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THE ARTEMIS ACCORDS AND PROPERTY RIGHTS IN OUTER SPACE

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Abstract

On 13 October 2020, The National Aeronautics and Space Administration (NASA) and the representatives of eight other space-faring nations signed The Artemis Accords. The Accords is a set of 13 provisions to establish international collaboration on sustainable human exploration in outer space. The most controversial provision in the Accords is the provision in Section 10 that relates to exploiting space resources which is not inherent with Article II of The Outer Space Treaty and Article 11 of The Moon Agreement that will cause the implementation of the Artemis Accords may violate international law. The different interpretations in interpreting the provisions in Article II of The Outer Space Treaty raises questions related to property rights in outer space, especially on issues that are related to the extraction of natural resources. This research aims to find how far the Artemis Accords would become a new norm to interpret the Article II of the Outer Space Treaty to regulate property rights in outer space or not, using normative legal research method.

Keywords: The Outer Space Treaty, Space Law, Property Right in Outer Space, Space Resources

A. Introduction

In 2015, the United States government issued the 2015 Commercial Space Launch Competitiveness Act to regulate space commercial activities. In December 2017, President Donald Trump amended the 2010 National Space Policy to redirect the United States space programme to send mankind back to the Moon through Space Policy Directive 1. On 13 October 2020, The National Aeronautics and Space Administration (NASA) and the representatives of eight other space-faring nations signed The Artemis Accords. The Accords is a set of 13 provisions to establish international collaboration on sustainable human exploration in outer space. The Accords itself is a part of the Artemis Program led by NASA.[1] This program was named after the goddess of the hunt, the twin sister of Apollo that was used by NASA on their lunar exploration program.[2] The main purpose of this program is to bring the first woman to the moon by 2024. So far, until July 2022 there are 20 nations signed the Accords.

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[1] Rossana Deplano, "The Artemis Accords: Evolution or Revolution in International Space Law?," *International & Comparative Law Quarterly* 70, no. 3 (2021): 799–819, https://doi.org/https://doi.org/10.1017/S0020589321000142.

[2] Inesa Kostenko, "Artemis Accords and the Future of Space Governance: Intentions and Reality," *Advanced Space Law* 8 (2021): 40–50, https://doi.org/http://dx.doi.org/10.29202/asl/8/4.

In order to implement the program, NASA and the United States need to collaborate with other space agencies and private entities to share their vision to establish a sustainable space exploration. However, the Accords has generated mixed reactions from other space-faring nations like Russia and China. Russia argues that The Artemis Accords is a part of the United States' national program policy for liberalization of space resources while China has still remained silent.[3]

The most controversial provision in the Accords is the provision in Section 10 that relates to exploiting space resources which is not inherent with Article II of The Outer Space Treaty[4] and Article 11 of The Moon Agreement. Furthermore, some scholars believe that the implementation of the Artemis Accords may violate international law. They argue that The Artemis Accords is an attempt of The United States and its allies to gather consensus to make their interpretation of Article II of The Outer Space Treaty to build customary international law.

Outer space is often compared with the high seas due to similar characteristics in international law. Article II of the Outer Space Treaty is a fundamental principle in international space law that contains the non-appropriation principle that prohibits any claim about sovereignty over any part of outer space or any celestial bodies. The non-appropriation principle is the first principle agreed upon during the process of establishing the Outer Space Treaty.[5] However, despite this provision being widely accepted by States, there are different interpretations how States interpret the provision in Article II of The Outer Space Treaty. Article II of The Outer Space Treaty does not refer explicitly to private entities. Nonetheless, at the time this provision was written, only state-actors or government agencies were capable of carrying out space, the participation of private companies in all space activities was not yet considered. Furthermore, the provision in Article VI requires States to authorize and supervise their space activities, regardless the activities are carried out by the private entities.

The different interpretations in interpreting the provisions in Article II of The Outer Space Treaty raises questions related to property rights in outer space, especially on issues that are related to the extraction of natural resources. Is it part of the subject of the non-appropriation principle or not. In s*ensu stricto,* "Non-appropriation" can be interpreted by industrialist countries that land ownership by non-government entities is possible.[6]

The Artemis Accords is an accord that cannot be categorized as hard law so it does not create binding legal obligations on its parties. However,

[3] Deplano, "The Artemis Accords: Evolution or Revolution in International Space Law?"
[4] Walker A. Smith, "Using the Artemis Accords to Build Customary International Law: A Vision for a U.S.-Centric Good Governance Regime in Outer Space," *Journal of Air Law and Commerce* 86, no. 4 (2021): 661–700.
[5] Priyatna Abdurrasyid, *Pengantar Hukum Ruang Angkasa Dan "Space Treaty 1967"* (Jakarta: Bina Cipta, 1977).
[6] Taufik Rachmat Nugraha, "Program Artemis: Tantangan Hukum Ruang Angkasa Di Era Baru," *Veritas et Justitia* 8, no. 1 (2022): 76–108, https://doi.org/https://doi.org/10.25123/vej.v8i1.4388.

many scholars believe that The United States will use this Accords to build customary international law[7] especially on issues that are related to commercialization and property rights in outer space. Many legal scholars believe that The Artemis Accords may violate Article 31 of the Vienna Convention of International Treaty Law. The provision on the section 10 Paragraph 2 of The Artemis Accords stated that '*the extraction of space resources does not inherently constitute a national appropriation*'. The way the United States interprets Article II of the Outer Space Treaty is a new interpretation of Article II of the Outer Space Treaty, and it was different from the one in which it was adopted. Furthermore, this accord raises more questions than solve the problems. Although the United States is not a part of states that have ratified VCLT, the treaty is a part of customary international law and it is binding to all states.

Based on the background above, the article examines the legal status issues related to the property rights of the extraction of natural mineral resources in space and the legal status of the Artemis Accords in international space law.

B. Identified Problems

The development of technology is a leading factor that makes humans are still surviving through the ages. Technology helps us expanding our boundaries to infinity and beyond. Airspace law appeared to regulate human activities that is concerned with air transport operations and all aspect business including our activities in airspace. The development of technology makes what is impossible becomes feasible, it doesn't let us to stand still. Outer space becomes the object of competition of human race.

It started with the moon, the first space age and the rivalry between the United States and the Union Soviet emerged the next branch of international law, which is known as international space law. At that time, the concept of sovereignty in space were still unclear and only a few states have developed technology to launch spacecraft to outer space. Thus, most states entering international treaties governing outer spaces activities have neither space program nor national space legislation and utilize resources in outer space were still far from feasible. At the times, when this Article was written, private operators' activities were limited to contractors and suppliers to government and the only possible participants in outer space activities were States.[8] However, the growing numbers of private entities have surpassed the ability of many states to explore outer space. The involvement of non-governmental entities in the outer space activities has created some legal problems because the term 'non-governmental entities'

[7] Smith, "Using the Artemis Accords to Build Customary International Law: A Vision for a U.S.-Centric Good Governance Regime in Outer Space."
[8] Fabio Tronchetti, *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime* (Leiden: Martinus Nijhoff Publishers, 2009).

as stipulated in Article VI of the Outer Space Treaty is a term that is not well defined.[9]

Over decades, scientists have known that outer space contains natural resources and infinite energy and many believe the outer space resources will help us to end oil dependence. The possibility to mine and use the resources of outer space is certainly more realistic than it perhaps sounds, the development of technology is turning science-fiction into reality. Extra-terrestrial mining is now highly feasible to be exploited. The growing numbers of private space companies and states that want to exploit outer space resources have brought much of the attention to the international community. The growing fear about space mining activities and the uncertainty of legal statutes are the main reason why extra-terrestrial mining has not begun yet.

The five of international space treaties that governing space activities do not contain any specific rules dealing with space mining activities, particularly in the involvement of private entities. The Outer Space Treaty, which represents the most important legal instrument of the system of space law and which establishes principles applicable to all activities to be carried out in the space environment, this treaty does not contain any specific reference to the use of space resources.[10]

In outer space, sovereignty exists in satellite and man-made space objects. Article II of the Outer Space Treaty declares that no States can claim outer space, moon and other celestial bodies as its own. However, this provision has been a subject to different interpretation among international law legal scholars. Some scholars argue that the provision of the Article 2 of the Outer Space Treaty that include the non-appropriation principle does not applicable to private operators. Legal scholars who supports this argument argue that the provisions of the Article 2 of the Outer Space Treaty do not explicitly prohibit private appropriation in outer space.[11] They consider that the provision of Article 2 of the Outer Space Treaty prevents only the national appropriation of outer space, including the moon and other celestial bodies.

But this does not mean that the Outer Space Treaty are not applicable to space mining activities and that is a major reason why the legal status of space mining activities is still unclear. The Moon Agreement that is directly related to the Outer Space Treaty and the treaty itself contains provisions dealing with the exploitation of natural resources in outer space. The Agreement prohibits property rights in outer space, Moon and other celestial bodies. However, the lacks of major space-faring countries that ratified this

[9] Neni Ruhaeni, "Direct International Responsibility of Non-Governmental Entities in the Utilization of Outer Space," *Padjadjaran Journal of Law* 7, no. 1 (2020): 102–20, https://doi.org/https://doi.org/10.22304/pjih.v7n1.a6.
[10] Tronchetti, *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime*.
[11] Ibid, P. 29.

agreement makes this treaty lose its relevance. This is why many scholars believe that this agreement may be considered as a failure agreement.

On October 2020, The United States and eight other states signed a set of 13 provisions to establish sustainable human exploration in outer space known as The Artemis Accords. The accords are a set of principles and guidelines for the peaceful exploration and use of outer space. Although these guidelines do not specifically address property rights in outer space, there is a guideline in Section 10 Paragraph 2 which reference to utilize of space resources. This part is raising a concern in international community regarding interpretation of Article II of the Outer Space Treaty. The Contracting States believe that the guideline in Section 10 Paragraph 2 does not inherently with national appropriation under Article II of the Outer Space Treaty and does not violate international law. However, there is no universally accepted interpretation of national appropriation in utilizing space resources in international law. Does the provision of the Article II of the Outer Space Treaty only prohibit States or does it apply to individuals and companies occupying parts of the moon?

C. Research Methods

The research method used in this study is a juridical method normative, where the author tries to examine and study the materials Primary and secondary legal materials by analysing existing provisions in international law.

In obtaining objective data in writing this article, the author uses data obtained from secondary data consisting of primary legal materials, secondary legal materials and tertiary legal materials. The author conducted a literature study which was intended to study both theoretically and normatively about problems in space exploration activities.

The research specifications in the writing of this article are descriptive-analytical which describe and explain clearly the problems and all provisions regarding the legal status in conducting exploration activities in outer space, especially issue that are related to the regulation of the property right of extraction space resources.

In conducting data analysis related to this research, the author uses qualitative analysis which is intended to get clarity from the problems studied by the author based on international agreements.

D. Research Findings and Discussions

1. Defining the Non-Appropriation in Outer Space

Space law itself emerged with the purpose of protecting and guaranteeing the interests of all states to access space, especially for developing countries that are technically and financially unable to access outer space. Unlike any legal instruments, space law has been set up to respond to the rapid development of outer space

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technology.[12] The Outer Space Treaty is a *magna charta* of international space law. When the treaty was made, the international community feared that the conflict between the United States and Uni-Soviet could lead to disastrous events. The successful launching of Sputnik 1 in 1957 played a key role in the development of international space law. During that time, the basic principles in international space law were laid down. The status of outer space was the main issue that legal scholars dealt with in that period, which led to debate regarding whether sovereignty in outer space was applicable or not.

Article II of the Outer Space Treaty contains a fundamental principle in international space law known as the non-appropriation principle. Under Article II of the Outer Space Treaty, no state has the right to claim sovereignty in the moon or celestial bodies. This principle prohibits national appropriation in outer space by any means. This principle is the first principle agreed by States when it was adopted and it also appears in United Nations Resolutions 1721 and 1962.[13] This principle also can be found in Article 11 of the Moon Agreement that restricted the appropriation of outer space and celestial bodies. Although this principle was the first principle agreed by States during it was discussed, many scholars have different interpretations to interpret the provisions of Article II of The Outer Space Treaty. This principle was challenged by 8 developing states, including Indonesia which claimed that geostationary orbits above their territories were part of their territorial sovereignty. This claim was declared in Bogota, Colombia and known as the Bogota Declaration. However, this claim was not successful and ensured it strengthened the legal impact of Article II of the Outer Space Treaty.[14]

The character of the legal nature of the Article II of the Outer Space Treaty is lying under the *res communis ominium.*[15] Coupled with the provision on the Article I of the Outer Space Treaty, Article II of the treaty ensures to protect outer space from harmful activities so all mankind could benefit from the use of exploration of outer space. The principle is a part of customary international law that becomes a basic rule for states to oblige their activities in outer space. The provisions are reaffirmed in Article 11 of The Moon Agreement which is directly related to Article II of the Outer Space Treaty that restricts national appropriation in outer space.

For many decades, scientists believe that outer space, asteroids and other celestial objects contain natural resources and infinite

[12] Ruhaeni, "Direct International Responsibility of Non-Governmental Entities in the Utilization of Outer Space."
[13] Tronchetti, *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime*.
[14] Ibid, P. 26.
[15] Ibid, P. 27.

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energy and many believe the outer space resources will help us to end oil dependence. The possibility to mine and use the resources of outer space is certainly more realistic than it perhaps sounds, the development of technology is turning science-fiction into reality. Extra-terrestrial mining is now highly feasible to be exploited. The growing numbers of private space companies and states that want to exploit outer space resources have brought much of the attention to the international community.

The Artemis Accords is a framework to pave the way to mining natural resources in outer space. From the perspective of international law, The Artemis Accords are not binding legal instruments, however, these accords could have lasting influence on development of international space law and customary international law. Section 10 of the accords provides a provision that states "that the extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty". This provision sparks the most debate of the accords. The provision on the Article VI of the Outer Space Treaty requires States to supervise private entities on their activity in outer space. The Outer Space Treaty does not directly forbid the extraction of space resources. However, the provision on the Section 10 (2) of the Accords interpreted the Article from a different perspective, stating that "*the Signatories affirm that the extraction of space resources does not inherently constitute national appropriation.*"[16] Proponents of this argument have interpreted Article II of the Outer Space Treaty in a unique interpretation; they argue that the provision on Article II of the Outer Space Treaty only prevents territorial sovereignty and does not cover the property rights of the extraction of space resources. The Moon Agreement contains a specific provision for States to extract mineral samples from the surface or subsurface of the Moon and other celestial bodies. This provision, specifically stated in article 6 (2) of the Moon Agreement, where this agreement provides that:

> *In carrying out scientific investigations and in furtherance of the provisions of this Agreement, the State Parties shall have the right to collect on and remove from the Moon samples of its mineral and other substances. Such samples shall remain at the disposal of those State Parties which caused them to be collected and may be used by them for scientific purposes. State Parties shall have regard to the desirability of making a portion of such samples available to other interested State Parties and the international scientific community for scientific investigation. State Parties may in the course of the scientific*

[16] Section 10 Point 2 of The Artemis Accords

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investigations also use mineral and other substances of the Moon in quantities appropriate for the support of their missions.

Some scholars argue that the non-appropriation principle does not refer to regulating private appropriation in outer space.[17] However, the majority of scholars argue that private property of outer space is prohibited by any means. When this Article was adopted, States were the only subject in international space law that was possible to make activity in outer space. At that time, the private sector activities in outer space were limited to the role of contractors and suppliers for governments and private entities were not feasible to make exploration in outer space.[18] Nonetheless, the rapid development of space technology in private sectors has made their role feasible to make activity in outer space.

The non-appropriation is a fundamental principle in international space law to determine whether it permits resource extraction or not. The treaty does not provide a comprehensive guideline regarding property rights of the extraction of space resources. However, the Moon Agreement, which lays out more regarding the exploitation of space resources failed to make an attempt to solve this issue.

The scholars are concerned with this principle to ensure that outer space is a part of territories that are recognized in international law as *res nullius* or *res communis*. This principle appears in article 1 of the Outer Space Treaty, known as the province of mankind and article II. It was not until the term common heritage of mankind used in the law of the sea and also can be found in the article 1 of the Moon Agreement, these two principles are now primarily a political problem that makes space mining activities are legality constrained.

Legal scholars are divided about the provision on this article. The majority of legal scholars consider that the provision of this article prohibits the national-appropriation and private property of outer space. Otherwise, some of legal scholars consider that the article II of does not prohibit the appropriation of outer space by private entities. Therefore, the absence of any reference to private appropriation in Article II does not mean that private entities are allowed to obtain property rights in outer space or over its resources.

Many scholars argue that the different interpretation the Article II of the Outer Space Treaty in the Artemis Accords may violate Article 31(3) of VCLT relating to interpretations in customary international law, especially in area that related to property rights from the extraction of natural resources in outer space. Customary international law plays an important role in international law regimes.

[17] Tronchetti, *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime*.
[18] Ibid, P. 29.

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This can be seen from the adoption of customary international practice as one of the sources of international law, which is stated in Article 38 of ICJ Statue. Therefore, the broader of these agreements being adopted, the more possible the Artemis Accords can become customary international practice if it fulfils two main elements in the formation of a customary international practice, namely the practice of countries in carrying out these customs and juris opinion.[19]

2. State Responsibility and Responsibility of Non-State Actor Entities

It has been recognized that States would have to accept international liability for any damage or injury they cause to third parties through the conduct of space activities.[20] When the Outer Space Treaty was adopted by United Nations, there were two space-faring nations that launched space objects to outer space, the United States and the Union Soviet. At the time, there were no international joint efforts, even without the participation of the private sector, in space activities.[21] The rapid development of outer space technology has made private entities becomes feasible. The fact that non-governmental activities only have indirect international responsibility may lead to create difficult and complicated mechanism, especially if the non-governmental entities are Multinational Corporations.[22] The existing international space law does not contain specifically commercialization of outer space, without a legal protection, private commercial activities in outer space is a risk activity. In this context, it is important to analyse the predominant legal issues from the existing principles of space law that affect decommercialization of the space sector.[23]

The Liability Convention was the first United Nations space law instrument to introduce the concept of a "launching State". Article I define a "launching State "as a State that:

I) Launches the space object
II) Procures the launching of a space subject
III) Provides the territory for the launch; or
IV) Provides the facility for the launch[24]

This agreement contains specifically any damage caused to the nationals of the launching State and to foreign nationals invited to participate in the launch. These provisions are clear that it is possible that the term of "launching state" have more than one launching State

[19] Atip Latipulhayat, *Hukum Internasional: Sumber-Sumber Hukum* (Jakarta: Sinar Grafika, 2021).
[20] Ricky J. Lee, *Law and Regulation of Commercial Mining of Minerals in Outer Space* (Dordrecht: Springer, 2012).
[21] Ibid, P. 136.
[22] Ibid.
[23] Ruhaeni, "Direct International Responsibility of Non-Governmental Entities in the Utilization of Outer Space."
[24] Liability Convention, 1972

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for each space object. For example, a satellite owned by Indonesia and to be operated by a United States private concern. This satellite to be launched by a Russia launch operator from a Kazakhstan facility located in Uzbekistan may result in Indonesia, United States, Russia and Kazakhstan all being regarded as launching States. The Liability Convention imposes joint and several liability on the multiple launching States and each may present claims for indemnity or contribution from other launching States or to apportion their liability by agreement.

However, the legal issues concerning the involvement of private entities in outer space is still unclear, despite the fact that the development and the involvement of private entities in outer space is being increased in the last two decades.

E. Conclusions

The last two decades is a proven that the rapid development of technology in outer space has evolved the nature of actors in outer space activities. The increasing number of private companies has increased commercial activities likes space tourism and space mining and attracted private sectors and investor to invest in outer space industry. However, the uncertainty of the legal status of space mining makes the activities are not started yet. The different ways of interpreting the non-appropriation on The Artemis Accords are the main issue why the uncertainty and disagreement on the legal value of this principle are still unclear. Nevertheless, the arrival of private entities in the exploration of outer space leads to conclusion that international community need an international legal framework to regulate space mining activities, particularly that relates to private entities.

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