resources, the military use of space, and environmental sustainability. In this context, Kazakhstan's official legal and political positions are not yet fully formed. They are not integrated into a single system. Therefore, the country's position is often expressed only in general terms.

As a result, Kazakhstan's ability to contribute to the further development of international space law is limited. It also has a low potential to effectively protect national interests while a new space order is being formed.

In this context, the article comprehensively analyzes the system of treaties in international space law and their legal and practical significance for Kazakhstan.

The study critically examines the fundamental principles of international space law, assesses the adequacy of Kazakhstan's national legal and institutional mechanisms for implementing its international obligations, and identifies the main challenges and opportunities in the modern space governance system.

The article aims to complement the scientific discussion on the issue of adapting international space law to the conditions of states with emerging space industries at the national level, based on legal and doctrinal analysis, comparative approaches, and policy-oriented recommendations. At the same time, it is aimed at identifying specific areas for strengthening the legal framework of Kazakhstan in the field of space law through alignment with international standards and best practices.

Materials and methods

This study used doctrinal method, formal-legal analysis, and comparative legal method to determine the contractual basis of international space law and its legal and practical significance for the Republic of Kazakhstan. The analysis used a combination of descriptive and analytical approaches.

The sources of the study were based on the main sources of international law. These included the main concepts and norms of international space law, materials from the UN system, as well as non-binding ("soft law") documents prepared by the Committee on the Peaceful Uses of Outer Space (COPUOS) and other international organizations [17].

In addition, the national legal regulatory system of Kazakhstan was also comprehensively examined. The norms of domestic legislation, provisions of the Constitution, and bilateral international agreements were analyzed. Particular attention was paid to the legal features of the agreement with the Russian Federation on the lease of the Baikonur Cosmodrome [11].

As additional sources, scientific monographs, articles in peer-reviewed journals, reports of international organizations, and materials of legal doctrine were systematically studied. These materials allowed to expand the theoretical basis of legal analysis and compare the approach of Kazakhstan with international best practices.

The research methodology also includes elements of comparative legal analysis. This approach was based on the study of examples of other developing space states with experience in forming and reforming national space legislation. The comprehensive use of primary legal sources and scientific literature made it possible to comprehensively and critically assess not only the normative foundations of Kazakhstan's interaction with international space law, but also the main issues arising in the process of its practical implementation.

Results

The analysis conducted in this article shows that Kazakhstan has formally acceded to all the main treaties of international space law. However, the implementation of these international obligations at the national level is insufficient and inconsistent. The existing national legislation, primarily the 2012 Law of the Republic of Kazakhstan "On Space Activities", does not provide the necessary clarity, scope and institutional mechanisms to fully comply with international requirements [10]. In particular, significant legal gaps remain in the areas of allocation of responsibility, registration of space objects, licensing of space activities and regulation of the activities of the private sector. These issues are further complicated by the lack of specially authorized regulatory bodies and the lack of legal personnel specializing in the field. In addition, the unique jurisdictional conditions inherent in the Baikonur Cosmodrome raise unresolved issues regarding the allocation of international responsibility and liability for damage under the Outer Space Treaty and the Convention on Liability for Damage. At the same time, the results of the study show that these shortcomings can be viewed not only as a problem, but also as a strategic opportunity for Kazakhstan. Modernizing the national legal and institutional system in accordance with international best practices will allow Kazakhstan to increase its competitiveness and international reputation as an emerging space state.

According to the authors, comprehensive legal reforms are needed. This includes clarifying licensing procedures. It is also necessary to make liability insurance mandatory. It is also important to introduce environmental protection standards. In addition, it is necessary to create an independent space regulatory body. These measures will reduce legal uncertainty. They will create conditions for the sustainable development of the national space industry.

In addition, active participation in international forums such as COPUOS is necessary. It is also important to support the fair and accessible development of international space law. This will allow Kazakhstan to make a significant contribution to the development of the global space governance system. At the same time, it will help to effectively protect its national interests in the context of the emerging multipolar space order.

Discussion

Origins and Development of ISL

International space law (ISL) began to emerge as a separate branch of international public law in the mid-20th century. This was influenced by technological developments, scientific discoveries, and geopolitical changes. Today, it is rare to find an opinion that does not recognize ISL as an independent direction of international law. On October 4, 1957, the Soviet Union launched the Sputnik 1 satellite.

This event is often cited as the beginning of the "space age." However, the legal and ideological foundations of ISS began to take shape much earlier [12].

For example, in 1903, the Russian scientist Konstantin Tsiolkovsky published a theoretical work on rocket propulsion and the possibility of human space flight. This work opened the way to raising questions about the possible consequences of human activities outside the atmosphere. And in his 1932 monograph, the Austrian lawyer Werner Mandl proposed how to regulate the initial legal issues associated with rocket flights and the transition from airspace to outer space. He outlined the initial structures of the principles of future space law.

During World War II, rocket technology developed rapidly. This was influenced by the German V-2 rocket program. This technology showed great potential. At the same time, its dangerous side was also clearly visible.

After that, discussions intensified on the need to regulate new activities related to space by law. These discussions were held both in scientific circles and at the state level. After the war, the legal status of outer space was often put on the agenda. This is because outer space was not like airspace. It was perceived as a special legal space that did not easily fit into traditional principles based on territorial sovereignty.

The space age began with the launch of the Sputnik 1 satellite. Later, on April 12, 1961, Yuri Gagarin became the first person to fly into space on Vostok 1. These events demonstrated the achievements of science and technology. At the same time, they made it clear that unilateral declarations of sovereignty over space were unacceptable. They showed that it was necessary to establish the principle of the peaceful use of space. It also became clear that an international legal framework is needed to prevent possible conflicts.

The Cold War rivalry intensified these threats. Outer space could become a continuation of military confrontation on Earth [19].

In view of these threats, the UN General Assembly played an important role as the main international forum. In 1958, resolution 1348 (XIII) was adopted. On this basis, the Temporary Committee on the Peaceful Uses of Outer Space (COPUOS) was established [14]. The Committee was to consider legal issues of outer space activities. It was also to study technical and scientific aspects. The Committee was to prepare recommendations on the peaceful and joint uses of outer space by States. On 12 December 1959, resolution 1472 (XIV) was adopted. This document transformed COPUOS into a standing committee. It laid the foundation for a multilateral forum for systematic discussion of space law [6].

Later, these initiatives were supplemented by new resolutions. Of particular importance was resolution 1721 (XVI) of 1961. This resolution reaffirmed that outer space should be used exclusively for peaceful purposes. This requirement also applied to the Moon and other celestial bodies. It also stated that all States should have equal access to space [7]. Such decisions determined the content of the work of COPUOS. The Committee became the leading body for developing the basic norms of international space law. As a result, the 1967 Outer Space Treaty was adopted [1]. Later, other related agreements were concluded. These included the Rescue Agreement [2], the Liability Convention for Damage [3], the Registration Convention [4] and the Lunar Treaty [5]. These documents formed a system of interrelated treaties. They are considered the basis of the modern international space law regime.

Therefore, the formation of international space law cannot be viewed in isolation from history. This development was associated with rapid technological progress. It was also influenced by geopolitical competition. At the same time, outer space was recognized as a special area that required new legal solutions beyond traditional territorial principles.

The basic principles of space law: sovereignty, non-appropriation and peaceful uses of outer space

The normative framework of international space law (ISL) is based on a system of universally recognized principles. These principles guide the actions of States and other key actors involved in the exploration and use of outer space. The fundamental principles include principles related to sovereignty. The principle of non-expropriation (taking from non-national ownership) is also important. There is also a requirement that outer space be used exclusively for peaceful purposes.

These principles form the basis of the mandatory regime enshrined in the 1967 Outer Space Treaty and other related international legal instruments [1]. This framework reflects the international community's opposition to the extension of national territorial sovereignty into outer space. It is aimed at preventing states from establishing unilateral dominance in space.

The Committee on the Peaceful Uses of Outer Space (COPUOS) was established as a permanent body in 1959 [6]. This committee is involved in the development of these principles. It is also one of the main international forums for preventing the militarization and weaponization of outer space.

Kazakhstan's commitment to these principles is particularly important given the location of the Baikonur Cosmodrome on the country's territory. Although Baikonur is primarily used for peaceful space activities, it is also used by the Russian Federation to launch military satellites and carry out missions related to national security. This dual nature of the space infrastructure clearly demonstrates the need to make Kazakhstan's national legal and political mechanisms fully compliant with the requirements of international space law, transparent and robust.

Main international treaties on space law

The treaty framework of international space law is based on multilateral international agreements that regulate space activities from a legal perspective. These agreements are usually discussed and adopted through negotiations within the framework of the United Nations, in particular within the Committee on the Peaceful Uses of Outer Space (COPUOS). Such documents constitute the main pillar of international space law (ISL).

These agreements establish rules that are binding on States. They also contribute to the formation of customary law and the establishment of general legal principles. These norms also provide a common direction for the actions of entities involved in space activities and determine their behavior in a broad sense [13]. The most known international treaties on space law are: Outer Space Treaty of 1967, 1968 Rescue Treaty, 1972 Liability Convention, 1976 Convention on Registration, 1976 Convention on Registration and the 1979 Moon Treaty. Each of the agreements regulates a specific aspect of space activities. Together, they form a developing legal system that is somewhat complex in structure, but sometimes fragmented.

In addition to the core treaties, the international space law system is also supplemented by non-binding ("soft law") documents adopted by the UN General Assembly, COPUOS and other international bodies. Such documents include, for example, the Principles for the Use of Nuclear Energy Sources in Outer Space (1992) [16], the Declaration on International Cooperation in the Exploration and Use of Outer Space (1996), and the Guidelines for the Long-Term Sustainability of Space Activities (2019) [8].

These documents are not legally binding. However, they have a real impact on the development of international space law. They help to establish best practices. They increase transparency. They also provide guidance on regulating new issues that are not sufficiently covered by existing treaties.

It is important for Kazakhstan to actively participate in such initiatives.

Current challenges and trends in international space law

The current system of international space law was formed during the Cold War. At that time, space activities were mainly carried out by states. However, in the 21st century, technology, economics, and geopolitics are changing very rapidly. These changes have brought new challenges to international space law. New space states have proliferated. The private sector has become active. Space debris has increased. Military interests in space have re-emerged. All this is putting severe pressure on the existing system of treaties. Therefore, it is necessary to reassess the normative stability of the ISL. At the same time, the need for its gradual modernization and development has increased. Below are some of the current problems and main trends in the development of the ISL [15].

The growth of commercial space activities and the role of non-state actors

While the state used to play the main role, now private companies and consortia have come to the fore. They are engaged in the development of launch vehicles. They provide satellite services. They develop space tourism. They are also taking initiatives in the use of space resources. But this privatization and commercialization pose new regulatory challenges to the ISL system. Since the system is largely based on interstate obligations.

However, there is a lack of detailed international norms that clearly regulate the licensing, control and liability of private actors. As a result, legal fragmentation has emerged. Different States have adopted different national space laws. They have different licensing requirements. Insurance conditions are also different. Environmental protection standards may also differ. This situation weakens legal clarity. It may also open the way to jurisdictional "arbitrage".

This issue is particularly important for Kazakhstan. Because Kazakhstan is trying to develop a national space industry. It also aims to attract foreign investment. However, the lack of complete and comprehensive national legislation regulating private space activities hinders the development of the market. It also creates additional risks for the state. That is, if damage occurs as a result of the activities of private operators, Kazakhstan may be held internationally liable.

The structure of the ISL was historically shaped as a state-oriented system during the Cold War. But today it faces a new situation. Technological development is accelerating. The economic model is changing. Geopolitical competition is intensifying. These factors put pressure on the adequacy, coherence, and implementation of the system of international agreements. Therefore, the issue of maintaining and modernizing the ISL is on the agenda. Some of the problems and trends in this direction are presented below [19].

Space Debris, Orbital Density and Environmental Sustainability

One of the most pressing issues for ISL is the rapid increase in space debris in low Earth orbit (LEO) and geostationary orbit (GEO). There are now over 30,000 registered space debris objects. In addition, there are also many small particles that pose a threat to operational satellites [15]. However, the current treaty system does not adequately address this problem in terms of prevention. The Liability Convention provides a mechanism for claims in the event of damage. However, it does not explicitly establish mandatory preventive measures to reduce or eliminate debris.

To address this gap, the international community has adopted non-binding "soft law" instruments. These include the Inter-Agency Committee for the Coordination of Space Debris (IADC) Guidelines [9] and the COPUOS Guidelines on the Long-Term Sustainability of Space Activities [18]. These documents provide best practices for space debris mitigation and space traffic management. However, they do not have binding legal force. They also lack enforcement mechanisms.

This topic is particularly important for Kazakhstan. Since space launches are regularly carried out from the territory of our country, it remains an important task to introduce space debris reduction standards into the national licensing and regulatory system.

Militarization and weaponization of space

The Outer Space Treaty prohibits the placement of weapons of mass destruction in orbit or on celestial bodies (Article IV). However, it does not completely prohibit the use of conventional weapons, nor does it completely restrict general military activity [1]. This legal loophole has allowed some states to actively develop reconnaissance, communications, and navigation systems in space. It has also opened the way for the testing of anti-satellite (ASAT) weapons.

In recent years, ASAT tests that destroy satellites have led to a sharp increase in space debris. This has also increased the threat to international security. However, there are insufficient binding international instruments that specifically prohibit such actions or clearly regulate the behavior of states. This situation may increase the risk of conflict.

Kazakhstan is not directly involved in the militarization of space. However, the launch of military satellites from the Baikonur Cosmodrome by the Russian Federation remains a sensitive issue for Kazakhstan. This situation creates additional risks from the point of view of maintaining the principle of peaceful uses of space. Therefore, there is a need to clearly and openly affirm the position on the peaceful use of space in Kazakhstan's national policy.

The use of space resources and the principle of the "common heritage of mankind"

The legal status of space resources is one of the most controversial and unresolved issues in the ISL. The Outer Space Treaty prohibits the conversion of celestial bodies into national property (Article II). However, it does not clearly define how ownership of the acquired resources is to be determined [1]. It states that an international regime for the use of resources should be established (Article 11). However, this treaty has not received widespread support from many states [5].

In recent years, some countries, including the United States and Luxembourg, have been granting private companies ownership of space resources through national legislation. They explain this as not contradicting the principle of non-appropriation. However, such unilateral decisions may affect the integrity of the ISS. They also threaten the principle of equal access.

As a party to the Moon Treaty, Kazakhstan is in a difficult position in these discussions. On the one hand, Kazakhstan is obliged to support the idea of creating an international regime. On the other hand, there is still no clear and universal international agreement. Therefore, Kazakhstan needs to develop a clear national position that aligns its treaty obligations with current commercial trends.

The need for progressive development and regulatory clarification

In connection with the above-mentioned difficulties, there is a growing consensus in both the scientific community and the political level that new steps are needed. In particular, it is proposed to adopt new binding treaties that would specifically regulate the issues of space debris reduction, space traffic management and resource use. At the same time, the need to strengthen existing "soft law" mechanisms and develop confidence-building measures is also often mentioned [19].

Active participation in the work of COPUOS is an important opportunity for Kazakhstan. In addition, participation in regional and bilateral initiatives is also useful. All this creates a real opportunity to contribute to the current development of international space law, taking into account the interests of states that are newly joining space.

International Space Law and Kazakhstan: Issues and Opportunities for National Implementation

The authors argue that Kazakhstan's place in the global space arena is historically significant and strategically unique. The location of the world's oldest and most historically significant cosmodrome, Baikonur, on the territory of Kazakhstan places the country in a unique but also complex position at the intersection of international space activities, geopolitical partnerships, and emerging commercial initiatives. The legacy of the Soviet Union's space infrastructure and Kazakhstan's accession to the main provisions of international space law (ISL) require the state to develop a stable, systematic, and forward-looking national legal and regulatory framework that, while fully fulfilling its international obligations, promotes its national interests.

(1) Accession to the ISS Treaty: the gap between formal commitment and actual implementation

The accession of the Republic of Kazakhstan to the main treaties of international space law means that the country officially accepts the international norms governing space activities. Kazakhstan has assumed a number of important international obligations.

Kazakhstan ratified the 1967 Outer Space Treaty in 1993. In 1994, it ratified the Rescue Agreement. In 1995, it ratified the Convention on Liability for Damage. In 2000, it ratified the Registration Convention. In 2001, it ratified the Moon Treaty.

These steps have strengthened Kazakhstan's obligations. In particular, the obligation to observe the principle of non-appropriation of outer space has been strengthened. The obligation to use outer space for peaceful purposes has also been strengthened. The regulation of liability in case of damage has become important. The obligation to provide assistance to astronauts has been strengthened. In addition, the obligation to participate in the procedures for managing activities related to celestial bodies has also increased.

At the same time, becoming a party to the treaties does not automatically mean that these obligations are fully and effectively implemented in national law. The main domestic document governing space activities in Kazakhstan is the Law of the Republic of Kazakhstan "On Space Activities" of 2012 [10]. This law establishes general principles and is aimed at supporting scientific, technological, and commercial initiatives. But it does not sufficiently specify mechanisms for authorizing, monitoring, and accounting for space activities, especially projects involving the private sector and international partners.

This situation is not unique to Kazakhstan. It reflects a common trend observed in many states actively engaging in space: the regulatory framework has failed to keep pace with technological innovation and commercial expansion.

(2) Legal and institutional gaps in national implementation

One of the most important issues for Kazakhstan is the full implementation of its obligations under the Convention on Liability for Damage and the Convention on Registration at the national level [20]. Kazakhstan is required by international law to maintain a national register of space objects and provide the UN Secretary-General with the necessary information. However, domestic registration procedures, principles of transparency, and mechanisms for public access to data are still not sufficiently developed. As a result, Kazakhstan's ability to fully implement its international obligations is limited. This situation also hinders the management of space activities through an open and accountable system.

In addition, Kazakhstan does not have national rules that comprehensively regulate liability for damage caused by space objects. In particular, mandatory insurance requirements, compensation mechanisms, and dispute resolution procedures are not fully established. Since space activities are

a high-risk sector, the absence of such norms increases legal uncertainty. It can increase the risk of causing transboundary damage both on the ground and in orbit.

The lack of an independent and specialized regulatory body that would conduct licensing, control and supervision of compliance with international space law requirements is a systemic weakness. In addition, the lack of specialized legal knowledge and judicial experience in the field of space law complicates the effective application of ISL norms at the national level.

(3) The Complex Legal Status of Baikonur Cosmodrome

The article would not be complete without addressing this issue. One of the most complex legal issues for Kazakhstan is the jurisdictional and regulatory status of the Baikonur Cosmodrome. In accordance with a bilateral agreement concluded with the Russian Federation in 1994, Kazakhstan leased Baikonur to Russia for space activities until 2050. This agreement allows Russia to exercise extensive operational control over the spaceport. Kazakhstan, however, formally retains its sovereignty. Such a sui generis model creates legal ambiguities regarding who and how bears international responsibility for space activities carried out from Baikonur [12].

In addition, according to the logic of the Outer Space Treaty (OST) and the Liability Convention, Kazakhstan, as a territorial state, cannot completely move out of the category of a "launching state". This situation remains even if launch operations are carried out only by Russian entities. As a result, unresolved questions arise regarding the procedure for dividing responsibility, the duty of control, and the registration of space objects. Although the bilateral agreement seeks to clarify the mutual responsibility of the parties, its norms largely remain at the contractual level. Therefore, it cannot fully exempt Kazakhstan from its international legal obligations to third parties.

(4) Opportunities for legal and regulatory reforms

However, the current situation in Kazakhstan is conducive to reforms. Legal changes are needed. Institutional changes are also needed. Kazakhstan has historical experience in space. The country wants to develop a national space industry. Therefore, the legislative framework needs to be updated. The new legal framework must meet the requirements of international space law. It must also comply with best international practices.

One of the main directions of the reform is the adoption of national legislation that fully regulates the issues of licensing, control and liability for space activities. Here, special attention should be paid to the participation of the private sector. It is also important to attract foreign investment and develop public-private partnerships. A clear licensing system should be introduced. Mandatory insurance requirements should be established. Environmental standards should also be clearly established. Such steps should help to comply with the requirements of international space law and increase the country's investment attractiveness [13].

From the perspective of legal modelling, two priority legislative reforms appear necessary. First, it would be advisable to amend the 2012 Law "On Space Activities" [10] by introducing a separate chapter establishing a comprehensive authorization and continuing supervision mechanism in accordance with Article VI of the Outer Space Treaty, clearly defining the scope of state responsibility for national activities in outer space, including those carried out by private operators and foreign partners from the territory of Kazakhstan. Such a model should incorporate mandatory insurance requirements, detailed liability allocation rules, and transparent registration procedures aligned with the 1972 Liability Convention and the 1976 Registration Convention. Second, taking into account the specific jurisdictional regime of the Baikonur Cosmodrome, Kazakhstan could adopt a special legislative act clarifying the distribution of international responsibility and regulatory control in situations of joint or foreign launches, thereby strengthening national oversight while remaining consistent with existing bilateral agreements. The implementation of these model-based reforms would significantly enhance legal certainty, reduce international risk exposure, and consolidate Kazakhstan's position as a responsible and legally predictable space state.

It is also appropriate to establish an independent and specialized regulatory body that would monitor the implementation of international space law. This body should maintain a register of national space objects. It should also monitor compliance with safety requirements. In addition, it is important to develop training programs on space law for judges, lawyers and civil servants. This will strengthen Kazakhstan's ability to effectively resolve space-related disputes and contribute to the

development of ISL jurisprudence. Finally, Kazakhstan needs to actively participate in COPUOS and other multilateral international forums. This will help the country clarify its national interests. It will allow it to contribute to the formation of internationally binding norms. It will also create conditions for defending the positions of new space states. If Kazakhstan takes a proactive and forward-looking approach to space law and policy, it can turn its historical heritage into a real advantage. Then it can appear as a responsible, innovative and competitive actor in the global space community.

Conclusion

The evolution of international space law (ISL) from its early days in the geopolitical tensions of the Cold War to its current state of facing new challenges related to commercialization, environmental sustainability, and security clearly demonstrates the profound changes taking place in the space sector. For Kazakhstan, which has a rich historical heritage in space exploration and is striving to develop its future space potential, the importance of the main treaty systems of the ISL is not limited to symbolic participation, but is directly related to issues of effective governance, legal responsibility, and national strategic development.

This article has shown that while Kazakhstan's formal accession to the fundamental treaties of international space law is a welcome step, a unified and comprehensive legal regime that implements these obligations at the national level is still insufficient. The existing legislative and institutional frameworks have obvious gaps in key areas such as liability, licensing, environmental protection, regulation of private sector activities, and maintaining a national registry of space objects. These issues are further complicated by the remaining ambiguities regarding the legal status of the Baikonur Cosmodrome, which significantly hinders Kazakhstan from exercising its sovereign powers, regulatory capabilities, and international responsibilities within the ISL [15]. To set up a good system of legal rules for space activities in Kazakhstan, the country's laws need to be better by adding a full liability system for damage caused by space objects. This means that operators must have mandatory civil liability insurance, which means there must be clear limits and procedures for paying to damage, as well as there must be rules for how to settle disputes, including the option of using international mechanisms to protect rights.

To ensure openness and efficient governance, it is also essential to establish clear licensing and legal requirements for the private sector, improve environmental protection measures, such as space debris mitigation, and establish a specialized national regulatory body.

Additionally, by actively participating in international forums like COPUOS, Kazakhstan will be able to improve its standing as a responsible spacefaring state and align its domestic laws with international norms. Kazakhstan's status as an emerging space state provides unique opportunities for reforming and modernizing its national legal system. Drawing on the comparative experience of developed and emerging space states, Kazakhstan can build its own legal model that balances the fulfillment of international obligations, the protection of national interests, and sustainable development. The introduction of clear regulatory standards for private sector space activities, strengthening transparency and accountability mechanisms, and the establishment of a specialized space regulatory body are important steps to strengthen Kazakhstan's space governance system. In addition, the authors believe that Kazakhstan's active participation in COPUOS and other international forums will contribute to the further progressive development of international space law.

Especially at a time when global discussions on space debris mitigation, space traffic management, resource utilization, and the peaceful use of space are intensifying [2], Kazakhstan can play a constructive role in defending the positions of developing and transition economies. In conclusion, the treaty systems of international space law are both a challenge and an opportunity for Kazakhstan. Through careful implementation at the national level, targeted legal reforms, and active and strategic participation at the international level, the Republic of Kazakhstan can not only fully fulfill all its legal obligations under the ISL, but also establish itself as a state that can serve as a model of responsible and effective space governance in the context of the emerging multipolar space order of the 21st century.

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ХАЛЫҚАРАЛЫҚ ҒАРЫШ ҚҰҚЫҒЫНЫҢ ШАРТТЫҚ НЕГІЗДЕРІ ЖӘНЕ ОЛАРДЫҢ ҚАЗАҚСТАН ҮШІН ӨЗЕКТІЛІГІ: ҚҰҚЫҚТЫҚ КҮРДЕЛІЛІКТЕР, ІСКЕ АСЫРУ МӘСЕЛЕЛЕРІ ЖӘНЕ РЕФОРМАЛАРДЫҢ КЕЛЕШЕГІ

Аңдатпа

Бұл мақалада халықаралық ғарыш құқығының қалыптасуы мен дамуы, сондай-ақ оның негізгі қағидаттары мен өзекті мәселелері талданады. Халықаралық ғарыш құқығының негізгі тіректері – ғарыш кеңістігін бейбіт мақсатта пайдалану, иемденбеу қағидаты және бүкіл адамзаттың игілігі үшін халықаралық ынтымақтастық. Зерттеу жеке ғарыш қызметін кеңейту, ғарыш ресурстарын пайдалану, экологиялық қауіпсіздік және ғарышты әскери мақсатта пайдалану тәуекелдері сияқты жаңа қиындықтарға бағытталған. Сонымен қатар, онда Қазақстанның халықаралық ғарыш келісімшарттарына қатысу деңгейі және оларды ұлттық құқықтық жүйеде енгізу бағаланады, Байқоңыр ғарыш айлағының ерекше мәртебесі, 2012 жылғы ұлттық ғарыш заңнамасындағы олқылықтар және реттеуші тетіктердің жеткіліксіздігі талданады. Салыстырмалы құқықтық әдіс пен халықаралық тәжірибеге сүйене отырып, мақалада Қазақстанның халықаралық ғарыш құқығын толық сақтауын қамтамасыз етуге, ұлттық ғарыш басқару жүйесін жетілдіруге және елдің жауапты ғарыш мемлекеті ретіндегі рөлін нығайтуға бағытталған нақты ұсыныстар берілген.

Тірек сөздер: халықаралық ғарыш құқығы, ғарыш туралы шарт, ғарыш айлағы, ғарышты басқару, жеке ғарыш қызметі, экологиялық тұрақтылық.

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ДОГОВОРНЫЕ ОСНОВЫ МЕЖДУНАРОДНОГО КОСМИЧЕСКОГО ПРАВА И ИХ АКТУАЛЬНОСТЬ ДЛЯ КАЗАХСТАНА: ПРАВОВЫЕ СЛОЖНОСТИ, ПРОБЛЕМЫ РЕАЛИЗАЦИИ И ПЕРСПЕКТИВЫ РЕФОРМ

Аннотация

В данной статье анализируется формирование и развитие международного космического права, а также его основные принципы и актуальные проблемы. В качестве фундаментальных основ международного космического права рассматриваются мирное использование космического пространства, принцип неприсвоения и международное сотрудничество на благо всего человечества. Исследование фокусируется на новых вызовах, таких как расширение частной космической деятельности, использование космических ресурсов, экологическая безопасность и риски использования космоса в военных целях. Кроме того, оценивается уровень участия Казахстана в международных космических договорах и их имплементация в национальную правовую систему, анализируется особый статус космодрома Байконур, пробелы в национальном космическом законодательстве 2012 г. и неадекватность нормативных механизмов. На основе сравнительно-правового метода и международного опыта в статье представлены конкретные рекомендации, направленные на обеспечение полного соблюдения Казахстаном международного космического права, совершенствование национальной системы управления космическим пространством и укрепление роли страны как ответственного космического государства.

Ключевые слова: международное космическое право, договор о космическом пространстве, космодром, управление космическим пространством, частная космическая деятельность, экологическая устойчивость.

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