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Legality of Ownership of Asteroid Mining Results in Space Based on International Law Arrangements

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Abstract
Asteroid mining is a proposed solution for mining elements that are commonly obtained from conventional mining as we know it today. However, until now there are no Indonesian laws and regulations, nor international agreements that directly regulate what rights miners of space resources will have. Without certainty about what property rights exist in extracted resources, the incentives to extract these resources will be greatly reduced. The research method in this journal uses a statutory approach, examining the statutory regulations concerned with the legal issues raised, and a conceptual approach, namely an approach based on legal concepts related to the legal issues at issue. Based on the facts found, it can be concluded that the concept of property rights exists and is recognized in the space law regime, even in the absence of territorial rights over celestial bodies, although its application to resource extraction remains a contentious issue.
Keywords: Mining, Asteroids, Ownership, Space, Outer Space Treaty, Moon Agreement, UNCLOS 1982

Introduction

Human efforts to carry out asteroid mining have now reached a point where its implementation still requires expensive costs, takes a lot of time and is risky, but has the potential to generate enormous profits. Space mining companies that invest very large amounts with high risks certainly want assurance regarding the status and ownership scheme of mining materials that are brought from space to the earth's surface.(Fan et al., 2023)

Until now, there are no Indonesian laws and regulations, as well as international legal arrangements that directly regulate what rights miners of space resources will have. Moreover, regarding the legality of asteroid or Moon mining under existing national laws and international treaties, raises the urgency of setting up a proprietary scheme before the mission comes to fruition. Without certainty of what property rights exist in the extracted resources, the incentives to extract these resources will be greatly reduced.(Lauer, 2023)

To some, asteroid mining may sound like the unlikely premise of a fictional novel. But for others, it sparks a fantastical idea that may come to fruition in years to come. Asteroid mining, for now, is still a pipe dream for researchers, but that doesn't mean it can't be achieved. Today many companies have plans to send rockets into space with extraordinary financial support. However legal issues related to asteroid mining must be addressed before this plan can be implemented. Asteroid mining is a proposed solution to mine elements that are usually obtained from conventional mining. Due to the difficulty of asteroid mining, some companies or governments are currently considering asteroid mining. Currently, only one company, *Planetary Resources,* is conducting research on the technologies and strategies needed to make asteroid mining economical. Research so far into the composition of asteroids confirms that these asteroids may contain many important elements, such as elements of the platinum group.(Srivastava et al., 2023)

Apart from the fact that asteroid mining is seen as more environmentally friendly, this asteroid also has a very high value. An example is the asteroid with code 2011 UW-158 which crossed the earth on July 12 2015. The asteroid is estimated to cost more than 3 trillion euros because the asteroid contains more than 100 billion tons of platinum. Planetary Resources estimates that one platinum-rich asteroid 30 meters long can contain $25 to $50 billion USD worth of platinum in 2012.(Cannon et al., 2023) Not only the 2011 UW-158 asteroid, there are also other asteroids that have billions of dollars to trillions of dollars in value. 5It became very clear that once the right infrastructure is in place, there is potential for significant gains. Currently, research on the feasibility of human and robotic missions to asteroids is being carried out by government organizations, such as JAXA and NASA, as well as private companies such as SpaceX. Asteroid mining is currently only considered as a long-term solution, because currently the infrastructure and techniques needed to explore asteroid resources are still under development. Making short-term planning for asteroid mining activities impossible for mining companies. However, in order to support this activity, countries are competing to provide a forum in the form of legal rules with the aim of encouraging space exploration.(“Impact of Asteroid Mining on Global Equity Based on Two-Level Fuzzy Comprehensive Evaluation Model,” 2023)

As an example in the United States, in 2015 the United States Government established *the US Commercial Space Launch Competitiveness Act* (HR 2262), which is the US Commercial Space Launch Competitiveness Act, which includes *Title* IV, which contains provisions regarding ' *Space Resource Exploration and Utilization* '. One of the provisions contained in the regulation reads as follows: *"A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to possess, own, transport, use and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States"*.(Cowan et al., 2023)

In short, it means that every citizen of the United States who is involved in the commercial use of asteroid resources or space resources under this chapter has the right to own, possess, transport, use and sell the obtained asteroid resources or space resources in accordance with applicable law, including the international obligations of the United States. This

arrangement is consistent with Article I of *the Outer Space Treaty* which is widely adopted, that: *"The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigations* ".

Issues regarding exploration and state sovereignty in space have been debated even before the formation of *the Outer Space Treaty*. Even before 1960, there were a number of comments on the question "is it possible for a terrestrial nation-state to acquire sovereignty over all or some of the natural celestial bodies, and what would be required under existing law to make such a claim legally valid". This analogy is based on the previous practice of states trying to assert sovereignty over parts of the Earth's surface, for example, through discovery, occupation, and so on.

Literature Review

The 1967 Outer Space Treaty supports the concept of the use of space, but does not mention the use of space resources. This raises doubts about the legality of mining activities in space which have not been regulated in international agreements. As well as the principle of non-appropriation which prohibits states from claiming sovereignty over astronomical objects, it is also a further question whether mining activities in outer space are justified under the provisions of International Law.(Li, 2023)

The 1967 Outer Space Treaty supports the concept of the use of space, but does not mention the use of space resources. This raises doubts about the legality of mining activities in space which have not been regulated in international agreements. As well as the principle of non-appropriation which prohibits states from claiming sovereignty over astronomical objects, it is also a further question whether mining activities in outer space are justified under the provisions of International Law.(Marino & Cheney, 2023)

Another ambiguity contained in the *1967 Outer Space Treaty* is whether the principle of non-appropriation has any connection with the creation of property rights. In this case, the question arises whether corporations wishing to carry out mining activities in order to own these minerals may have difficulty determining ownership of the space sector itself? With regard to "exploration and use", the provisions of Article 2 of the *1967 Outer Space Treaty* state that there is a prohibition for national appropriation of space objects. However, when further interpreted, individual appropriation may not be prohibited.(Coustenis et al., 2023)

Research methods

The approach used in this research is a conceptual *approach* in which the researcher examines and studies the doctrines. In the form of the views of legal experts in various legal systems in each country to get ideas and understanding of the notions, concepts, principles, or

applicable legal principles that are currently recognized in national and international law related to the ownership of asteroid mining products.

The second approach is in the form of a statutory approach. The statutory approach is an approach that is carried out by taking an inventory of and examining the laws and regulations in various countries, and looking at their correlation with regulations in international law relating to the topic of the issues raised, being investigated, namely the legality of ownership of the results of asteroid mining in space based on international law arrangements.

Results and Discussion

Outer Space Treaty 1967

International space treaties were drafted at a time when space activities were confined to the United States, so they were not intended for private commercial activity in outer space. One such international treaty is the *1967 Outer Space Treaty* which is considered the global foundation of the space law regime. *Outer Space Treaty 1967* has provided basic arrangements and limitations on space exploration and exploitation by prohibiting certain activities and emphasizing aspects such as the application of the principle of *common heritage of all mankind* or which means the inheritance of mankind. These agreements are useful in highlighting the global nature of outer space. However, at the same time, they are insufficient and ambiguous in providing clear regulations for newer space activities such as asteroid mining.(Gilbert, 2023)

Based on the premise of " *res communis",* *The 1967 Outer Space Treaty* described outer space as the province *of all mankind* for all mankind. Under Article I, States are free to explore and use outer space and access all celestial bodies on an equal basis and in accordance with international law. Although *the 1967 Outer Space Treaty* makes no explicit mention of "mining" activities, under Article II, outer space including the Moon and other celestial bodies "is not subject to any national usurpation by claims of sovereignty" through any use, occupation or other means. As for the *1967 Outer Space Treaty* , the countries involved did not seriously consider the possibility of commercial exploitation of outer space, so the concept was basically not considered. Not even the term "exploitation for commercial purposes" is found in the treaty, although most experts would agree that any reference to freedom of use in Article I would include commercial exploitation.(Olsson-Francis et al., 2023)

Article II *Outer Space Treaty 1967* stipulates that: " *Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.* " The provisions of Article II *of the Outer Space Treaty 1967* prohibit claims of sovereignty by using or occupying, or in any other way in outer space, including the moon or other celestial bodies. The clause defines outer space as 'common property', meaning that it is a territory that is not subject to the property of any country, nor is it subject to national appropriation, but is free to be accessed by all countries, so long as they comply with applicable international legal rules. In other words, this provision indicates a prohibition on colonization anything-that in exercising territorial sovereignty over a piece of land as if it were the outermost part of the homeland and exercising complete and exclusive jurisdiction over it. Arguments in support of mining activities and the right to ownership of mining products are often linked to Article II. The provisions of this article

emphasize the nomenclature of outer space, the moon, and other celestial bodies." In this case, it can be interpreted that resources, in the form of metals or other materials, are not considered in the provisions of Article II. If this argument is justified, then any application the prohibition on space exploitation imposed under Article II cannot be justified.(Bower & Lantis, 2023)

It is for this reason that the extraction of natural resources for commercial purposes by states must be permitted by and under Articles I and II of the Space Treaty. An important point in setting Article I lies in the words " *exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries* " that efforts to explore and exploit outer space must be carried out in accordance with the interests of all countries. This means that there are clear boundaries that space and all objects in it belong to all human beings, and all or part of it cannot be claimed by the state. Any claim of sovereignty or forced occupation of a country is an act contrary to global interests.(He, 2023)

Article VI provides for the direct and full responsibility of states with respect to private space activities, including asteroid mining, and requires them to be subject to "continued authorization and supervision." carried out by them or their citizens in the use of outer space. In this regard, it is generally accepted that what is meant by "freedom" in the Space Treaty. The third sentence from which obligations are derived in the Space Treaty states that for "activities" in outer space by intergovernmental organizations, the responsibility for such activities rests with the state and the entities involved.(Takhshid & Shoja, 2023)

In addition, all the terms of the agreement apply to the activities of both the intergovernmental organization and the countries involved, as stated in Article XIII of the *1967 Outer Space Treaty*. Article IX obliges States to ensure that space activities undertaken by them or their nationals will not cause harmful interference to other lawful space activities unless prior consultation with countries that may be affected. This clause may be construed as prohibiting the imminent causation of serious harmful interference unless a primary reason warrants that the activity should continue. This clause is the most substantive clause that relies on mining operations as far as the views of the international legal regime are concerned in the context of space exploitation itself. *"The provisions of this Treaty shall apply to the activities of States Parties to the Treaty in the explo- ration and use of outer space, including the Moon and other celestial bodies, whether such activities are carried on by a single State Party to the Treaty or jointly with other States, including cases where they are carried on within the framework of international intergovernmental organizations. Any practical questions arising in connection with activities carried on by inter- national intergov- ernmental organizations in the exploration and use of outer space, including the Moon and other celestial bodies, shall be resolved by the States Parties to the Treaty either with the appropriate international organization or with one or more States members of that international organization, which are Parties to this Treaty."*

Moon Agreement of 1979

The Moon Agreement of 1979 defined the moon, as well as other celestial bodies, and the natural resources found in outer space as the common heritage of mankind, and called for international regimes to implement this concept in the context of interests in mining operations.

However, as with *the Outer Space Treaty of 1967, the Moon Agreement of 1979* failed to specify in any way the context of mining in space in detail, in the end countries such as the United States and Russia refrained from signing and ratifying it. However, *the Moon Agreement of 1979* offers several interesting aspects to consider, mainly related to the international legal approach to space mining.(Abashidze & Chernykh, 2022)

First, Article 1 Paragraph (1) in principle it allows for developments where the provisions 'deviate' from the provisions of the *Moon Agreement of 1979,* this opinion rests on the application of the concept of the Moon as *the common heritage of mankind* . Referring to the nomenclature in Article 1 Paragraph (1), it is emphasized that the agreement can also apply to celestial bodies other than Earth which are still included in the solar system, if deemed useful and feasible to be developed. Furthermore, keep in mind that the provisions of *the Moon Agreement of 1979* itself, more precisely in Article 1 Paragraph (3), have clarified its scope. The sentence *"extraterrestrial materials which reach the surface of the earth by natural means"* indicates that *the Moon Agreement of 1979* does not apply to all space objects that reach the earth's surface naturally. While the resources extracted by asteroid mining activities certainly do not reach the Earth's surface naturally, that is to say, a distinction has been made between celestial bodies and extraterrestrial matter noteworthy in this treaty.(Abashidze & Chernykh, 2022)

While the doctrine of *the common heritage of mankind* developed in *the Moon Agreement of 1979* can be said to be beneficial for developing countries, on the other hand developing countries in terms of space exploration see it as an obstacle to space development because of the restrictions it imposes on property rights and ownership of resources.29 Developed countries, or specifically the United States, are afraid that the application of the principle of shared inheritance in space exploration will be tantamount to the transfer of wealth, political power, and technology from space explorer countries to Third World countries. 30 Thus some legal experts considered the Moon Agreement of 1979 to have little practical value, and the agreement was a failure.(Trump, 2020)

On further analysis, the provisions of Article 11 paragraph (3) of the agreement, more precisely the nomenclature sentence " *neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non- governmental organization, national organization or non-governmental entity or of any natural person"* prohibits claims to the property rights of the natural resources contained within.(Mehdi & Su, 2020)

However, *Article 6 of the Moon Agreement of 1979* allowed States Parties in the process of scientific activities to exploit and use minerals and other substances on the moon in appropriate quantities to support their missions, and allowed each State to build space stations on the moon and maintain jurisdiction and control over these stations. Article 6 paragraph (2) *of the Moon Agreement of 1979* stipulates that samples of space resources can be collected and taken by countries, and these samples will remain in the possession of these countries and can be used for scientific purposes. Here *the Moon Agreement of 1979* has shown its attitude towards the attribution of appropriation rights to space resources used for scientific purposes. Therefore, States that collect space resources and transfer them from outer space will enjoy

ownership rights over these resources. *A quo* article only gives the State the right to use and the right to obtain samples of space resources used for scientific purposes. These two rights enjoyed by the State are not exclusive, because Article 6 paragraph (2) further requires that the State must make some samples available to other interested States for scientific investigations.(Beauvois & Thirion, 2020)

As a result, if the spatial resources collected and obtained are excluded from the scope of the principle of non-appropriation, this will lead to 'competition' for collection and even confiscation of space resources.(Al Ali, 2021)

Such competition will inevitably have a negative impact on the order of space exploration within the international legal regime and the utilization of space resources. Even worse, the principle of non-appropriation will eventually lose its practical meaning, because, in the future, all States or private entities will exploit all space resources. Furthermore, Article 11 paragraph (7) letter d regulates the fair distribution of benefits derived from the resources obtained. When distribution occurs, special consideration should be given to developing countries and countries that have contributed, directly or indirectly, in relation to this month's exploration.

Mining practices in the Area are based on the provisions of the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982)

UNCLOS 1982 in Chapter XI, together with the *1994 Implementation Agreement* relating to Section XI, establishes the international legal framework for activities related to mining and marine scientific research in the Area. [34] Before discussing further about legality and the concepts of control and ownership of mining products, it is better to answer the debate that often occurs regarding mining practices in the Area, namely what is meant by resources in the Area.(Naranta & Muttaqin, 2022)

Article 133 letter (a) of UNCLOS 1982 provides a narrower definition of the term "resources" namely as all solid, liquid or gaseous mineral resources *in situ* [35] in the Area on or under the seabed, including polymetallic nodules. From one side, it can be interpreted textually, that only mineral resources related to the Zone regime and principles in UNCLOS 1982, and thus, other resources are not included in the framework of Chapter XI.(Nguyen, 2022)

Furthermore, pursuant to the provisions of Article 136, it is clear that the principle of the sea as the common heritage of mankind applies to the entire Area and not only to its mineral resources. It can be interpreted that biological resources or other non-mineral resources that are not included in the definition of resources as referred to in Article 133, as long as they are found in the Area, their ownership also follows the principle of the sea as the common heritage of mankind. This is because everything in the Area, both living and non-living, is subject to Article 136 as well.(Marimin et al., 2022)

Although Article 133 only mentions mineral resources, Chapter XI does not mention that the principle of common *heritage of all mankind* (the sea as the common heritage of mankind) only applies to this type of mineral resource. Therefore it can be concluded that natural wealth is not only limited to mineral resources. Furthermore, related to the principle of the sea as the common heritage of mankind is manifested in many ways:(Powell & Mitchell, 2022)

1) All rights to the resources of the Area belong to humanity as a whole;

2) No State or legal entity or entity may claim, obtain or exercise rights in respect of resources in the Area except in accordance with Chapter XI;
3) All mining and any recovered minerals can only be sequestered in accordance with UNCLOS and the rules adopted by the Authority;
4) States are required to ensure that they exercise "effective control" over any activity by their state companies and the legal or other legal entities they sponsor;
5) Activities in the Area, including marine scientific research, must be carried out for the benefit of humanity as a whole; And
6) The financial and other economic benefits from seabed mining are subject to fair sharing under rules to be developed by the Authority.

The involvement of the coastal state is also regulated, especially in terms of managing marine resources, such as in the use of the International Deep Sea Area or Area, which must be addressed with peaceful intentions by every State, starting from the coastal State or the coastal State/Country that is geographically disadvantaged without any discrimination. . Furthermore, Article 142 UNCLOS 1982 regulates activities in the Area, especially with regard to resources in the Area which cross national jurisdictional boundaries. That these activities must be carried out with care, in terms of having to pay attention to the rights and interests that arise from each coastal State. Because of this, there is an interest in conducting consultations as well as the emergence of a prior notification system by the State concerned in order to reduce the probability of a violation of existing rights or interests.(Merdekawati et al., 2022)

Based on this, all activities in the Area are carried out with due regard to the rights and legitimate interests of each coastal State whose jurisdiction the sediments cross, and in the event that activities in the Area may result in the exploitation of the assets located within national jurisdiction, prior approval is required. from the coastal State concerned.(Khalik & Roesa, 2022)

Specifically related to Exploration and Exploitation regulated in Article 153 UNCLOS 1982 that activities in the area must be organized, implemented and controlled by the ISA. Exploitation means the extraction for commercial purposes of polymetallic nodules in the Area and the extraction of minerals from them, including the construction and operation of mining, processing and transportation systems for the production and marketing of metals.(Burns, 2022) The following is a detailed definition of exploitation: *Exploitation means the recovery for commercial purposes of polymetallic nodules in the Area and the extraction of minerals there from, including the construction and operation of mining, processing and transportation systems, for the production and marketing of metals.*

***International Seabed Authority* (ISA)**

In 1971 UN General Assembly Resolution 2749 (XXV) stated that *"an international regime applying to the area and its resources and including appropriate international machinery should be established"*. That a regulation is needed in the international legal regime that applies to the Area and the resources contained therein. The ISA is an autonomous international organization responsible for organizing and controlling activities in the Area that specifically manages its resources.(Pecoraro, 2022) The ISA, which is referred to as the

Authority *in* UNCLOS 1982, was established based on the provisions of Chapter XI, the instrument contains norms governing its functions. To date, the ISA has issued Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area *adopted* July 2000, which was later updated and adopted July 25, 2013. 47 Regulation on Prospecting and Exploration for Polymetallic Sulfides in the Regions (the Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area) adopted May 7, 2010, and the Regulations on Prospecting and Exploration for *Cobalt-Rich Crusts* (*the Regulations on Prospecting and Exploration for Cobalt-Rich Crusts*) adopted July 27, 2012.(Blanchard et al., 2023)

Article 156 UNCLOS 1982 contains an important statement, precisely in paragraph 2 it states that all State Parties are *ipso facto members of the Authority* . Therefore, it can be concluded that according to the explanation in UNCLOS 1982 there are no specific requirements required for a State to become a member of the Authority itself, because the approval of a State to the Convention will automatically make it a part of the Authority.(Jiménez Morán Sotomayor, 2021)

Furthermore, Article 157 defines the nature and basic principles of the Authority. The Authority is appointed to regulate and control activities in the Area, with the specific aim of managing its resources. Paragraph 2 has a substantial meaning, which reads as follows: " *The powers and functions of the Authority shall be those expressly conferred upon it by this Convention. The Authority shall have such incidental powers, consistent with this Convention, as are implicit in and necessary for the exercise of those powers and functions with respect to activities in the Area".* The powers and functions of the Authority are those expressly conferred on it by UNCLOS 1982. The Authority shall have incidental powers, consistent with the application of the provisions of Part XI of UNCLOS 1982, as implied and necessary for the exercise of those powers and functions in respect of its activities. activities in the Region.(Anlar Güneş, 2020)

From the sentences used in Article 157 Paragraph (2) UNCLOS 1982 it can be assumed that the Authority has broad competence. The Authority has primary powers expressly granted by UNCLOS 1982 and incidental powers. Incidental power here can be interpreted as an unwritten power if necessary for the Authority to effectively carry out the powers and functions that have been expressly given. Furthermore regarding the functions and powers of the Authority, Article 152 paragraph (1) states that:(Ardito & Rovere, 2022)

1. *The Authority shall avoid discrimination in the exercise of its powers and functions, including the granting of opportunities for activities in the Area.*
2. *Nevertheless, special consideration for developing States, including particular consideration for the land-locked and geographically disadvantaged among them, specifically provided for in this Part shall be permitted.*

Which means that the Authority must avoid discrimination in the exercise of its powers and functions, including its treatment of all States Parties without exception. But paragraph (2) contains a departure from this principle of non-discrimination, and provides that the Authority is permitted to give special consideration to developing States. In special circumstances, the Authority will provide more favorable treatment to developing countries, land-locked countries or countries that are geographically disadvantaged.(Jaeckel, 2016)In accordance with Article 153 paragraph (1) activities in the Area referring to the exploration and exploitation of resources in the Area must be regulated, implemented and controlled in accordance with the

rules, regulations and procedures of the Authority. The arrangements in Chapter XI focus on mineral resources and mining activities. As a result it can be concluded that the Authority's mandate can be characterized as mining oriented. Therefore, the Authority must manage these resources and the minerals contained therein. Recalling also that Article 145 requires the Authority to establish rules, regulations and procedures in relation to activities in the Area to ensure the effective protection of the marine environment. However, the problem faced is that Article 145 does not explicitly stipulate that the Authority must protect living resources.(Guilhon et al., 2022)

The principle *of common benefits and interests*

Unlike the provisions in Article 136 of UNCLOS 1982 which stipulates the Area as the common heritage of mankind, the provisions in the Preamble of the *1967 Outer Space Treaty* use the principle of *common interest and benefits.* The difference in the use of this word is due to the fact that outer space is not subject to national sovereignty, space resources are basically in a 'natural state'. This thinking is in line with the opinion that God gave the Earth to all human beings without exception by John Locke, a British philosopher and political theorist whose writings were influential in the development of modern property rights.(Merdekawati & Arsana, 2022)

It is noteworthy that the freedom to use outer space, in addition to the prohibition on territorial appropriation by the State, is subject to the restrictions located in Article I of the *1967 Outer Space Treaty* , which briefly states as follows: *"the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind"*.

Scientific development, and will be the territory of all humanity, both now and in the future, in the exploration and use of outer space must be considered by each State. Inclusion of this limitation in the nomenclature of Article I with the use of the word ' *shall* ' indicates that it is intended to create legally binding obligations. In general, the use of natural resources in space will benefit and be in the interests of all nations by reducing the scarcity of resources on Earth and promoting technological progress. For example, it says using lunar resources to create cleaner and more efficient energy on Earth or to support exploration and settlement in outer space is consistent with the requirements above, 'even if the benefits are indirect'. What some States may find useful, however, may not be considered so by others. For example, the exploitation of space resources will harm the interests of the resource-exporting countries by lowering their prices. However, it should be noted that benefits and common interests for 'all countries' are not equivalent to sharing benefits in the common interest for 'every country'. At present, each country is facing various stages of development, these countries have different interests, and therefore they have emerged to form different policies. Therefore it is often difficult to fulfill the benefits and interests of each State. However, as Bentham says, we must seek *the greatest good for the greatest number*.(Khalik & Roesa, 2022)

First of all, the term *common interest* is usually referred to as ' *value and interest'* which is in the form of moral and objective in international law practice, and in particular the ICJ case. Usually what is at stake are valued interests or, conversely, the values in which those

interests are embedded. The relationship between values and interests becomes clearer when what is at stake is a right, to what extent the right protects that interest and the value contained therein. In fact, when talking about the public interest that is protected as a legal norm, usually that interest will take the form of an obligation, and whether this obligation is also in accordance with rights or not. Second, these interests are "general". What makes an interest a public interest, other than that of high/many collective interest holders, is their level of importance or fundamental character. Value similarity is one of the characteristics of the collective nature of the value or interest itself, there is a big difference between the collective nature of an 'object', the collective nature of the interests of the item, and the collective nature of the right holder or duty bearer relating to rights/obligations over that thing.(Xhelilaj & Lapa, 2022)

From these points a relationship arose between *common interests, common,* and *collective goods.* The most important point here is that the common interests of a particular group or even the international community in general do not necessarily mean that they are aggregative. In short, the principle of *common benefits and interests* can function as the aim or purpose of a certain regime in international law, even though it is not reflected in the object, type, structure of the arrangement. However, there is indeed a normative conflict that cannot be avoided, this also includes the norms of interests of each party.(Pramoda et al., 2021)

The principle of *common heritage of mankind*

In 1971, Russia and Argentina proposed a deal for the moon, and COPUOS finalized the draft in 1979. [63] It was this proposal that later became *the Moon Agreement of 1979,* whose goals were the safe development and rational management of lunar resources and the fair sharing of benefits. [64] Literally, the word common use of mankind means 'common use by mankind.' The concrete form of applying this principle is found in Paragraph 3 of the Preamble and Article III of the Outer Space Treaty 1967, it is stated in Paragraph 3 of the Preamble to the agreement that: " *Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development* ".(Kim, 2020)

The nomenclature of the opening of the agreement stipulates that the exploration and use of outer space must be carried out for the benefit of all people regardless of their level of economic or scientific development. Furthermore, the provisions in Article III stipulate that the States Parties to the Agreement will carry out activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law, including the United Nations Charter, for the benefit of maintaining peace. and international security and promote international cooperation and understanding. The important emphasis here, which is one of the main differences in the two principles *of common heritage of mankind* and *the common use of mankind,* is 'use'.(Aloia, 2019)

The principle of *common heritage of mankind* is a general concept of international law which stipulates that the use of resources available now must be used with consideration for future generations and the needs of developing countries. That it is humanity's shared responsibility to care for and protect the environment, of which we are a part, for present and future generations. Another major difference that is taken into consideration in differentiating

the two principles is regarding the available reserves of resources. This is because the resources that are lying around in the Area are *non-renewable* (non-renewable), so with the consideration that these resources will run out one day, the principle of *common heritage of mankind applies* to maintain the availability of resources in the future. Meanwhile, if you look at the principle of *common use of mankind*, it is not emphasized that these resources are limited, the point of emphasis lies more on their use and exploitation which must be freely carried out by anyone without discrimination. This assumption departs from the idea that space resources are unlimited.(Khatwani, 2019)

The 1967 Outer Space Treaty initiated the declaration of the principle of *the common heritage of mankind* in the space law regime. Although *the 1967 Outer Space Treaty* did not expressly incorporate the principle of *common heritage of mankind*, it did state that nations should explore and use outer space "for the benefit of all nations" and that outer space "shall be the province of all mankind." Article 11 of *the Moon Agreement of 1979* states that the Moon and its natural resources are the *common heritage of mankind*. Article 11 further stipulates that the moon is not subject to appropriation, and that an international regime must be established when exploitation becomes appropriate. Article 11 paragraph (7) letter d regulates the fair distribution of benefits derived from these resources.(Alsdaifat, 2018)

When distribution occurs, special consideration must be given to developing countries and countries that have contributed, directly or indirectly, to exploration of the Moon. In contrast to the provisions in the legal regime in space, negotiation Chapter XI UNCLOS 1982 shows no compromise. On the contrary, the provisions of Chapter XI only reflect the views of developed and developing countries where the two groups recognize the elements *of the common heritage of mankind*. Chapter XI of UNCLOS 1982 embodies the basic provisions on the Area, which are defined in Article 1 paragraph (1) as: " *the seabed, ocean floor and subsoil thereof, beyond the limits of national jurisdiction* ". The area is governed by the principle of *common heritage of mankind.* This prevents countries that claim or exercise 'sovereign or sovereign rights' and for n *atuurlijke persons* or *rechtspersoons* to seize part or all of the Area.(O'Brien, 2020)

Conclusion

The concept of property rights exists and is recognized in space law regimes, even in the absence of territorial rights over celestial bodies, although their application to resource extraction remains a contentious issue. Exactly what those rights are and how far they can apply to resource extraction is still under debate, creating uncertainty for companies wishing to invest in such ventures.

There is no prohibition in customary international law regarding the legality of unilateral exploitation of space resources, because until now there has been no such practice. Legislation, such as *the US Commercial Space Launch Competitiveness Act*, has recently shown a trend toward freedom to engage in unilateral exploitation. Although this issue was not discussed expressively in the arrangements for *the Outer Space Treaty of 1967* and *the Moon Agreement of 1979,* the general principles enshrined in them apply to exploitation activities in the future, unless there is a *lex specialis arrangement* in the future.

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