

International Space Law: An Overview

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Scheme of Lecture

- Space Technology and Space Law
- Benefits Space Technology
- Regulations and Why we need Space Regulations?
- Definitions and Sources of Int. Space Law
- Development International Space Law - First Phase, Second Phase and the Third Phase
- Contemporary Issues of Space Law and Technology:
- Commercialization of Space Activities, Space Tourism, Space Debris, Space Militarization, Human Habitation, IPR Protection, Environmental Issues etc.,
- National Space Law – Need of the Hour
- Conclusion

Space Technology and Space Law

- One of the significant achievement of man in the 20th century was leaving this planet
- This was only result of efforts through generations to take flight of fantasy into outer space through mythology, poetry, fiction etc...
- Scientists predicated the theoretical possibility of space voyages by 16th century, but it became possible only with the successful launch of the first Sputnik by former Soviet Union on 4th October, 1957.
- Yuri Gagarin became first man in space on 12th April 1961, and with in a decade Neil Armstrong and Edwin Aldrin landed on the Moon on 16th July, 1969. Now new developments including Space stations, space hotels, space tourism, Space colonization etc..
- With all these developments we have entered new era---- era of solving the problems of the earth from space

Benefits Space Technology

Space Technology involves:

- Data acquisition
- Data Processing
- Data Interpretation

Today Space Technology used for:

- Application of Information Technology in the form of GIS
- Satellite Remote Sensing, Satellite photogrammetry
- Satellite communication, Internet
- Space-based telecommunications infrastructure
- Meteorological information analysis
- Forestry Analysis, Agricultural crop acreage and yield estimation
- Drought monitoring and assessment
- Flood monitoring and damage assessment
- Land use and land cover mapping
- Water resources management
- Groundwater targeting
- Marine resources survey, Urban planning
- Mineral targeting and environmental impact assessment etc.

What is International Space Law (ISL)?

- What is Law and International Law?
- What is ISL? International Space Law is a branch of Public international law
- ISL can be defined as “body of rules governing the use of outer space for the benefit of mankind.”
- International Space Law (ISL) is the law governing outer space.
- In Russia it is called Cosmic Law. Some European Countries prefer to call it as Astrolaw. Some call it as Extra-terrestrial laws.
- Impact of Space Technology on ISL and its effect on governments, on societies and ultimately on individuals creating a new law --- the Law of Outer Space.
- Its effect on governments, on societies and ultimately on individuals creating a new law --- the Law of Outer Space.

Why Space Regulations?

- Why Space Law and Space Regulations?
- What is Regulation and Why we have to Regulate Outer Space Activities?
- Regulations and Space Regulations
- National Space Regulations
- Bilateralism and Bilateral Space Agreements,
- Regionalism and Regional Space Regulations
- Global or International Space Regulations
- With this technological development in outer space, we have to abide by some law as a custom to the new society i.e., society of outer space.

Why We Required Space Law?

- Use of Technology for betterment of humanity
- Protection of IPRs etc.
- Purpose of ISL is to regulate and minimize the potential of future conflicts .
- Space law has tried to define those rules in outer space – the new rights and obligations, the procedures and substances in the ISL.
- ISL should be in consonance with the emerging technology as well as the developments in the society.
- Otherwise with the increasing number of satellites, space debris we will face a great disorder in this society.

Sources of ISL Art. 38 of Statute of ICJ

- (a) International convention whether general or particular establishing rules expressly recognized by the contesting states.
- (b) International Customs as evidence of a general practice accepted as law.
- (c) General Principles of law recognized by civilized nations.
- (d) Subject to article 59 judicial decisions and juristic works as subsidiary means for the determination of rules of law.
- This article not exhaustive-does not make reference to resolutions of the GA of the UN
- International Law dynamic and fast changing

Development of ISL

■ International Space Law has three Phases :

1. First Phase (1957-1963)
2. Second Phase (1967-1979)
3. Third Phase (Post 1980)

■ Current Developments in ISL Regime

1. Globalization & its Impact on Space Law
2. Commercialization
3. Privatization
4. Emerging Legal Issues

First Phase (1957-1963)

- It is a Soft Law Phase.
- UNGA Res. 1148(1957) : peaceful uses of outer space
- UNGA Res. 1348(1958) : legal framework for regulation of outer space & established ad-hoc UNCOPUOS Committee
- UNGA Res. 1472(1959) : Permanent COPOUS committee consisted of 24 members & other legal issues
- UNGA Res. 1721(1961) : Exploration of outer space in accordance with UN Charter & principles of IL.
- UNGA Res. 1962(1963) : Declaration of Legal Principles Governing the Activities of States in the Exploration & Use of Outer Space which became foundation of Outer Space Treaty in 1967

Second Phase (1967-79)

■ It is a Hard Law Phase.

1. Treaty on Principles Governing the Activities of States in the Exploration & Use of Outer Space, Including the Moon & Other Celestial Bodies (1967)
2. Agreement on the Rescue of Astronauts, the Return of Astronauts & the Return of Objects Launched into Outer Space (1968)
3. Convention on International Liability for Damage Caused by Space Objects (1972)
4. Convention on Registration of Objects Launched into Outer Space (1975)
5. Agreement Governing the Activities of States on the Moon & Other Celestial Bodies (1979)

Third Phase (Post 1980)

- It is also a Soft Law Phase again.
- The Principles Governing the Use by States of Artificial Earth Satellites for Intl. Direct Television Broadcasting (1982)
- The Principles to Remote Sensing of Earth from Outer Space (1986)
- The Principles Relevant to the Use of Nuclear Power Sources in Outer Space (1992)
- The Declaration on Intl. Cooperation in the Exploration & Use of Outer Space for the Benefit & in the Interest of All States, Taking into Account the Needs of Developing Countries (1996)

The Outer Space Treaty, 1967

This Mother Treaty of Space Law consists of 17 Articles:

- Art I : The exploration & use of outer space for benefit of mankind,
- Outer space free for exploration without discrimination,
- Freedom of scientific investigation
- Art. II : Not subject to national 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.
- Art. III: States should carry out their activities in accordance with IL including UN charter
- States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding

OST, 1967 Cont....

- Art. IV : Prohibition of nuclear weapons in outer space
- 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.
- Art V : Astronauts are the envoys of mankind
- 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, distress, or emergency landing on the territory of another State Party or on the high seas.
- Art VI : Intl. responsibilities & national activities
- 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,

OST Cont..

- Art VII : Intl. liability for Space Activities
- 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
- Art VIII: Launching states jurisdiction over their personnel & objects
- 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

OST Cont..

- Art IX: Environmental Pollution—not harmful experiments
- 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, including the Moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty.
- Art X: Reciprocal arrangements
- the States Parties to the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States.

OST Cont..

Art XI : Intl. cooperation in exploration of outer space for peaceful purposes: State Parties agree to inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of such activities

Art XII: All installations, station, equipment's open to other states: All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity.

Art XIII: Interstate & intergovernmental activities: State parties, 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.

Art XIV-XVII: Deals with final provisions

- **Article XIV:** This Treaty shall be open to all States for signature.
- **Article XV:** Any State Party to the Treaty may propose amendments to this Treaty
- **Article XVI:** Any State Party to the Treaty may give notice of its withdrawal from the Treaty one year after its entry into force by written notification
- **Article XVII:** This Treaty, of which the English, Russian, French, Spanish and Chinese texts are equally authentic,

The Rescue Agreement, 1968

- This treaty is in elaboration of the Arts. 5 and 8 of the OST.
- This treaty consists of 10 articles.
- The first 4 deals with Notification, Rescue and Return of the astronauts.
- Art. 5 deals with Notification of accidents, Recovery and Return of space objects.
- Art. 6 Define the term launching authority.
- Arts 7-10 deal with final provisions which includes accession, amendment, withdrawal and authenticity of language.

The Rescue Agreement, 1968

1. Notification by states on whose territories astronauts/ space objects in emergency are discovered
2. all possible steps to rescue them
3. assistance in search and rescue operations in high seas
4. Obligation on any contracting party for safe and prompt return to the launching authority
5. Obligation on recover and return a space object or its component parts
6. "launching authority" defined
7. entry into force upon ratification by five Governments
8. Artic.es 8-10 deals with final provisions

The Liability Convention, 1972

- Concept of Liability- Civil and Criminal Liability
- Types of Liability- Direct-Indirect, Vicarious Liability(joint & several)
- Aims of Liability : create & define applicable concepts of liability, to define the compensable damage & to provide for dispute resolution
- Grounds & Kinds of Liability : Individual, Joint, several & absolute liability
- Claims procedures & establishment of claims commission
- Elaboration of Art. 6 of OST
- Convention consists of 28 Articles.
- Article 1-13 deals with concept of Liability, Absolute Liability, Joint and several Liability, Claims by diplomatic channels and Liability based on I.L
- Article 15-20 deals with claims commission
- Article 21-28 deals with the final provisions.

Liability Convention Cont..

1. Definitions: The term “launching” includes attempted launching; *The term “launching State” “space object” includes component parts of a space object as well as its launch* 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
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 vehicle and parts thereof
3. For damage occurring in place other than on surface of earth, liability is based on fault.
4. Joint/several liability if more than one state is responsible
6. Exoneration to compensate damage in case of gross negligence on the part of claimant state
7. Non applicability of provisions in respect of nationals of launching State
8. Procedure for claiming compensation. One year time limit.
12. Compensation to be determined as per international law
- 14 -20. Settlement of disputes – Claims commission & procedures

The Registration Convention, 1975

- Elaboration of Art. 8 of OST
- Object of Convention : Preserving space for peaceful purposes
- Two functions- Complete Information about the activities and Determination of Damages
- Information regarding the launching objects
- Registration helps in identifying the space craft in case of damage
- Requirement of Registration
- Registration with UN Secretary General

Registration Convention Cont..

1. One of the objectives identified in the preamble is that a mandatory system of registering objects launched into outer space would, in particular, assist in their identification and would contribute to the application and development of international law governing the exploration and use of outer space.
2. The convention defines “launching State” as (i) a State which launches or procures the launching of a space object or (ii) a State from whose territory or facility a space object is launched;
3. The launching State shall register the space object by means of an entry in an appropriate registry and also shall inform the Secretary-General of the United Nations of the establishment of such a registry.
4. In case of two or more launching States, one of them shall register
5. The Secretary-General of the United Nations shall maintain a Register containing following information furnished by launching state or the state of registry of the space object

Registration Convention Cont..

Each State of registry shall furnish to the Secretary-General of the United Nations, as soon as practicable, the following information concerning each space object carried on its registry:

- (a) Name of launching State or States; (b) An appropriate designator of the space object or its registration number; (c) Date and territory or location of launch; (d) Basic orbital parameters, including:*
 - (i) Nodal period; (ii) Inclination; (iii) Apogee; (iv) Perigee; (e) *General function of the space object.*
- There shall be full and open access to the information in this Register.
- States possessing space monitoring and tracking facilities, respond to requests of a state for assistance in the identification of the a registered space object.
- Provisions apply to international intergovernmental organization also.
- Consider the question of review ten years after the entry into force.

The Moon Treaty, 1979

- Similar to OST, 1967 extending to moon & other celestial bodies.
- The main purposes of the to be established shall include:
 - (a) The orderly and safe development of the natural resources of the Moon;*
 - (b) The rational management of those resources;*
 - (c) The expansion of opportunities in the use of those resources;*
 - (d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the Moon, shall be given special consideration*

Moon Treaty Cont..

- 1. Provisions applicable to Moon and also to other celestial bodies within the solar system.
- 2. All activities of exploration and use, shall be carried out in accordance with international law
- 3. Use exclusively for peaceful purposes
- 4. Exploration and use shall be the province of all mankind- with obligations for cooperation
- 5. Informing the Secretary-General of the UN as well as the public and the international scientific community, to the greatest extent feasible and practicable of the activities - Coordination with other States.
- 6. Freedom of scientific investigation on the Moon - and rights to collect on and remove from the Moon samples
- 7. Obligation for measures to prevent the disruption of the existing balance of its environment – provision for international scientific preserves on the moon

Moon Treaty Cont..

- 8. States are permitted to land their space objects on the Moon and launch them from the Moon; *place their personnel, space vehicles, equipment, facilities, stations and* installations anywhere on or below the surface of the Moon
- 9. Provision to establish manned and unmanned stations, without impeding or obstructing other states
- 10. measures to safeguard the life and health of persons on the Moon
- 11. Moon's natural resources are the common heritage of mankind - not subject to national appropriation - neither the surface nor the subsurface shall become property of any State - exploration without discrimination and on the basis of equality - an **international regime** to be set up to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible- states shall inform S-G UN and others

Moon Treaty Cont..

- 12. jurisdiction and control over their personnel, vehicles, equipment, facilities, stations and installations - In the event of an emergency, use of facilities and stations of other State parties.
- 13. informing on sighting of any unintended landing
- 14. international responsibility for national activities on the Moon
- 15. reasonable advance notice of a projected visits and activity to allow precautionary measures and consultations – provisions and obligations for consultations- settlement of disputes/ differences
- 16. Applicability to international organisations
- 17. Amendments procedure
- 18. Consideration for review, ten years after the entry into force

DBS Principles

- Satellite were considered important from the beginning of the space age.
- Earlier point to point satellites were replaced by DBS.
- DBS are easy, Cost effective and Global coverage for example: three satellite provide worldwide coverage.
- Problems and Prospects:
- Useful for developing countries for examples ATS Program by NASA and ISRO were conducted by SITE and STEP Programmes.
- Controversial issues including sending and receiving states, threat to national security, free flow of information, cultural imperialism, prior consent and DBS Technology was misused by Developed Country.

DBS Principles

- 1974 G.A adopted resolution requesting COPUS to formulate principles on DBS. In the same year working group established.
- Finally, In 1982 G.A adopted resolution 37/92 on 10th December,1982 on principles governing the use by states of artificial earth satellite for international television broadcasting DBS: Crucial Role: ensures the public's right to receive a diversity of independent information
- international direct television broadcasting to be carried out in a manner compatible with the sovereign rights of the states and with the right of everyone to seek, receive and impart information and ideas.
- Emphasizes on :
 - a. applicability of IL
 - b. Access of broadcasting rights to all nations
 - c. International cooperation in information sharing
 - d. State Responsibility on damage caused

DBS Principles

- Important principles including purpose and objectives, applicability of I.L, Rights and Benefits, International Cooperation, Peaceful Settlement of Disputes, States Responsibility, Rights and Duty to consult by aggrieved state, Copyrights and neighboring rights, Notification to U.N., Consultation and agreement between states etc.
- Other relevant law including ITO Regulations, International Frequency regulation, etc.

Remote Sensing and its applications

P1(a) UN Principles Relating to Remote Sensing of the Earth from Outer Space, 1986 *"Remote Sensing" means the sensing of the Earth's surface from space by making use of the properties of electromagnetic waves emitted, reflected or diffracted by the sensed objects, for the purpose of improving natural resources management, land use and the protection of the environment*

- **Civilian:** Agriculture and soil; Forest, environment and biodiversity; Water management and provision; Disaster support; hurricane Katrina; Land use including mapping; Weather and climate forecasting; Ocean management including fishing zones and coastal mapping
- **Commercial:** Google, Microsoft, and Yahoo! are among the most popular commercial entities that offer satellite and aerial imagery services. Some specific developments are: Google Earth, Microsoft Live Local, Yahoo! Maps, Geo Eye, A9.com
- **Military:** Resource deployment, mission planning, targeting, battle damage assessment, intelligence gathering, and trend analysis.

Principles relating to remote sensing of the earth from outer space

- Adopted by UNGA in 1986
- Remote Sensing activities are to be conducted for the benefit and in the interest of all mankind
- promotion of international cooperation and technical assistance
- protection of the environment and protection of the human kind from natural disasters
- sensed states right to have access to the data on a non-discriminatory bases
- regional cooperation in the establishment and operation of collection, storage, processing and interpretation facilities.
- Duties for states that are conducting sensing activities as well as the rights of those states that are being sensed.
- Duty to consult with states being sensed as well as an obligation to share data with sensed states on a non-discriminatory basis.

Remote Sensing and legal

- various legal issues related to GIS are :
- IPR/Copyright and neighboring rights
- Data Protection
- Confidentiality /data privacy
- Competition law
- Licensing
- Consumer protection/fitness for purpose
- Product and services liability
- Censorship and other information content related issues
- Health and safety legislation
- Patent Law---especially for GIS and RS systems become more complex.

Principles relating of nuclear power sources

- Need felt after the Cosmos 954 incident.
- Aim: minimize the risk of harmful radiation
- Usage of NPS to those space missions which cannot be operated by non-nuclear energy sources in a reasonable way
- The use of nuclear reactors in the interplanetary missions may be permitted in sufficiently high orbits.
- States to ensure that NPS do not become critical before reaching their operating orbits
- radioisotope generators should be designed to be capable of withstanding the atmospheric re-entry and surface impact without spreading the radioactive material into the environment.
- States to use NPS in conformity with IL
- state launching the NPS to make a thorough safety assessment of the mission which should also be made known to the public.
- Risk of NP source falling on earth's surface : Launching state to inform to the potential victim state.
- International Responsibility of States for their national activities

Declaration of outer space activities

- Space exploration is for the benefit and in the interests of all mankind
- Space is free for all states to explore on the basis of equality in accordance with international law
- Space and celestial bodies are not subject to national appropriation
- International law applies to all activities in the interest of peace and security and promoting co-operation and understanding
- State responsibility for private space activities
- Activities must adhere to the principle of co-operation, and respect the interests of all states.
- Ownership rights of objects launched into space are not affected by their passage into space or their return to Earth, and the launching state that owns them retains responsibility for the objects and people on their registry

Conti..

- States are liable for damage caused to other states or persons by space objects (or parts thereof).
- The states liable for the damage are the launching (or procuring) states and the states from whose territory or facilities the damaging object was launched.
- Astronauts are the envoys of mankind in outer space, and in the event of an accident or emergency landing must assist in the rescue and return of the astronaut(s) to the state of registry of their spacecraft.

Changing Scenarios of Space Technology

- Focus of Space activities are shifting from Government to private activity.
- Commercial space activities have replaced government space programs as the dominant source of space industry revenues.
- Concern has increased over the legal status of space commerce either at the national or international level.
- Increased capabilities to use space in number of ways have brought such issues to the forefront.
- With such growing trend towards commercialization and privatization of space activities, a greater understanding is needed regarding which activities in outer space will be allowed and which will be challenged.
- This is exactly where the law of outer space steps in.

The COPUOS and Contemporary Issues

- The COPUOS has been instrumental in negotiation and drafting five international treaties and five UN General Assembly Resolution so far.
- The committee carried out several scientific, technical, economic and social studies on space technology and its applications.
- It organized three United Nations conferences on the exploration and peaceful uses of outer space – the UNISPACE 1968, UNISPACE 1982, and UNISPACE 1999.
- The committee and its sub-committees are currently deliberating on several vital issues, such as the review and revision of the principles relevant to the use of nuclear power sources in outer space; matters relating to the definition and delimitation of outer space; utilization of the geostationary orbit without prejudice to the role of the ITU; and a review of the status of the five international legal instruments governing outer space.
- The COPUOS is considering the inclusion in its orbit of commercialization and privatization of space activities; the role of non-state agencies in the use, exploration of outer space; space debris; intellectual property rights; space

Commercialization & Privatization

- Increase of Private Players and Collaborative Launches: Many small countries are gradually becoming Launching States

Liability- Two Types : Fault Based and Absolute. Conflict between Article VI and VII of OST and Art. V and VI of LC, Inclusion of Private Players – But Space Treaties contemplate liability of state not private players

- Why ISL doesn't specifically cater to legal issues revolving commercialization?
- Answer: Principle of Non-Interference with Domestic Laws
- IL doesn't seek to override domestic laws but supplement it. Every nation prefers to regulate its commercial space industry. This puts various launch providers in unequal levels of competition
- Some Countries: Heavy regulatory burden -> increase in financial and technical barriers -> Related Costs passes to Consumers
- Private Launch Service Providers have additional regulations. They have to compete with not only with their counterparts across the world but also with their government counterparts which are heavily subsidized.

Space Tourism: Legal Issues

When space law was originally developing, the status of spacecraft passengers presented no challenge as only astronauts and cosmonauts participated in space flights.

Now: Space Tourists; Dennis Tito : First Space Tourist (2001)

Space Tourism: Legal Status:

Space Tourists: Astronauts=Envoys of Mankind? Rescue Agreement- Space craft in Distress – State of Landing to provide assistance to astronauts or space craft personnel in distress. Thus no liability towards space tourists, Scholars across the world are advocating to give them the status of astronauts. But nothing conclusive, Space Insurance for Tourists as well?

Damage Caused to Space Tourists – Who is liable? No answer under ISL

Virgin Galactic, a global commercial space tourism group, has entered the Indian market with an eye on wooing Indians into space – albeit at a fee of \$200,000.

Space debris and Legal Issues

Space debris, also known as orbital debris, space junk, and space waste, is the collection of defunct objects in orbit around Earth. This includes everything from spent rocket stages, old satellites, and fragments from disintegration, erosion, and collisions.

■ Why Space Debris is a problem?

Small Unit is Capable of destroying Crucial Satellites. Occupying crucial orbits, Defunct Satellites are no longer maneuvered. Environmental Issues

Space Debris and Legal Issues; ISL- does not deal with Debris. Thus regulation only by inference, Article VIII of OST: State of Registry to retain jurisdiction and control over space object, including Defunct Satellites, Liability Issues-Attribution of Liability.

How will be attribute Fault and to whom to determine liability?, Assuming Such Identification is made. Defence with LS – Space Debris v common consequence of Space Activities, Conflict between State Responsibility and State Liability, Intellectual Property Issues, Environmental Concerns under Article IX of the OST

Militarization of Outer Space

Legal Provisions under ISL prohibiting Militarization

- Space Race Began nearly a decade after WWII. Bipolar World. The threat from uncontrolled military expansion into space was recognized very early in the space race
- Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space 1962: OST: States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner; OST: Art. III: Application of UN Charter to space activities. No Use of Force in Outer Space
- UNGA Resolution: ‘Prevention of Outer Space Arms Race’ (2000)
- Many nations including US have used these provisions in keeping the military functions of their satellites hidden
- Moon Agreement: Categorically bans militarization and caters to the loopholes so created. But Moon Agreement has barely been ratified by any state.,

Human Habitation in Outer Space

Legal Issues Involved:

- How will we determine distribution of property?
 - a. *Civil Law Countries* – He who develops a barren land owns it.
 - b. *Common Law Countries* – All property belong to govt.
Members merely have the right to enjoy. Hence we pay prop tax and this is the underlying principle of land acquisition laws.
- Neither of the two applies to Outer Space.
- If Habitation allowed, then possibility of another colonization
- Applicable Laws? Sovereign Laws of state cannot extend to Outer Space
- Liability becomes Fault Based
- Violation of Fundamental Principles of ISL
- No waste disposal mechanism

Environmental Concerns

- Pollution of the Environment of Outer Space by:
 - Space Debris and Defunct Satellites. Space Exploration. E.g. US wants to blast Moon in order to melt the ice into water
 - Types of Pollution is Space Related Activities:
 - Chemical Pollution, Biological Pollution – Backward and Forward Contamination, Radiological Pollution
- Legal Provisions: Article IX of OST: State Parties to avoid harmful contamination of Outer Space or adverse changes in the Earth's environment. States must conduct international consultations before the proceeding with activities that would cause harmful contamination of the outer space environment.
 - Harmful Contamination in Outer Space v. Adverse Change in Earth Environment

Commercial human spaceflights and Legal Issues

- Humans will soon routinely travel into outer space on spacecraft built and operated by private companies.
- The first of these flights will be suborbital spaceflights, where the spacecraft launches from and returns to the same spaceport and is in outer space for only a few minutes.
- By the middle of the decade, private companies are expected to take passengers on orbital spaceflights to the International Space Station (ISS) and privately operated space habitats.
- Commercial human spaceflight will raise many complicated legal issues.
- The FAA is already in the process of establishing licensing and safety criteria for private spacecraft, a process that will continue to evolve as the industry matures.
- Space companies, legislatures and courts will need to address questions of liability in the event of accidents, the enforceability of liability waivers, insurance requirements, the sufficiency of informed consent for passengers. Indeed, Florida, New Mexico, Texas, and Virginia have already passed laws limiting the liability of space tourism providers under state tort law.

National Space Law – Need of the Hour

- The Indian space programme has not only achieved considerable self-reliance in space technology as wished by Dr. Vikram Sarabhai ,for national development but also promotes its commercial utilization.
- In the early Seventies the Government of India set up a space commission to oversee the entire space drive in the country and advise the government on various associated aspects—including the legal framework and operational mechanisms.
- Accordingly, programmes for partnership with the industrial sector are organized under four closely linked fronts. These are:
- (i) technology transfers from the space programme to industry; (ii) technological consultancy to industry; (iii)utilization of industry's own technological expertise by the space programme; and (iv) services from the industrial sector.

National Space Law – Need of the Hour

- In the 1980s the Indian space efforts witnessed a quantum jump in terms of the operational satellite system, development of launch capability, execution of large-scale application projects, and other associated aspects
- Besides, national accomplishments, India could also get recognition in the international arena as one of the major space-faring nations in the world, which in turn opened up global opportunities and demand for Indian services.
- The Antrix Corporation, the commercial wing of the Indian Space Research Organisation (ISRO), was established in 1992 with the objective of marketing space products and services in India and abroad.

National Space Law – Need of the Hour

- During the last two decades increasing emphasis on reducing governmental budgets worldwide has forced the world's space faring nations to reassess their civil space programs. India also follows this trend.
- But India, like many other countries, has not enacted any space legislation. Is it required to enact one? Does it need one?
- Has its absence impeded India's space activities or posed problems in their pursuit? When there are countries, which do not have such legislation, why should India have one?
- Is it a lawyer's professional law-mania to insist on framing of a law in every area where none exists?
- or at any rate no codified law exists etc., are one can ask ourselves in the context of arguing for a space legislation for India.

CONCLUSION

- It can be concluded that the elementary portion of space law is basically structured upon the very firm objectives of United Nations.
- The sole aim of United Nations in relation to space law is to promote international cooperation, understanding and security in the exploration of outer space.
- Every State bears international responsibility towards its space activities and if damage is caused due to negligence, the claimant State can invoke absolute liability on the part of the other State.
- Special consideration should be given to developing States without any discrimination on the basis of principles of equality and natural justice, because of the special status they hold.