NATIONAL SPACE LAW - SCIENCE & TECHNOLOGY

To govern its expanding private space industry, India needs a national space law as it currently relies on non-binding policies. A formal law would provide legal certainty for investment and clarify liability and commercial rights as required by the Outer Space Treaty.

India's Push for a National Space Law

Context - 2nd National Space Day

Commemoration - On August 23, India celebrated its 2nd National Space Day to mark the historic success of the Chandrayaan-3 mission.

Theme for 2025 - The official theme is 'Aryabhatta to Gaganyaan: Ancient Wisdom to Infinite Possibilities'.

Central Discussion - A key point of discussion among experts during the event was the urgent need for India to enact a national space law to regulate its rapidly growing space sector.

What is a National Space Law?

Definition - A national space law is a **domestic legal framework** that a country establishes to govern and regulate its activities in outer space.

Key Functions - Ensures the country's compliance with its **international obligations** and treaties. Provides legal clarity and certainty to government agencies, the private sector, and investors regarding

1. Licensing and authorization procedures.
2. Liability for damages.
3. Commercial rights, including the exploitation of space resources.

Why India Urgently Needs a National Space Law

1. To Fulfill International Obligations

United Nations Office for Outer Space Affairs (UNOOSA) - Emphasizes that domestic laws are essential for translating broad international space treaties into specific, enforceable national rules.

Outer Space Treaty (OST) of 1967 - This foundational treaty places several key responsibilities on signatory nations like India:

1. **Common Heritage Principle -** Outer space is the "province of all mankind," and no nation can claim sovereignty over it.
2. **Peaceful Use -** Outer space, including the Moon and other celestial bodies, must not be weaponized.
3. **State Responsibility -** Nations are legally responsible for all national space activities, whether conducted by government agencies or private entities.
4. **Liability Clause -** Nations bear international liability for any damage caused by their space objects (e.g., a satellite crashing).
5. **International Cooperation -** The treaty encourages sustainable exploration and the sharing of scientific data.

2. To Address Domestic Legal and Regulatory Gaps

Current Framework is Not Legally Binding - India currently operates under a policy-only framework, which lacks the force of law. This includes:

Indian Space Policy 2023 - Encourages private sector participation but doesn't legally enforce it.

Catalogue of Indian Standards for Space Industry (2023) - Sets quality benchmarks.

IN-SPACe NPG (2024) - Provides guidelines for non-governmental entities.

Weak Authority of IN-SPACe - The Indian National Space Promotion and Authorisation Centre (IN-SPACe) currently operates based on executive orders, not statutory authority. This means its regulatory decisions can be legally challenged in court, creating uncertainty.

3. To Resolve Industry Concerns and Boost Private Investment

Unclear Licensing - Private companies face overlapping approval processes from the Department of Space (DoS), Department of Telecommunications (DoT), and the Ministry of Defence, leading to significant project delays.
FDI Ambiguity - A lack of clarity in the Foreign Direct Investment (FDI) policy, particularly regarding the automatic route for satellites and components, discourages foreign investment.
Liability Risks - While India is internationally liable for damages under the OST, there is no domestic framework for private firms regarding insurance, risk-sharing, and liability caps.
Weak Intellectual Property (IP) Protection - Without a strong legal framework, there is a significant risk of Indian talent and indigenously developed space technology migrating to other countries with better IP protection.

4. For Safety, Security, and Sustainability

Lack of Binding Rules - There is no binding legal framework in India to govern critical areas like:

1. Space debris management and mitigation.
2. Protocols for accident investigations.
3. Data governance and satellite communication norms.

Dual-Use Technologies - Technologies that can be used for both civilian and defence purposes require clearer legal oversight and regulation.

5. To Remain Globally Competitive and Geopolitically Relevant

Global Comparisons - Countries like Japan, Luxembourg, and the United States have already enacted clear laws that cover licensing, liability, and even grant commercial rights over extracted space resources.
India's Risk - Without a clear legal framework, India risks lagging behind in the rapidly growing global space commerce and innovation sectors.
Geopolitical Angle - Amidst intensifying US-China-Russia competition in space, a national law would strengthen India's strategic autonomy and its role in promoting safe and sustainable space governance.

Challenges in Enacting a National Space Law in India

Regulatory Fragmentation - Jurisdiction is split across multiple ministries (Space, Telecom, Defence), leading to duplication and delays.
Weak Statutory Backing - IN-SPACe, the intended single-window agency, currently lacks the necessary legislative authority to be fully effective.
Insurance and Liability Issues - The high cost of insurance and unclear liability frameworks create significant entry barriers for startups.
FDI Restrictions - The limited scope for automatic FDI discourages the inflow of global capital and technology.
IP Protection Gaps - The absence of specific space-related IP laws risks a brain drain and technology flight.

The Way Forward

Enact a Comprehensive Space Activities Law - Create a single, overarching law that provides a statutory framework for all space activities, aligned with OST obligations, and clearly defines the roles of government and private players.
Strengthen IN-SPACe - Grant **statutory powers** to IN-SPACe to function as a true single-window regulator, with clear timelines for licensing and transparent criteria for approvals or denials.
Develop Insurance Framework - Create government-backed reinsurance schemes or pooled risk models to lower the high entry barriers for startups. For example, France subsidises space debris liability insurance for its domestic firms.
Liberalise FDI Norms - Allow 100% FDI under the automatic route in key areas like satellite components and services, with appropriate national security safeguards.

Enhance IP Protection & Innovation - Create a robust IP ecosystem to safeguard patents and copyrights, and encourage more industry-academia partnerships to retain talent.
Embed Sustainability Measures - The new law must legally enforce standards for debris mitigation, accident investigation, and operational safety to ensure the long-term sustainability of space activities.

Major Achievements of ISRO & India's Space Programme - A Glance

Early Milestones

Aryabhata (1975) - India's first-ever satellite, marking its entry into the space age.
Rohini Satellites (1980) - First satellite launched using an indigenous Indian rocket, the SLV-3.

Launch Vehicle Development

PSLV (Polar Satellite Launch Vehicle) - ISRO's reliable "workhorse," known for its cost-effective and precise launches.
GSLV & LVM-3 - Heavy-lift rockets capable of launching large satellites. The LVM-3 was used for **Chandrayaan-2, Chandrayaan-3,** and is designated for the Gaganyaan human spaceflight mission.
SSLV (Small Satellite Launch Vehicle) - Provides affordable and on-demand launch access for smaller satellites.

Planetary Exploration

Chandrayaan-1 (2008) - Confirmed the presence of water molecules on the Moon.
Chandrayaan-3 (2023) - Made India the first and only nation to successfully land on the lunar south pole.
Mangalyaan (Mars Orbiter Mission, 2014) - Made India the first Asian nation to reach Mars orbit and the first in the world to do so on its maiden attempt.
Aditya-L1 (2023) - India's first dedicated solar observatory, positioned at Lagrange point 1.

Satellite Applications for National Development

INSAT & GSAT series - Revolutionized telecommunications, TV broadcasting, and weather forecasting in India.
IRS series - One of the world's largest constellations of Earth observation satellites, aiding in agriculture, forestry, disaster management, and urban planning.
NAVIC (2018) - India's independent regional navigation satellite system, enhancing national security and transportation.
Bhuvan Platform - ISRO's indigenous mapping and geospatial data service.

Commercial Achievements

Antrix & NSIL - The commercial arms of ISRO.
World Record Launch (2017) - The PSLV-C37 successfully launched a record 104 satellites in a single mission.
Foreign Satellite Launches - ISRO has launched over 450 foreign satellites for more than 30 countries, establishing itself as a low-cost, high-efficiency launch provider.
Source: https://www.newsonair.gov.in/national-space-day-being-celebrated-across-the-country-today/#:~:text=To%20honour%20this%20achievement%2C%20the,Ancient%20Wis