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PROJECT REPORT

Overview of Space Law: International and Indian Legislation

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Part I
International Space Law

Introduction to Space Law

International Space Law refers to a branch of international law that governs the use of outer space by States, international organizations and private entities. The established legal principles and rights ensure that space exploration is directed towards peaceful purposes and benefit of all humankind.
The foundation of modern International Space Law was laid under the framework of the United Nation. Today, it is governed by five major United Nations treaties and several principles adopted by the United Nations General Assembly

Significance of International Space Law

During the 20th century, rapid development in space technology created opportunities for navigation, communication, and scientific discovery. However, it also raised concerns regarding ownerships, protection of astronauts as well as outer space and liability for damages due to research.
Therefore, International Space Law was developed to prevent conflicts between nations and ensure the protection of space resources. This encourages the use of outer space to remain beneficial for all countries.

History of Space Law

The establishment of space law began with the launch of Sputnik 1 by the Soviet Union on October 4, 1957. This marked the beginning of the Space Age. As more countries began exploring outer space during the Cold War, it became necessary to establish international rules to secure the peaceful use of space.
In response, the United Nations established the Committee on the Peaceful Uses of Outer Space (COPUOS) in 1959 to develop legal principles governing space activities. This led to the adoption of the Outer Space Treaty (1967). Which laid the foundation of modern international space law.

Timeline	
1957	Soviet Union launches Sputnik 1
1958	UN establishes the Ad Hoc Committee on the Peaceful Uses of Outer Space
1959	COPOUS becomes a permanent UN committee

1963	UN Declaration of Legal Principles Governing Activities in Outer Space adopted
1967	Outer Space Treaty adopted (entered into force on 10 October 1967)

Sputnik 1
Sputnik 1 was the world's first artificial satellite, launched by the Soviet Union on 4 October 1957. Orbiting the Earth for 21 days, it marked the beginning of the Space Age and demonstrated that human-made objects could successfully operate in outer space.

Fundamental Principles of International Space Law

International Space Law is founded upon a set of fundamental legal principles that guide the use of outer space. These principles have been developed over time through international treaties, declarations, and customary laws. The fundamental principles of International Space Law provide the legal and ethical framework for all activities conducted in outer space. They ensure that space remains a domain dedicated to peaceful exploration, international cooperation, and the benefit of all humankind. The five United Nations space treaties are based on these principles.

Principle of Peaceful Use of Outer Space

Articles 3 and 4 of the Outer Space Treaty emphasise the peaceful use of outer space.

"State Parties to the Treaty shall carry on activities on exploration and use of outer space…. in the **interest of maintaining international peace and security and promoting international co-operation and understanding.**"

- This treaty implies that all research activities, exploration and uses of outer space will have the primary purpose should be promoting peace and co-operation. This is essential to Space Law, as it prioritizes community help over personal monetary gain.

"States Parties to the Treaty **undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction**…The establishment of **military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden**. The use of military personnel for **scientific research or for any other peaceful purposes shall not be prohibited**. The use of any equipment or facility necessary for **peaceful exploration of the Moon and other celestial bodies shall also not be prohibited.**"

- This treaty implies that weapons of destruction, military establishments, and conducting military activities on the celestial bodies is forbidden. This further affirms the use of Outer Space for peaceful reasons, preventing personal military benefit or weaponizing its use against other states.
- However, using military personnel, equipment and facilities to conduct research and exploration that is directed towards peaceful gain and overall benefit of the States is not forbidden. This gives flexibility to the peaceful use of Outer Space without risking damage to it.

The Treaty does not prohibit all military activities in space. Instead, it specifically prohibits placing nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies.

This guides the States to use outer space for peaceful purposes and avoid activities that lead to armed conflict. This principle helps prevent the militarization of outer space and encourages countries to cooperate in scientific exploration rather than engage in conflict.

Principle of Non-Appropriation

Article 2 of the Outer Space Treaty lays the principle of non-appropriation.

"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."

- This states that any and all celestial bodies in outer space cannot be used, occupied or owned by a single state or group of states. They are for public exploration and use, not to be owned. Exploring them does not give any State ownership rights.

The principle prevents territorial disputes in space and ensures that outer space remains accessible to all nations. For example, although many countries have landed spacecraft on the Moon, none of them owns any part of its surface.

Principle of Freedom of Exploration and Use

Article 1 gives States the freedom to explore and use outer space.

"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 co-operation in such investigation."

- This Article, being the first, explains the basic principle of exploring outer space for the benefit of all countries and the betterment of mankind while keeping the use peaceful.
- Furthermore, it states that all celestial bodies are free for exploration by all countries. It forbids discrimination of its use on any grounds and ensures free access that is in accordance with the international law for outer space.

- Additionally, there is also freedom of scientific investigation and research on all the celestial bodies as long as the State(s) do it with the intention of co-operation and peaceful use.

All States have the freedom to explore and use outer space and conduct space activities without discrimination, provided they comply with international law. This principle promotes equal access to outer space and encourages international scientific cooperation.

Principle of International Co-operation

The Principle of International Co-operation is mentioned in the Preamble of the Outer Space Treaty, then reiterated in every article that follows.

"The States Parties to this Treaty,
Inspired by the great prospects opening up before mankind as a result of man's entry into outer space,
Recognizing **the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes**,
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**,
Desiring to contribute to **broad international co-operation in the scientific as well as the legal aspects** of the exploration and use of outer space for peaceful purposes,
Believing that such co-operation will **contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples**,
Recalling resolution 1962 (XVIII), entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space", which was adopted unanimously by the United Nations General Assembly on 13 December 1963,
Recalling resolution 1884 (XVIII), calling upon States to **refrain from placing in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction or from installing such weapons on celestial bodies**, which was adopted unanimously by the United Nations. General Assembly on 17 October 1963,
Taking account of United Nations General Assembly resolution 110 (II) of 3 November 1947, which **condemned propaganda designed or likely to provoke or encourage any threat to the peace, breach of the peace or act of aggression**, and considering that the aforementioned resolution is applicable to outer space,
Convinced that a Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, will further the purposes and principles of the Charter of the United Nations"

- The above preamble sets the foundation of international co-operation, listing that space exploration should be carried out with the primary purpose of benefit of all mankind, keeping in mind their interests.
- It also encourages international co-operation, strongly believing that it will lead to strengthening of friendly relations in scientific and legal aspects.
- Finally, it prohibits the use of nuclear weapons or practice of mass destruction towards celestial bodies. It also discourages propaganda that may instigate violence or threat to peace.

This principle implies that States should cooperate with one another in exploring and using outer space and should share the benefits of scientific discoveries whenever possible. It encourages the exchange of scientific knowledge, technical assistance, and collaboration in international space missions. International cooperation reduces duplication of effort, promotes peaceful relations, and enables countries to undertake complex space projects together.

Principle of Responsibility of States

The principle of responsibility that is bestowed upon the states is explicitly mentioned under Articles 6 and 7 of the Outer Space Treaty.

"States Parties to the Treaty shall bear **international responsibility for national activities in outer space**, including the Moon and other celestial bodies, **whether such activities are carried on by governmental agencies or by non-governmental entities**, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty.
The **activities of non-governmental entities in outer space**, including the Moon and other celestial bodies, **shall require authorization and continuing supervision by the appropriate State Party to the Treaty**.
When activities are carried on in outer space, including the Moon and other celestial bodies, by an **international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating** in such organization."

- This article states that the State is to take responsibility for the activities carried out by their nation with respect to Outer Space. This applies to both activities carried out by the government bodies as well as non-government bodies.
- When such activities are carried out by non-government bodies, the activities must be authorized by the supervising State.
- If the activities are carried out by an international organization, the responsibility lies on the organization and the States participating in that specific activity.

“Each State Party to the Treaty that **launches or procures the launching of an object into outer space**, including the Moon and other celestial bodies, and each State Party from **whose territory or facility an object is launched**, is **internationally liable for damage to another State Party to the Treaty** or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the Moon and other celestial bodies.”

- This article says that if a State launches an object into outer space from their territory and/or procures the object that is to be launched will be liable if the said object caused harm to another uninvolved State.

States bear international responsibility for national space activities, whether those activities are conducted by government agencies or private organizations. Governments must supervise and authorize private companies involved in space activities and remain internationally responsible for their conduct. This principle ensures accountability and encourages States to regulate private space operators effectively.

The Five United Nations Space Treaties

As mentioned previously, the principles are the foundation of the Five UN Space Treaties. These five treaties deals with non-appropriation of outer space by any one country, arms control, the freedom of exploration, liability for damage caused by space objects, the safety and rescue of spacecraft and astronauts, the prevention of harmful interference with space activities and the environment, the notification and registration of space activities, scientific investigation and the exploitation of natural resources in outer space and the settlement of disputes. They re-iterate that all activities carried out in space have the sole purpose of betterment of humanity.

Outer Space Treaty (1967)

The Outer Space Treaty was developed following the launch of Sputnik 1 in 1957. It marked the start of the Space race, which meant there was a need to establish laws that States must adhere to otherwise it would become another ground to compete for resources.

Provisions

Some of the significant articles include:

Article 1: The exploration and use of outer space shall be carried out for the benefit and in the interests of all countries.

Article 2: Outer space is not subject to national appropriation by claim of sovereignty.

Article 3: States Parties to the Treaty shall carry on activities in the exploration and use of outer space in accordance with international law.

Article 4: States Parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.

Article 5: States Parties to the Treaty shall regard astronauts as envoys of mankind in outer space and shall render to them all possible assistance in the event of accident or emergency landing on the territory of another State Party or on the high seas.

Article 6: States Parties to the Treaty shall bear international responsibility for national activities in outer space whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty.

Article 7: Each State Party to the Treaty that launches or procures the launching of an object into outer space and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty.

Article 8: A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body.

Article 9: In the exploration and use of outer space States Parties to the Treaty shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space with due regard to the corresponding interests of all other States Parties to the Treaty.

Significance

The Outer Space Treaty forms the constitutional foundation of International Space Law. It introduced the principles of peaceful use, freedom of exploration, non-appropriation, State responsibility, and international cooperation. The Treaty governs modern activities such as satellite launches, scientific research, and international missions.

Limitations

The Treaty was drafted during the early years of space exploration and therefore does not specifically regulate several modern issues, such as:

- commercial space tourism
- private ownership of extracted space resources
- large satellite constellations
- active removal of space debris

These emerging issues are increasingly addressed through national legislation, international cooperation, and non-binding guidelines.

Rescue Agreement (1968)

The Rescue Agreement expands on the provisions provided in articles 5 and 8 of the Outer Space Treaty. It focuses on the safety of astronauts and objects ensuring that there is an agreement on liability for damage caused by the launching of objects into outer space and an agreement on assistance to and return of astronauts and space vehicles.

Provisions

Some of the important articles discuss the following:
Article 1: Each Contracting Party which receives information that the personnel of a spacecraft have suffered an accident or are experiencing conditions of distress or have made an emergency

or unintended landing in territory under its jurisdiction shall immediately notify the launching authority or notify the Secretary-General of the United Nations.

Article 2: If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party, it shall immediately take all possible steps to rescue them and render them all necessary assistance

Article 3: If information is received that the personnel of a spacecraft have alighted on the high seas or in any other place not under the jurisdiction of any State, those Contracting Parties which are in a position to do so shall extend assistance in search and rescue operations for such personnel to assure their speedy rescue.

Article 4: If, owing to unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party in any other place not under the jurisdiction of any State they shall be safely and promptly returned to representatives of the launching authority.

Article 5: [The Rescue Agreement requires States to notify the launching authority and UN when a space object returns to Earth.States must recover and return space objects found within their jurisdiction when requested. Hazardous objects must be handled to prevent harm, with recovery and return costs borne by the launching authority.]

Significance

The Article emphasizes on protecting astronauts as envoys of mankind. It ensures that if space crafts/objects sent in space/astronauts land in another State, their safety is prioritized over ownership and other sources of squabbles between nations. It puts humankind and the goal of peace before other secondary objectives.

Limitations

The specific limitation, despite the detailed articles mentioned under this agreement, is its non-coverage of space tourists. It primarily focuses on astronauts.

Liability Convention (1972)

The Liability Conventions clarifies article 7 of the Outer Space Treaty. It establishes grounds on which States will be liable on the account of damage. It lays down the rights and obligations pertaining to liability for damage.

Provisions

The following articles sum up the basic provisions:
Article 2: A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight

Article 3: In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State by another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.

Article 5: Where two or more States jointly launch a space object, they shall be jointly and severally liable for any damage caused.

Article 6: A launching State may be exempted from liability if it proves that the damage resulted from the gross negligence or intentional conduct of the claimant State.

Article 9: Claims for compensation shall generally be presented through diplomatic channels, with parties encouraged to resolve disputes through consultation.

Significance

This Convention protects States from suffering damage. It also prevents disputes from turning violent by enabling peaceful negotiation channels. An important event where this Convention held importance was during Kosmos 954 (1978), where a Soviet satellite carrying a nuclear reactor crashed in Canada and led to a compensation claim.

Kosmos 954
Kosmos 954 was a Soviet nuclear-powered satellite that re-entered Earth's atmosphere and broke apart over northern Canada in January 1978, scattering radioactive material across a large area. The incident led to a major international liability claim by Canada against the Soviet Union.

Limitations

This convention is limited as direct claims cannot be made by private individuals. This Convention only covers States, a group of States, or groups under the delegation of States.

Registration Convention (1975)

This convention's main purpose was to improve transparency among States in outer space research. Its main objective is to register all objects that are to be sent in space. It aims to "..make provision for registration by launching States of space objects launched into outer space with a view to providing States with additional means and procedures to assist in the identification of space objects."

Provisions

The basic provisions include:

Article 2: When a space object is launched into earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. Where there are two or more launching States in respect of any such space object, they shall jointly determine which one of them shall register the object in accordance with paragraph 1 of this article.

Article 3: The Secretary-General of the United Nations shall main- tain a Register in which the information furnished in accordance with article IV shall be recorded. There shall be full and open access to the information in this Register.

Article 4: [States shall provide the UN Secretary-General with information on registered space objects, including their launching State, designator, date and location of launch, orbital parameters, and general function.]

Article 5: Whenever a space object launched into earth orbit or beyond is marked with the registration number, the State of registry shall notify the Secretary-General.

Significance

By promoting transparency and accountability in the objects that enter outer space, this convention further adds on to the Liability Convention and Rescue Agreement. Registering the objects sent in space ensures that if any harm occurs on a third-party State, the responsible party can be held liable. Furthermore, any lost objects can be retrieved, identified and returned safely.

Moon Agreement (1979)

The Moon Agreement is responsible for regulating activities on the Moon and other celestial bodies. It recognizes that the moon, as a natural satellite of the earth, has an important role to play in the exploration of outer space and that aims to prevent the moon from becoming an area of international conflict.

Provisions

Article 3: States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction.

Article 6: [States may conduct scientific investigations on the Moon and must promote international cooperation and exchange of information.]

Article 7: [States must protect the Moon's environment and prevent harmful contamination or disruption of its natural resources.]

Article 8: States Parties may pursue their activities in the exploration and use of the moon anywhere on or below its surface, subject to the provisions of this Agreement.

Article 11: The Moon and its natural resources are declared the common heritage of mankind and cannot become the property of any State, organisation or individual.

Article 12: States Parties shall retain jurisdiction and control over their personnel, vehicles, equipment, facilities, stations and installations on the moon. In the event of an emergency involving a threat to human life, States Parties may use the equipment, vehicles, installations, facilities or supplies of other States Parties on the moon.

Article 14: States Parties to this Agreement shall bear international responsibility for national activities on the moon, whether such activities are carried on by governmental agencies or by non- governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in this Agreement.

Other International Legal Frameworks

The five United Nations space treaties form the foundation of international space law, but they do not operate in isolation. To support them, regulatory frameworks have been developed around them through United Nations bodies and General Assembly principles. These frameworks help States address issues that were not fully anticipated when the principal treaties were drafted. Among the most significant frameworks are the **Committee on the Peaceful Uses of Outer Space** (COPUOS)**, the United Nations Office for Outer Space Affairs** (UNOOSA)**, the Artemis Accords,** and **the Guidelines for the Long-term Sustainability of Outer Space Activities.**

Committee on the Peaceful Uses of Outer Space (COPUOS)

COPUOS was set up by the General Assembly in 1959 to govern the exploration and use of space for the benefit of all humanity: for peace, security and development. The Committee was tasked with reviewing international cooperation in peaceful uses of outer space. The Committee has two subsidiary bodies: the Scientific and Technical Subcommittee, and the Legal Subcommittee, both established in 1961.

Scientific and Technical Subcommittee (STSC): STSC focuses on the scientific and technical aspects of space activities. Its work helps States develop guidelines and recommendations for the safe and peaceful use of outer space.

Legal Subcommittee (LSC): focuses on the legal aspects of space activities. It examines questions relating to international space law, including the implementation of UN space treaties.

Primary Functions

- considers legal and policy questions relating to outer space;
- promotes international cooperation in the peaceful exploration and use of outer space;
- considers ways in which space science and technology can contribute to sustainable development;
- oversees discussions on the long-term sustainability of space activities;
- contributes to the development of international legal principles and guidelines.

Significance:

COPUOS provides a permanent international forum where States can discuss emerging space-law issues and develop common approaches without necessarily creating a new treaty for every emerging problem.

United Nations Office for Outer Space Affairs (UNOOSA)

The United Nations Office for Outer Space Affairs (UNOOSA) serves as the United Nations office responsible for supporting international cooperation in the peaceful uses of outer space. While COPUOS is an intergovernmental committee, UNOOSA functions as the UN Secretariat office that supports its work.

Primary Functions

- supporting COPUOS and its subsidiary bodies;
- assisting States in implementing international space treaties and principles;
- maintaining the United Nations Register of Objects Launched into Outer Space;
- providing capacity-building and technical assistance;
- promoting awareness of international space law;
- supporting the sustainable use of outer space.

Significance

The mandate of UNOOSA focuses on the peaceful uses of outer space. The Office promotes international cooperation, the implementation of space law, access to space science and technology for sustainable development, particularly for the benefit of developing countries.

Artemis Accords

The Artemis Accords are a non-binding set of principles designed to guide civil space exploration and use in the 21st century. Co-led for the United States by the Department of State and NASA, the Artemis Accords were launched on **October 13, 2020** with **Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, the United Kingdom** and **the United States**. Unlike the five UN space treaties, the Artemis Accords are not a treaty. They are a non-binding political commitment between participating States.

Primary Functions

The Artemis Accords address the following goals in space exploration:

- peaceful purposes;
- transparency;
- interoperability;
- emergency assistance;
- registration of space objects;
- release of scientific data;
- preservation of space heritage;
- utilisation of space resources;
- deconfliction of space activities;

- mitigation of orbital debris and spacecraft disposal

Significance

The Artemis Accords bring together a diverse set of nations with a shared vision of peaceful space cooperation. They attempt to provide practical principles for space exploration while remaining consistent with the existing international legal framework.

India and the Artemis Accords
India became the 27th signatory of the Artemis Accords on 21 June 2023, committing to principles of peaceful, transparent and sustainable space exploration. The Accords reinforce obligations under existing international space law, particularly the Outer Space Treaty.

Soft Law in International Space Law
Soft law refers to non-binding principles, guidelines and standards that influence State behaviour without creating the same legal obligations as treaties. In space law, examples include UN space principles, COPUOS guidelines and space-debris mitigation guidelines.

Conclusion : International Space Law

International space law has developed from the basic principles established during the early Space Age into a broader framework governing the exploration and use of outer space.

While certain principles and treaties have been set as ground rules, there is no denying that developing laws, discussion in committees and ongoing operations continue to define objectives and set boundaries.

As space activities increasingly involve private actors and commercial exploration, international cooperation and the continued development of space law remain essential for ensuring that outer space is used safely, peacefully and sustainably for the benefit of all humanity. It is through such international laws that countries can build upon their own space exploration while also collaborating with other States.

Part II
Indian Space Law

Introduction to Indian Space Law

India's space programme developed with the objective of using space science and technology to address national developmental needs. Rather than beginning primarily as a programme of space exploration, India's early space activities focused on practical applications such as communications, remote sensing, meteorology, education and resource management.
The development of India's space programme was accompanied by the creation of institutions responsible for research, policy-making and implementation. The **Indian National Committee for Space Research** (INCOSPAR) was established in 1962, which was later converted to **Indian Space Research Organisation** (ISRO) in 1969. In 1972, the Government of India established the **Department of Space** (DOS).

Evolution of the Programme

India's organised space activities began in the early 1960s by Dr. Vikram Sarabhai, widely regarded by ISRO as the founding father of India's space programme. The establishment of INCOSPAR in 1962 marked the beginning of India's institutionalised space programme.
In the same year, work began on the **Thumba Equatorial Rocket Launching Station** (TERLS) near Thiruvananthapuram.
India subsequently moved from experimental research towards developing its own satellites. The first Indian satellite, Aryabhata, was launched in 1975 using a Soviet launch vehicle. Over the following decades, India's programme expanded into satellite communications, remote sensing, navigation, meteorology, launch vehicles and space science.

Indian National Committee for Space Research (INCOSPAR)

To spearhead the space research activities, Indian National Committee for Space Research (INCOSPAR) was set up in 1962 under the **Department of Atomic Energy**. Subsequently, Indian Space Research Organisation (ISRO) was established in August 1969, in place of INCOSPAR. The Government of India constituted the Space Commission and established the Department of Space (DOS) in June 1972 and brought ISRO under DOS in September 1972.
INCOSPAR is significant because it represents the starting point of India's organised space programme. Its work eventually developed into the larger institutional structure represented by ISRO.

Indian Space Research Organisation (ISRO)

The Indian Space Research Organisation (ISRO) was established on 15 August 1969, replacing INCOSPAR. Some of its main objectives include design, development and realization of

Communication Satellites, Earth Observation Satellites, Navigation Satellite System and satellites for Space Science and Planetary Exploration. ISRO became the principal research and development organisation implementing India's space programme.

Department of Space (DOS)

The Department of Space (DOS) was established by the Government of India in June 1972, along with the Space Commission. ISRO was subsequently brought under the Department of Space. The Department of Space (DOS) has the primary objective of promoting development and application of space science and technology to assist in all-round development of the nation. To achieve this DOS has evolved the following programmes:

- Launch Vehicle programme
- INSAT Programme
- Remote Sensing Programme
- Research and Development in Space Sciences and Technology

DOS implements these programmes through, mainly, Indian Space Research Organisation (ISRO).

Space Commission

The Space Commission was established alongside the Department of Space in 1972. It serves as the apex policy-making body for India's space programme. It formulates the policies and oversees the implementation of the Indian space programme to promote the development and application of space science and technology for the socio-economic benefit of the country.

Constitutional and Legal Framework of Indian Space Law

India does not currently have a single comprehensive Space Act governing all space activities. Instead, its space sector is regulated through a combination of constitutional provisions, international treaty obligations, government policies, executive institutions, and sector-specific regulations. As a signatory to the **Outer Space Treaty** (1967) and other UN space treaties, India is also required to comply with international obligations.

Relevant Constitutional Provisions

Although the Constitution does not expressly mention "space", several constitutional provisions empower the Union Government to regulate space activities:

Constitutional Provision	Relevance
Article 51	Encourage respect for international laws and treaties
Article 73	Grants the Union executive power over certain matters; in this case space-research
Union List- Entry 31	Covers posts, telegraphs, telephones, wireless, broadcasting and other communication systems
Union List- Entry 69	Relates to scientific and technical institutions of national importance, supporting national space research.

Department of Space (DOS)

The Department of Space is the principal administrative authority responsible for implementing India's space programme. It has the following functions along with the previously-mentioned programme implementations:

- formulates national space policies
- administers ISRO and other space institutions
- promotes space science and technology
- oversees satellite, launch vehicle and application programmes
- represents India in international space cooperation

Indian National Space Promotion and Authorization Centre (IN-SPACe)

The Government established IN-SPACe in 2020 as an autonomous agency under the Department of Space. IN-SPACe, is responsible to promote, enable authorize and supervise various space activities of the NGEs that includes the building of launch vehicles and satellites and providing space-based services; sharing of space infrastructure and premises under the control of DOS/ISRO; and establishment of new space infrastructure and facilities.
To facilitate private sector participation, the government has created the Indian National Space Promotion and Authorisation Centre (IN-SPACe), as a single-window, independent, nodal agency which functions as an autonomous agency in the Department of Space (DOS).

NewSpace India Limited (NSIL)

In order to commercially use the products and services emanating from the Indian Space Programme the "NewSpace India Limited" has been incorporated in March 2019, as a wholly owned Government Company under administrative control of the Department of Space.
NSIL is responsible for:

- commercialising ISRO technologies;
- marketing launch services;
- leasing satellite capacity;
- transferring space technologies to industry;
- promoting commercial utilisation of Indian space capabilities.

DOS, IN-SPACe, NSIL : What is the difference?		
DOS	IN-SPACe	NSIL
Government body responsible for formulating India's space policy and overseeing the national space programme, including ISRO.	Independent regulatory and facilitation body that authorises and promotes private-sector participation in space activities.	Commercial arm of the Department of Space that commercialises ISRO technologies, services and launch capabilities.
In brief, Policy and Oversight	In brief, Regulation and Facilitation	In brief, Commercialisation

India's International Obligations

As discussed previously, Under Article VI of the Outer Space Treaty, States bear international responsibility for national space activities, including those conducted by non-governmental entities. Since India is a part of the following treaties:

- Outer Space Treaty (1967)
- Rescue Agreement (1968)

- Liability Convention (1972)
- Registration Convention (1975)

It must ensure that its national activities comply with these international obligations.

Indian Space Policy, 2023

The Indian Space Policy 2023 was formulated as an overarching, composite and dynamic framework to implement the reform vision of the Cabinet. The Government sought to provide regulatory certainty to space activities by various stakeholders, in order to create a thriving space ecosystem by enhancing participation of Non-Government Entities.
The Policy seeks to expand India's space capabilities while encouraging a greater commercial presence in space. It also aims to use space technology for socio-economic development and national security.
This policy is applicable to any space activity to or from Indian Territory or within the jurisdiction of India including the area to the limit of its exclusive economic zone.

Vision and Strategy

The policy's objectives include:

- To augment space capabilities
- enable, encourage and develop a flourishing commercial presence in space
- use space as a driver of technology development and derived benefits in allied areas
- pursue international relations
- create an ecosystem for effective implementation of space applications among all stakeholders

This vision demonstrates that India's space programme is not only focused on government-operated missions but also on overall economic and technological development.

To achieve these, the policy calls for a specific strategy, pushing the government to focus on:

- Encouraging advanced Research & Development in space sector
- Providing public goods and services using space technology for national priorities
- Creating a stable and predictable regulatory framework to provide a level playing field to Non-Government Entities in the Space sector through IN-SPACe.
- Promoting space-related education and innovation
- Using space as a driver for overall technology development and increasing awareness on space activities.

The policy further states that Indian consumers of space technology or services whether from public or private sectors, are free to directly procure them from any source, whether private or public.

Non-Governmental Entities

The Policy permits NGEs to undertake a broad range of space activities, subject to applicable laws and authorisation requirements. These activities include:

- establishment and operation of space objects
- development and operation of launch vehicles
- establishment and operation of launch infrastructure
- establishment of space transportation systems
- satellite-based communication services
- remote sensing
- space-based applications
- manufacture of space-related components and systems

What are Non-Government Entities?
A non-governmental entity (NGE) is any organization, business, or private group that operates independently of government ownership or direct state control. This not only includes NGOs that voluntarily work for charity but also private for-profit commercial corporations.

Role of INSPACe

The Policy assigns INSPACe the function of an autonomous Government organization, to promote and authorize space activities in the country. It performs an important regulatory and facilitative function between the Government, ISRO and private space companies. Its responsibilities are:

- acting as the single-window agency for authorisation of space activities
- promoting the space sector
- enabling private entities to access relevant space infrastructure
- establishing appropriate safety and security requirements
- facilitating private-sector participation
- providing regulatory certainty to NGEs

Role of ISRO

ISRO, as the National Space Agency, focuses primarily on research and development of new space technologies and applications.
The Policy envisages ISRO:

- developing new space technologies and systems;
- undertaking advanced research and development;
- developing space transportation and satellite technologies;
- pursuing space science and exploration;
- sharing technologies and technical expertise where appropriate; and

- transitioning mature systems and technologies to industry.

Role of NSIL and DOS

The policy states that NSIL will function as a Public Sector Undertaking under the Department of Space. Its responsibilities include commercialising space technologies through the following activities:

- manufacture, lease, or procure space components, technologies, platforms and other assets from the private or public sector, on sound commercial principles.
- service the space-based needs of users, whether Government entities or NGEs, on sound commercial principles.

Meanwhile, the DOS assists the other departments by:

- implementing the Government's space policy
- overseeing the space sector
- promoting space science and technology
- coordinating national space activities
- facilitating international cooperation
- ensuring that space activities contribute to national development

The Policy therefore creates a broad institutional division of responsibilities rather than placing all space-related functions within ISRO.

Significance

The key aspect of the 2023 Policy is reflected in its vision statement, which advocates for a flourishing commercial presence in space. In order to achieve this, the 2023 Policy attempts to encourage greater private sector participation in space activities by promising a stable and predictable regulatory framework. IN-SPACe is showcased as a single window for all aspects of authorisation for space activities. The 2023 Policy attempts to provide clearly defined roles for different agencies relating to space activities in India.

Limitations

The 2023 Policy is stipulated as a document to promote private sector participation in space activities by different means including providing for regulatory certainty. Yet, the most significant aspect of providing a legal regulatory framework is within the domain of the legislature. Permitting any private space activity in India should be preceded by legislative backing.

The policy itself is described as a framework for the government to implement. This implies that

detailed regulation continues to depend upon applicable laws, rules, guidelines and authorisation mechanisms.

Important Laws and Regulations Governing Space Activities in India

As mentioned previously, India does not presently have a single comprehensive statute governing all space activities. However, regulation of the space sector is spread across existing legislation, government policies, regulatory frameworks, and authorisation mechanisms. While the Indian Space Policy 2023 provides the policy framework, more specific instruments regulate areas such as satellite communications, remote sensing and telecommunications.
This means that regulation may depend upon:

- existing legislation applicable to particular activities;
- Government policies;
- sector-specific guidelines;
- authorisation requirements;
- international treaty obligations; and
- regulatory mechanisms established under the Department of Space and IN-SPACe.

The absence of a single Space Act can make the regulatory framework scattered. At the same time, it gives the Government flexibility to respond quickly without waiting for legislation to be enacted. This balance can act as a boon as well as a bane.

Norms, Guidelines and Procedures for Implementation of Indian Space Policy 2023 (NGP)

The Norms, Guidelines and Procedures for Implementation of Indian Space Policy-2023 in respect of Authorization of Space Activities (NGP) were issued by IN-SPACe in May 2024. They provide a detailed regulatory framework for implementing the principles established by the Indian Space Policy 2023.
It establishes the framework through which Non-Governmental Entities (NGEs) can seek authorisation to undertake space activities. IN-SPACe provides a stable and predictable regulatory framework for NGEs. The NGP provides the operational framework through which this regulatory function is carried out.
The framework addresses authorisation of activities involving areas such as:

- launch vehicles and facilities
- satellite operations
- communication
- remote sensing
- space transportation

Satellite Communication Regulation

Satellite communication is governed through a combination of space-sector policy and India's broader telecommunications framework under the Satcom Policy. The framework addresses the use of satellite systems for communication services, including areas such as:

- telecommunications
- broadcasting
- television
- data transmission

SATCOM Policy
India’s Satellite Communication (SATCOM) Policy provides the framework for the use of satellite-based communication services, including access to satellite capacity and regulation of related activities.

Remote Sensing

Remote sensing involves the collection of information about the Earth using satellite-based sensors. India regulates remote-sensing activities through the Remote Sensing Data Policy (RSDP) and subsequent frameworks. Remote sensing has applications in:

- agriculture
- natural-resource management
- environmental monitoring
- disaster management
- urban planning

Telecommunications Act, 2023 and Satellite-Based Services

The Telecommunications Act, 2023 replaced the older Indian Telegraph Act, 1885 and Indian Wireless Telegraphy Act, 1933 framework with a modern telecommunications statute. It provides for regulation of telecommunications services and telecommunications networks.

Space Debris and Sustainability

India does not currently have a standalone Space Debris Act. Debris mitigation and space sustainability are addressed through India's implementation of internationally recognised guidelines.
ISRO's System for Safe and Sustainable Operations Management (IS4OM) coordinates India's

space-sustainability activities. Its activities include monitoring space objects, assessing close approaches and predicting atmospheric re-entry.

IS4OM
ISRO System for Safe & Sustainable Space Operations Management (IS4OM) is ISRO's system for Space Situational Awareness (SSA) and space sustainability. It monitors space objects and debris, assesses collision risks, and supports collision avoidance and safe end-of-life operations of Indian space assets.

Space Situational Awareness

Space Situational Awareness (SSA) refers broadly to the ability to monitor and understand the space environment, including the location and movement of space objects. It has been developed through ISRO and IS4OM.
The Indian Space Situational Assessment Report (ISSAR) records India's assessment of the space environment and includes matters such as:

- space-object population;
- close approaches;
- collision-avoidance manoeuvres;
- atmospheric re-entry;
- space debris; and
- other environmental hazards.

Emerging Challenges in Indian Space Law

India's space sector has undergone significant transformation, moving from a predominantly government-led programme towards a more diverse ecosystem involving private companies, start-ups and international partners.
However, several areas still require development, including regulation of commercial activities, space debris, space tourism, national security and the legal sphere.

Commercialisation

The Indian Space Policy 2023 encourages Non-Governmental Entities (NGEs) to participate across the space value chain, including satellite development, launch services, space-based applications and other commercial activities. However, it raises the following legal questions which are yet to be solved:

- How should commercial space activities be authorised and supervised?
- Who bears liability when a private space object causes damage?
- How should commercially sensitive space data be treated?

Space Debris

What is Space Debris?
Space debris is any human-made object in orbit that no longer serves a useful purpose, including defunct satellites, discarded equipment and rocket stages, and fragments from the breakup of satellites and rocket stages.

Space debris is becoming an increasingly important challenge as the number of satellites and other objects in orbit continues to grow. A collision involving debris can damage or destroy functioning spacecraft as well as create additional debris. While India has developed Space Situational Awareness (SSA) capabilities to monitor space objects and assess potential collision risks, eliminating the issue as a whole is yet to be achieved.

Space Tourism

Space tourism and commercial human flight raises concerns regarding passenger safety, licensing, insurance, emergency response and liability for accidents. The existing international space-law framework was largely developed during an era when space activities were conducted by States and government agencies. Thus existing frameworks may not be able to address private individuals and their participation in space activities.

National Security

Space technology has important civilian applications, but many space systems also have implications for national security and defence. This creates a regulatory challenge because India must simultaneously encourage the peaceful and commercial use of outer space while protecting national security interests

Legal Drawbacks

As discussed previously, India's present framework does not consist of a single Indian Space Act. Instead, it relies on several treaties, policies, legislation, and IN-SPACe regulation. This provides considerable flexibility but can also create uncertainty in certain aspects. However, beyond this, India may also face challenges with legal questions that can be raised in the future. These include:

- Space Resource Utilisation: The extraction and use of resources from the Moon or other celestial bodies raises questions concerning the non-appropriation principle.
- Space Traffic Management: The increasing number of satellites creates a need for better coordination of orbital activities.
- Data and Privacy: The increasing availability of high-resolution Earth-observation data creates questions involving data access, commercialisation, national security and privacy.

The future development of Indian Space Law will therefore require a balance between innovation and regulation, commercial growth and public interest, and national interests and international obligations.

Conclusion: Indian Space Law

India's space programme has evolved significantly since the establishment of the Indian National Committee for Space Research (INCOSPAR) in 1962. What began primarily as a government-led programme focused on using space technology for national development has developed into a broader space ecosystem with research and commercial activities.

The development of ISRO, the Department of Space, IN-SPACe and NSIL has resulted in a more specialised institutional structure for India's space sector. While The Indian Space Policy 2023 encourages private participation.

However, several challenges still remain. Space debris, liability, commercial human spaceflight, national security, private-sector regulation and space traffic management are likely to become increasingly important as India's activities in outer space expand.

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