# Modern Challenges to Establishing Global Law on Sustainable Development of Space Activities

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*The article analyses and reveals the socio-economic and technological prerequisites for establishing a global law on the sustainable development of space activities. It is concluded that today global and universal cosmization is in progress, which is connected with the comprehensive integration of space technologies, products, and services into public life, requiring the development of new legal and institutional mechanisms to regulate it. The need to establish a global administrative body, the World Space Union, to regulate commercial space activities is justified.*

*Keywords: global administrator, space, space activities, global administrative law, sustainable development, space commercial activities.*

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## Introduction

Global problems and processes and the entry into outer space are a natural effect of the socio-economic and technological development of civilization. Their success can be achieved through the interaction of all forces and factors working towards the transition to sustainable development. Space activities are of special importance in this process: they extend the boundaries of the existence of our civilization, take the activities of civilization, as well as a number of global problems and processes, beyond the globe. If some of them are not solved on Earth, they will continue their space existence. Accordingly, the "geocentric existence" of globalization will be over, while common human problems will find their extra-terrestrial existence (Ursul, 2013: 152) since they will cease to be only global.

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Academician Vladimir Vernadsky underlines that all processes should be studied comprehensively, and one should not be confined to a single science and should try to understand nature as a whole.

In his work "Noosphere," an outstanding scientist argues that nowadays, the framework of specific science, as a part of scientific knowledge, cannot precisely define the focus of scientific thought of the researcher, precisely characterize his/her scientific work. The issues that are of interest to the researcher frequently do not fall within the scope of the individual established science, consequently not sciences, but the issues are under focus. Modern researchers' scientific thought is deepening with unprecedented success and strength into new fields of knowledge that have not previously existed or have been a pure concern of philosophy or religion. That is, the horizons of scientific knowledge extend, the issues, which have gone beyond the limits of one science, inevitably create new fields of knowledge, new sciences, and increase in the number and speed of its occurrence, characterizing the scientific thought of the 20th century (Vernadsky, 2004: 90).

Therefore, Earth sciences successfully develop using space technologies, as well as new sciences develop along the lines of the Earth ones, but with the space component (for example, space oceanography, areography, materials, and climatology of planets). Moreover, it is important that completely new space sciences are being created that have no analogs to Earth ones (for example, alien research is a discipline that searches and investigates signs of the presence and activities of aliens (extra-terrestrials) on Earth and in circumferential space) (Ufological Dictionary, 2020).

However, in addition to the cosmization of science, the cosmization of global issues and processes occur due to the impact of space assets and factors on their development and consideration. Neither global problems nor economic, scientific, technological, and other contemporary humanity problems are positively affected by space technology. Obviously, the peaceful and sustainable use of space is considered (Ursul, 2013: 162).

However, in addition to a positive impact on the development of humankind, cosmization implies a number of problems that need to be addressed immediately. Therefore, collective responsibility against attempts to make arbitrary use of space technologies increases products and services. For example, the informatization of our lives and the use of artificial intelligence is not still regulated adequately.

This is not a simple increase in the flow of information but a qualitative change in the role of the information itself. The world of people-to-people contacts has become a necessity for everyone. We need information as much as we need material items that help with work or at home. Specialists in medicine and psychology have proved that under conditions of so-called sensory isolation (total lack of information about the outside world) a person quickly loses mind (Alekseenkova, 2009). Nowadays, we have accessible types of communication (television, Internet, various other means), which with the help of space technology and services, have covered almost the entire planet. Therefore, in cases where the rights of some may harm the rights of others, reasonable restrictions on freedom are required.

The global nature of the Internet, its universal accessibility and the amplification impact of online information on the public should be taken into account, as should its potential and the technological properties that empower users, including its being end-user-orientated and decentralized (Benedek & Kettemann, 2013). However, the rules of restriction remain the same according to the principle "that what is applicable offline, is equally applicable online," this

principle was already confirmed in July 2012 by the Human Rights Council in the Resolution "The promotion, protection and enjoyment of human rights on the Internet" (A/HRC/20/8, 2012).

In analogy to offline content, any restriction of online content to be imposed as an exceptional measure must pass a three-part, cumulative test:

a) it must be provided by law, to meet the principles of predictability and transparency;
b) it must pursue one of the purposes envisaged in Article 19 of the International Covenant on Civil and Political Rights, i.e., to protect the rights or reputation of others, or to protect national security or public order, health or morals (International, 1966);
c) it must be necessary and also the least restrictive means to achieve the respective objective (principle of proportionality) (Benedek & Kettemann, 2013).

In addition, the restricting legislation must be applied by an independent body in a non-arbitrary and non-discriminatory way, and there should be adequate remedies against the abusive application of such legislation (A/HRC/17/27/Add.1 (2011).

This is an appropriate manifestation of cosmization of consciousness in politics and law that is the growing sense of responsibility for the fate of all the inhabitants of the planet. Space is only a field of activities. By itself, it does not change or improve moral and legal norms. They change and can only evolve further "through the prism" of social factors. In fact, the moral and ethical problems of space exploration and their discussion to a certain extent precede legal decisions because these issues are first taken up and discussed in the scientific and political community, and the currents of public consciousness are formed, which are known to be ahead of some phenomena in social life.

Therefore, cosmization is a global and universal process related to space technologies, products, services and factors (outer space, space flight, space objects, etc.). Accordingly, contemporary challenges to the regulation of this process exist, and they will be analysed in our work.

## Is a new legal order for space activities required?

Back to the perennial question: Are space relations subject to legal regulation? Who does it, and how? And the real question is, why? On the one hand, the questions are simple and make no sense from the perspective of the legal theory or the international law theory. However, from the perspective of the principles of law, each country must establish legal regimes for the existence, development, protection and preservation of international public goods and achievements, guided primarily by the interests of mankind, rather than relying on a country's own narrow interests. In practice, however, the opposite is mostly true. Despite the fact that democratic and undemocratic States are of a very different State-legal nature, in terms of their conduct in the international arena, particularly in outer space, the difference is insignificant. Each sovereign State defends its interest, while in the context of space commercialization, this is primarily an economic interest.

A striking example of this attitude towards the regulation of space issues by national mechanisms is the Executive Order on Encouraging International Support for the Recovery and Use of Space Resources by the President of the United States, Donald Trump, of 6 April 2020 (Executive, 2020). The Executive Order states that Americans should have the right to

engage in commercial exploration, recovery, and use of resources in outer space, consistent with applicable law. In addition to his intention to encourage commercial space exploration, the President of the United States abandoned the current conventional concept, stating that "Outer space is a legally unique and physically unique domain of human activity, and the United States does not see it as a global commons" (Executive, 2020). Thus, effectively declaring that national legislation is a priority over international legislation in the field of space activities.

Accordingly, it becomes relevant what legal regulation of outer space relations should be: total or liberal? Comprehensive or selective? Or where is the intermediate truth that will ensure the effective management decisions on the admission of human envoys to space and provide them with the necessary conditions for the realization of the goals stated?

As it is mentioned above, the law is the key instrument of long-term strategic change in society. Therefore, the study of the legal aspect of space activities and environmental and legal effects of human space exploration, particularly the critical consideration of existing views in this field, is an important mission. Above all, this is the matter of cosmization of law in terms of sustainable development (Soroka, 2020).

## The role and importance of global space governance at the present stage

It should be noted that space assets are a powerful factor for intensification that can substantially assist in "sustainable" addressing global challenges through the use of outer space, forces and processes that transcend the planet. Scientists and numerous international institutions have repeatedly emphasised that the process of cosmization should reflect the sustainable development of humankind. As a result, a new strategy for space activities (Space, 2018) has been recently formulated. The focus on unsustainable development and environmentally polluting, dangerous, too expensive equipment should be rejected. The future of space activities is associated with ecologically sound socio-natural development (Kazyutinsky, 2009).

The focus on "conquest" and "exploitation" of nature (terrestrial or space) by scientific and technical means without ecological restrictions, on the total replacement of the natural environment of human habitation with artificial one has lost the former attraction in the eyes of most scientists. Nowadays, only a small number of supporters believe that the growing imbalance with the environment characterizes not only the past of human civilization but also its future. The strategy of 'conquest' of nature (including space) should be replaced by a sustainable strategy (Kazyutinsky, 2009).

Some experts argue that modern politicians lack the political will to explain to their citizens the need to avoid increasing consumption for the sake of future generations. Only the onset of a serious crisis, when consumption has to be restricted, will recover humanity from the habit of living beyond their means (Ursul, 2012: 112). This scenario is already being seen as a result of the COVID-19 coronavirus pandemic (Loshytskyi & Soroka, 2020).

Therefore, global governance will require a fundamental transformation of moral and legal norms in view of current challenges. These norms will mostly differ from modern international and national law, traditional and universal moral norms and imperatives, including human stereotypes. It is expected that sustainable development law will become one of the most probable options of not just international, but qualitatively new global law in the transition to sustainable development and corresponding transition to global governance. That is why

two interrelated global processes will evolve in parallel: the globalization of legal systems and processes (national, transnational, and international) and their profound evolutionary and substantive transformation (Ursul, 2012: 123), that is, cosmization of law and society.

It should be noted that two general vectors relate to the start of establishing sustainable development law in the context of cosmization and globalization. This process is associated with the self-regulation of any nation-State of the world that has decided to solve existing problems concerning cosmization of public life via national regulations. That is, the process of regulation can develop either spontaneously or in a planned and targeted manner. In our opinion, only integration of these two vectors of government, regulation, planning, and control can provide a harmonious transition to a new level of the law, both for the whole of humanity and for the individual country (sustainable, safe, environmentally friendly, innovative and inclusive).

A global transition to sustainable development is possible only when it is internationally coherent because a sustainable future will not, in principle, take place in any individual country or group of countries. The global nature of the transition to a new civilizational paradigm requires not just new international relations, but fundamentally new global-stable relations guided by new universal standards, rules and principles, which would constitute a new system (form) of law, the global law of sustainable development. It is the global nature of the new civilizational strategy that demonstrates not only the primacy of an international, transnational legal framework over national (domestic) regulation, although many States have recognized the primacy of international law. This is an obvious feature of future sustainable development law, which will result in adopting the key recommendatory acts — sources of law — which are now the conceptual basis of this new law by the United Nations in its various forums (Ursul, 2012: 123). In turn, the regulations aimed at global commercial space activities will obviously be adopted by the global administrator because in order to resolve disputes in this field, the traditional mechanism does not seem to be sufficient or appropriate. In our opinion, under this critical situation, the concept of global administrative law can be applied.

According to a common definition, global administrative law is a combination of legal rules, principles, and institutional norms applicable to processes of "administration" undertaken in ways that implicate more than purely intra-State structures of legal and political authority. Professors Benedict Kingsbury and Megan Donaldson emphasize that its specificity is that this right is based on the administration, which is carried out within so-called a global administrative space, which contributes to the blurring of national and international, public and private dimensions (Kingsbury & Megan, 2011). Sometimes global administrative law is placed in a space governed by provisions of administrative law beyond the state (López, 2018). This phenomenon is under consideration in our case. For example, Victoriya Pugach argues that administrative activities "can be implemented outside national regulatory framework within the concept of global administrative law, while the status of administrative bodies can be acquired by global and transnational institutions" (Pugach, 2019: 76). This is fully consistent with the challenges that space entrepreneurship poses to humanity.

The first-time normative acts of commercial space law will contain a significant number of flaws and shortcomings and will require constant changes and clarifications. They can be made only through a specially authorized entity — the global space administration body. With this regard, Georgios Dimitropoulos's perception would be appropriate to mention. In his work, he concludes: "Contrary to the traditional (national) understanding of administration, global administration is mostly a rule-making activity" (Dimitropoulos, 2011). In this case, granting

a global commercial space administration body with sufficient rule-making authorities will ensure dynamism and an effective regulatory framework, unachievable if an international treaty is applied.

Different authors put forward different proposals for a global administrative body. For example, Alexander Zyma argues that this body can be formed in different ways: on the basis of an international treaty, on the basis of an intergovernmental agreement of spacefaring nations, as a UN agency, like the World Postal Union, as an open association of entities engaged in the mining industry in space, or as an association under the aegis of an international organization, etc. (Zyma, 2019). The scientist believes it to be particularly attractive to establish this global administrator on the basis of or having regards to the work of the Hague Space Resources Governance Working Group. Obviously, there are opponents. In particular, the formation of another international non-functional bureaucratic body (Kingsbury & Stewart, 2011) will not yield the desired results.

Therefore, we advocate those authors who argue that it would be appropriate to create the World Space Union and empower as a global administrator in commercial space activities with rule-making authority (for example, to establish general rules, standards, rates, quotas for mining in outer space). With regard to the authorities to issue permits for the exploitation of minerals in outer space, registration of entities engaged in entrepreneurial activity in this area, and the space objects through which such activity is carried out, they may be transferred to national agencies, provided that the latter will apply the legal rules of global administrator acts in their permitting and registration activities (Zyma, 2019). This approach will reduce the resistance of spacefaring nations against the creation of a global administrator and against the introduction of global regulation.

Moreover, no consensus exists regarding the settlement of disputes that will arise in connection with commercial space activities. To date, the Permanent Court of Arbitration has adopted the Optional Rules for Arbitration of Disputes Relating to Outer Space Activities based on the 2010 United Nations Commission on International Arbitration Rules with changes in order to provide better service and "reflect the particular characteristics of disputes having an outer space component involving the use of outer space by States, international organizations and private entities" (Optional, 2011). The commercial arbitration model is well suited to the processes in the commercialization of space activities and has great potential for applying its concepts in future commercial disputes.

Therefore, based on national and international law and, to a certain extent, connected with space law, the process mentioned above will gradually become not only international space law but also a global space phenomenon. Nevertheless, this is only the start of the transformation of law. Moreover, it is possible that the so-called "meta-law" (Yorysh, 1978: 65; Udartsev, 2003; Ursul, 2012: 143) may develop as the law intended to regulate the interaction of humanity that has entered space with presumed extra-terrestrial civilizations.

According to lawyers and well-known scientists from other sectors, outer space and cosmization of law become increasingly relevant in our lives and require new views, forms of regulation, and a new space doctrine. For example, in the distant 1960s, French cybernetic Ducrocq, regarding the principle of universal possession of space and celestial bodies, mentioned "a real legal and moral revolution" Furthermore, he argued that "people were unable to agree on the program of organization of the Earth, but the exploration of outer space opens what history could never provide." Indeed, the universality of space applications enables the use of space technology peacefully for people's benefit. This is also one of the

objective "peacekeeping" features of space activities (Ursul & Shkolenko, 1976).

## Conclusions

Despite the ongoing debate on the development of space law, we support the position of those scientists and practitioners who believe that outer space is the province of all mankind. All countries of the world had an equal right freely to explore, develop, and use outer space and its celestial bodies. Space activities in all countries of the world should contribute to their economic development. In turn, scientific and technological progress should contribute to the security, survival, and development of mankind and promote friendly collaboration (cooperation) among the peoples of all countries.

Therefore, the new space doctrine, the global law of sustainable development of space activities, was founded on the extension of boundaries after man's entry into outer space, that had raised many questions for scientists about the nature of law as a special instrument for social engineering of space activities, which is not only a regulator, and a key mechanism for managing the transition of civilization to a sustainable future under the all-encompassing integration of space technologies and services into the daily lives of people. The change in the paradigm of the human perspective on the possibilities of space exploration is the key factor in establishing this space doctrine because the global scientific revolution (cosmization of law) has made this space the province of all mankind. All countries of the world have an equal right to freely explore, develop, and use outer space and its celestial bodies. Space activities in all countries of the world should contribute to their economic development.

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