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India and Space Exploration: Need for a Legal Framework for Space Exploration

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ABSTRACT

Space exploration has become a reality with technological advancements and increased commercial space activities. India has played a significant role in international agreements and treaties that address critical issues in space exploration. However, these instruments have deficiencies and face grave challenges with the growing interest of both government and private entities in Space. The Indian space industry is facing a big problem because there are no clear laws about space exploration in India. To address these challenges, the Indian government must develop a legal framework for space exploration, which is critical for encouraging private sector participation and investment in the space industry.

I. INTRODUCTION

For centuries, the idea of exploring space has captivated the human imagination. Space exploration has become a reality with technological advancements and increased commercial space activities. With the launch of Sputnik in 1957 by the then-Soviet Union, all nations began to explore deeper, triggering a race to space exploration.

However, as more countries and companies venture into space, various legal issues arise, such as property rights, liability, intellectual property, and regulation. Many international treaties and agreements have been put in place to address these issues, with the five U.N. foundational space treaties being the most recognized.

(A) The Outer Space Treaty, 1967

The Outer Space Treaty, signed in 1967 by the United States, the Soviet Union, and the United Kingdom, is the primary international treaty governing space exploration. Over 110 countries have since ratified it, making it one of the most effective international agreements on space exploration. The treaty provides a framework for the peaceful exploration and use of outer space.

The Outer Space Treaty has several crucial provisions that significantly impact space exploration. One such provision prohibits placing weapons of mass destruction in orbit or on

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celestial bodies to prevent the militarization of space and ensure that space is used only for peaceful purposes. Another vital provision is the freedom of exploration and use of outer space, regardless of a country's level of development or economic status. This provision has fostered international cooperation in space exploration and led to many successful joint space missions. While the Outer Space Treaty prohibits nations from claiming sovereignty over celestial bodies, including the Moon and other planets, it does not address private property rights. As space exploration and commercial space activities increase, the interest in property rights in space grows. However, a legal framework currently needs to be in place to determine property rights in space. International law principles, such as the homestead principle, could apply, which allows an individual to claim property by putting it to productive use.

(B) The Rescue Agreement, 1968

The Rescue Agreement is a treaty that the United Nations General Assembly adopted. It sets out rules that govern the rescue and return of astronauts, as well as the return of objects that have been launched into space. The agreement was created in response to concerns about the safety of astronauts and the need for countries to work together in case of a space emergency.

Under the Rescue Agreement, countries that sign the treaty must do everything they can to rescue and help astronauts who are in distress and bring them back to the country that launched them. The agreement also states that countries must recover and return any objects that are launched into space and land on their territory, regardless of who owns them.

By reinforcing the principle of cooperation in space activities, the Rescue Agreement encourages international collaboration in the rescue and return of astronauts and objects launched into space. Over 100 countries, including all major spacefaring nations, have ratified the agreement, making it a critical international legal framework for space exploration and safety.

(C) The Liability Convention, 1972

The Liability Convention, also known as the "Convention on International Liability for Damage Caused by Space Objects," outlines the responsibility of Launching States for any damage caused by their space objects on Earth or in space and also provides a framework for resolving claims for losses suffered as a result of such damage.

This means states are responsible for any space assets they launch from their territory and will be held accountable for any damage or harm caused by those assets, whether on Earth or in space. This includes situations where a private actor or a state space agency is responsible for

an incident.

Under the Liability Convention, if damage or destruction occurs, claims are pursued by one state against another state, regardless of who caused the incident. This differs from most national legal documents, which allow individuals or industries to file lawsuits against each other. The Liability Convention places the ultimate responsibility on states, even if a private actor is at fault.

The Liability Convention has only been used once, in 1978, when the U.S.S.R.'s Cosmos 954 satellite unintentionally re-entered Earth's atmosphere and scattered approximately 50 kg of radioactive uranium-235 over northern Canada. While not many people lived in the affected area, some were unintentionally exposed to radiation. It took about a year to clean up the affected area, covering 124,000 square kilometres.

(D) The Moon Agreement, 1979

The Moon Agreement was created by the United Nations General Assembly to regulate the exploration and use of the Moon and other celestial bodies in a way that benefits all countries and does not harm the environment. This agreement provides a framework for governing activities on the Moon and other celestial bodies, requires states to inform the international community of their activities, and ensures the fair sharing of benefits obtained from natural resources.

Although the Moon Agreement was adopted by the U.N., only 18 countries have signed it, and none of the major spacefaring nations have ratified it, which limits its effectiveness.

(E) The Registration Convention of 1976

The Registration Convention, also known as the Convention on Registration of Objects Launched into Outer Space, is an international treaty that governs the registration of objects launched into outer space. The convention was adopted on January 14, 1975, and entered into force on September 15, 1976. It is considered one of the fundamental treaties of space law.

The Registration Convention sets up a system for the registration of all objects launched into outer space with a sovereign state or intergovernmental organization. The launching state or organization must provide specific information, such as the name of the launching state or organization, the launch date and location, the type of object, and the orbital parameters. This information must be updated as necessary to ensure the registry remains accurate and up-to-date.

The convention has several purposes. Firstly, it ensures that a record of all objects launched into

outer space exists for safety and security reasons. If an object re-enters Earth's atmosphere, it can be traced back to its launching state or organization to determine liability for any harm or damage caused. Secondly, the convention promotes transparency and accountability in space activities by requiring states and organizations to register their space objects, increasing transparency and reducing the likelihood of misunderstandings or conflicts arising. Finally, the convention facilitates cooperation between states and organizations by providing a means for them to share information about their space activities.

As of May 2023, the Registration Convention has been ratified by 109 countries, including major spacefaring nations such as the United States, Russia, China, and India. It is considered a cornerstone of international space law, along with the Outer Space Treaty of 1967, the Liability Convention of 1972, and the Rescue Agreement of 1968.

However, many argue that these conventions still need to address the complex legal issues that arise in space exploration.

One of the main reasons why U.N. space conventions have failed is the limited participation and enforcement. Not all countries have signed and ratified the United Nations space treaties, which means that some states are not bound by international law on space. Moreover, the U.N. needs more authority to enforce the provisions of these treaties. The U.N. relies on countries to enforce these treaties' provisions, which has led to uneven enforcement.

Another reason why U.N. space conventions have failed is the lack of clarity and ambiguity found in the treaties. For example, the 1967 Outer Space Treaty provides for the sharing of benefits from space exploration among all countries, but it does not specify how benefits will be shared or what kind of benefits will be shared. There are no legally binding provisions in this treaty, which makes it difficult to enforce.

Space technology is rapidly evolving, outstripping the ability of the international community to update international laws and regulations governing space exploration. Furthermore, the pace of technological change means that it is challenging to anticipate all the legal issues that will arise in the future. Legal frameworks must be flexible enough to accommodate the rapidly changing technological landscape, and they still need to keep pace with developments in space exploration. As such, international laws and regulations have become outdated and need to address current and future legal issues adequately.

Additionally, Legal issues in space exploration have become politicized, reflecting underlying international tensions and power struggles. In particular, the use of military technology in space is a divisive issue among nations. This politicization of space exploration has led countries to

pursue their economic and strategic interests, putting the development of international legal frameworks on hold.

The entry of private players in the space industry is another factor contributing to the ineffectiveness of U.N. space conventions. Private companies such as SpaceX, Blue Origin, and Virgin Galactic are now engaged in space activities that were previously the sole domain of governments.

One challenge posed by the entry of private players is the need for clear legal frameworks for their activities. The existing U.N. space conventions were developed primarily with government-sponsored space activities in mind, and they may need to fully address the specific challenges and risks associated with private space activities. For example, the Outer Space Treaty of 1967, which prohibits the placement of weapons of mass destruction in outer space, does not address the issue of private companies developing and deploying their own weapons systems in space.

Another challenge is the need for more transparency and accountability in private space activities. Unlike governments, private companies are not required to disclose their space activities or register their space objects with the U.N., making it challenging to track and monitor their activities. This can raise concerns about safety and security in space, especially if private companies are engaging in activities that could potentially cause harm or damage to other space objects or the environment.

Moreover, the commercial nature of private space activities can create conflicts of interest between the objectives of private companies and the public interest. For example, private companies may prioritize profits over safety or environmental concerns, which could lead to the exploitation of space resources or the development of space technologies that are not in line with international standards or agreements.

This growing private interest in Space Exploration has brought the issue of Intellectual property rights to the forefront. Despite the legal protections provided under the I.P. Treaty, there are challenges to the protection of I.P.R.s in space exploration. One of the significant challenges is the issue of jurisdiction and enforcement. Space exploration and technology development are multinational efforts involving various countries and entities. As such, it becomes challenging to enforce I.P.R. protections across different countries and entities.

II. INDIAN SCENARIO

India is among the top five countries globally when it comes to space technology. However,

historically, the Indian space program has been operated exclusively by the government. Recently, the government has allowed private sector participation in space exploration to aid in launching objects into orbit and beyond, opening up opportunities for commercial services.

As a major player in the field of space exploration, India has played a significant role in international agreements and treaties that address critical issues in space exploration. These agreements have been crucial in ensuring that space activities are conducted peacefully and for the benefit of all humanity.

Therefore, National legislation on space exploration is critical for regulating and governing space activities within a country's jurisdiction. It provides legal clarity, establishes responsibilities, and protects the interests of the country and its citizens. This not only helps in supervision at the national level but also addresses international obligations and commitments, such as the principles outlined in the Outer Space Treaty of 1967, which include the peaceful use of outer space and the prevention of the placement of weapons of mass destruction in orbit.

However, unlike other space powers, India does not have any strict legal structure for the same. The absence of national legislation on space exploration in India creates several challenges. Firstly, it leads to a need for more legal clarity and certainty regarding the responsibilities and liabilities of the various stakeholders involved in space activities. Consequently leading to disputes and delays in space projects, hindering the development of the Indian space industry.

India's space exploration efforts face limitations due to the need for national legislation. This can hinder India's participation in international space cooperation and collaborations, often involving complex legal agreements requiring national clarity and coherence. Furthermore, the absence of a legal framework for space exploration can also hinder the development of commercial space activities in India. A comprehensive legal framework is crucial for encouraging private sector participation and investment in the space industry.

To address these challenges, the Indian government has taken steps to develop a legal framework for space exploration. In 2019, I.S.R.O. established the Indian National Space Promotion and Authorization Centre (IN-SPACe) to promote private sector participation and provide regulatory oversight. However, IN-SPACe's scope is limited to regulatory oversight and a comprehensive legal framework for space exploration is still needed.

The Draft Space Activities Bill was made public in 2017 but has yet to become a working Act. The government has been working on incorporating stakeholder suggestions and has sent the bill to the Prime Minister's Office for approval. However, as of the latest 2021 Budget Session proceedings of the Parliament of India, the bill has yet to be approved by the Cabinet of India.

III. CONCLUSION

To conclude, the Indian space industry is facing a big problem because there are no clear laws about space exploration in India. To solve this problem, the Indian government needs to make some new laws that will make it clear who is responsible for what in space and also protect the rights of everyone involved. This will help India attract more private companies to invest in space exploration and work with other countries to achieve their goals. However, any new laws they make must also follow Articles 51 and 253 of the Indian constitution, both of which call for advancing world peace. Overall, if India wants to be a top player in the space industry, they need strong laws to help them succeed.
