Not Just Astronauts: Gender Diagnosis and Budgeting in India's Space Sector

No. 439
November-2025
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Abstract

Against the backdrop of United Nations Office for Outer Space Affairs' (UNOOSA's) 2025 Landmark Study, which documents women's 30 percent global workforce share in public space agencies—declining to 19 percent on boards—this paper applies gender budgeting framework to diagnose fiscal policy imperatives in the Department of Space (DoS), India. Aligning with the foundational principles of the UN Outer Space Treaty (1967), which mandates equitable benefits from space exploration "for all people," and with Sustainable Development Goals (SDGs) 4 (quality education), 5 (gender equality), 9 (industry, innovation, and infrastructure), and 17 (partnerships for the goals), this analysis underscores the role of gender budgeting as a fiscal multiplier for inclusive growth in emerging space economies. Despite the absence of specifically targeted programmes for women in the space sector within the Ministry of Finance's Gender Budgeting Statement 2025-26, our ex-post fiscal incidence analysis reveals that ISRO's significant achievements are inherently women-inclusive in their outcomes, despite workforce underrepresentation. We analysed the Space budgets across the space centres in India, and also across sanctioned Space projects to understand the fiscal incidence and marksmanship in space technology (e.g., launch vehicles, propulsion systems) and space applications (e.g., Earth observation, communication satellites). Key findings highlight marked variations in resource utilisation efficiency: utilisation rates ranged from a low of 10.9 percent at IN-SPACe—reflecting nascent private-sector integration challenges—to 21 percent at VSSC and 32 percent at URSC, where mature R&D pipelines drive higher absorption. Given the outcome of Space programmes including Earth Observation (EO) programmes and communication satellites for climate resilience have demographic than behavioural access, the units utilised patterns across income quintiles determine the fiscal incidence. Integrating results-linked gender budgeting into space policy thus emerges as a dual lever for equity—ensuring women's voice in high impact decision-making—and efficiency, by harnessing diverse perspectives to optimise resource allocation and innovation trajectories.

JEL Classification Numbers: H50, J16, O38, Q55

Keywords: Gender budgeting, space sector, fiscal incidence, Sustainable Development Goals

[1] The authors are respectively Professor and Research Fellow at NIPFP. Thanks are due to Dr Babitha Justin, faculty at Indian Institute of Space technology (IIST), ISRO Thiruvananthapuram and other participants of the Seminar presented by the first author at IIST held on April 2nd, 2025, which led to this revised paper. Special thanks are due to Rohit Dutta for technical assistance. Thanks are due to Kavita Issar for formatting the paper.

1. Introduction

The global space economy, projected to augment world GDP by $1.8 trillion by 2035, constitutes a significant sector of innovation, technological diffusion and sustainable economic growth, yet it is hindered by gender asymmetries. The United Nations Office for Outer Space Affairs' (UNOOSA) Landmark Study on Gender Equality in the Global Space Sector, published in September 2025 - based on the surveys from over 500 women across 70 countries, augmented by administrative data from 53 public agencies and 41 private entities – unveils stark gender inequalities: women command a mere 30 percent of public-sector space employment globally, with representation reducing to 24 percent in managerial levels, 21 percent in leadership, and 19 percent on boards (United Nations Office for Outer Space Affairs 2025a, 12).

Spatial heterogeneity amplifies the findings—overall, African states have the highest representation of women, in management and leadership – with women comprising near-parity (41% overall and 47% in both management and leadership). Latin American and the Caribbean states have the lowest representation of women in leadership (16%)[2]. Asia Pacific states have the lowest representation of women overall (22%), in management (18%) and in board positions (14%) (United Nations Office for Outer Space Affairs 2025a, 28–32).

India's space sector, valued at $13 billion in 2025 and projected to reach $44 billion by 2033, exemplifies cost-effective innovation amid persistent gender disparities[3]. From the vantage point of gender budgeting, India's space sector emerges as a compelling sector for analysing these gender dimensions. All ISRO achievements indeed highlight women's "outstanding contributions" despite underrepresentation. ISRO women achievers also demystifies that space careers are "*not just astronauts*". ISRO ranked fourth worldwide in successful space docking operations as of January 2025 and holder of nine world records—including the Chandrayaan-3 lunar south pole landing at one-tenth the cost of peers—India's $13 billion space economy (8 percent of the global market by 2033) underscores Indian Space Research Organisation's (ISRO's) paradigm of cost-effective missions, from 433 foreign satellites launched to over 300 startups by mid-2025[4]. This competence aligns impeccably with their commitments to Sustainable Development Goals (SDGs), leveraging Earth observation for SDG 13 (climate action) and navigation for SDG 9 (infrastructure). The Outer Space Treaty[5] (1967) also mandates equitable benefits "for all peoples," irrespective of gender (United Nations 1967, Article I). Yet, women's 20 percent workforce share in ISRO—lagging 12 percent in technical roles—mirrors Asia-Pacific averages.

Gender budgeting, as a fiscal accountability tool, analyses these gaps, and systematically integrates a "gender lens" into fiscal processes to redress such disparities in prima facie gender neutral sectors. As a fiscal innovation, gender budgeting analyses the intensity of gender in the fiscal allocations and conduct public expenditure benefit incidence analysis

[2] https://space4women.unoosa.org/sites/space4women.unoosa.org/files/general/space4women_-_landmark_study_on_gender_equality_in_the_space_sector.pdf (page 32)

[3] Indian National Space Promotion and Authorization Centre (IN-SPACe). 2023. Decadal Vision and Strategy for Indian Space Economy. Bengaluru: IN-SPACe. https://www.inspace.gov.in/sys_attachment.do?sys_id=f461d9698775f1104efb31d60cbb35df.

[4] https://www.weforum.org/stories/2025/01/strategic-vision-innovation-boosting-india-space-economy/

[5] https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html

to examine the distributional impacts of fiscal policies. It has both equity and efficiency dimensions. Against this backdrop, the paper analyses the gender diagnosis and budgeting in the space sector of India. The paper is organised into 4 sections. Section 2 analyses the analytical framework and empirics of Indian space sector and gender budgeting. Section 3 analyses the budget and unit utils data. Section 4 conducts the fiscal marksmanship of the space sector. Section 5 presents the empirical analysis of gender differentials in budgeting through the public expenditure benefit incidence analysis in the space sector, in case of the access to resources within the space institutions and the outcomes of space programmes. Section 6 presents the outcome budgets integrating gender. Section 6 draws conclusions and policy suggestions.

2. Why Indian Space sector: Analytical Framework and the Empirics

Gender budgeting is a fiscal innovation that embeds gender-disaggregated analysis into public expenditure processes, translating a gender-neutral budgeting into a mechanism for equitable and efficient resource allocation across gender. Gender budgeting is "a fiscal innovation-based policy" that translates gender commitments into tangible fiscal processes, applying a "gender lens" to proposals and outcomes to identify differential impacts on women and men (Chakraborty, 2014). This fiscal innovation transcends conventional public financial management by reallocating budgets towards gender-inclusive outcomes, and there is a significant link between gender outcomes and gender budgeting (Stotsky and Zaman, 2016; Stotsky, Chakraborty and Gandhi, 2017).

In the space sector—a domain of high fixed costs, long-horizon R&D, and public-good spillovers—gender budgeting innovates by mitigating institutional biases that marginalise human capital, fostering inclusive innovation ecosystems aligned with Sustainable Development Goals (SDGs) and the Outer Space Treaty (1967). The ex-ante gender frameworks can be applied to space sector to identify the core components to design a gender budgeting of the space sector incorporating the costing matrices; while ex-post gender budgeting framework of space economy conducts a taxonomy of existing budget proposals through a 'gender lens' to understand the intensity of gender components in the space sector budgets. The ex-post gender budgeting also involves public expenditure benefit incidence analysis, by quantifying the distributive effects of fiscal policies in space sector, decomposing fiscal incidence into inputs-based (resource access) and outcomes-based (impact realisation) variants. Gender intensity— the share of allocations explicitly or implicitly benefiting women—serves as an entry metric, exposing untagged biases in the fiscal policies, as there are gender asymmetries in the institutional structure and organisational hierarchies. The fiscal incidence is mainly derived from the unit utilised pattern across gender.

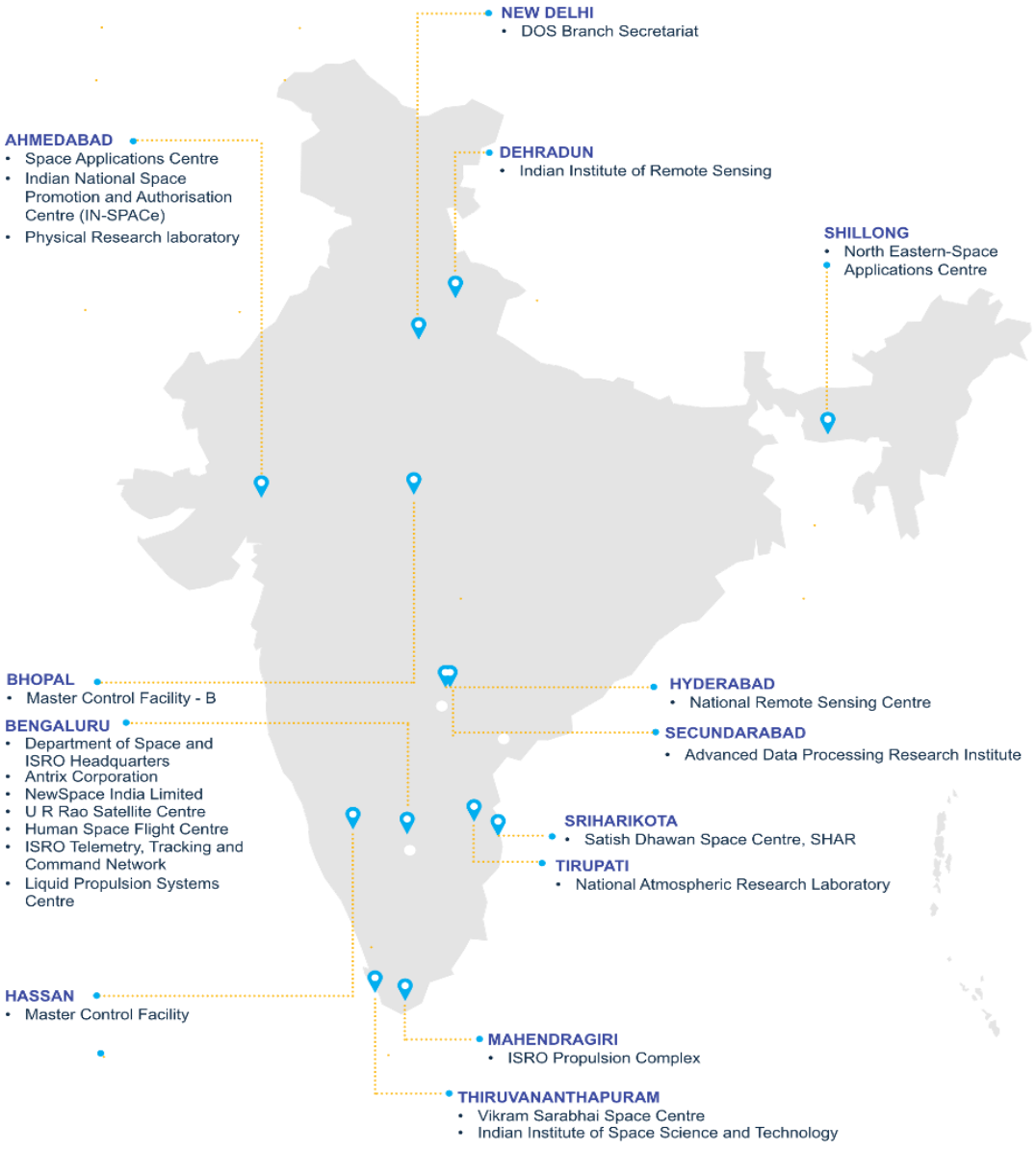
India's Indian Space Research Organisation (ISRO), established in 1969, is widely recognised as one of the world's leading space agencies. While NASA due to its massive budget and historical achievements tops the global rank, ISRO consistently ranks in the top 5-6 globally across various metrics like innovation, mission success rates, and cost-efficiency (Table 1). ISRO is specifically noted for delivering high-impact results on a relatively modest budget, making it a standout in the global space race. ISRO's annual budget is around $1.7-2.1 billion, placing it 6th worldwide among major space agencies (Table 1).

Table 1: Top 10 Space Agencies and their Budget (USD Billion)

Rank	Agency	Country/Region	Budget (USD Billion)
1	NASA	USA	24.0
2	CNSA	China	11.0+
3	ESA	Europe	7.6-7.8
4	Roscosmos	Russia	3.5-3.9
5	JAXA	Japan	3.2
6	**ISRO**	**India**	**1.7-2.1**
7	UKSA	UK	0.8
8	CSA	Canada	0.6
9	KARI	South Korea	0.55
10	UAESA	UAE	0.45

Source: Space Foundation, 2025

Figure 1: Units of Analysis of the Study: Space Organisations in India



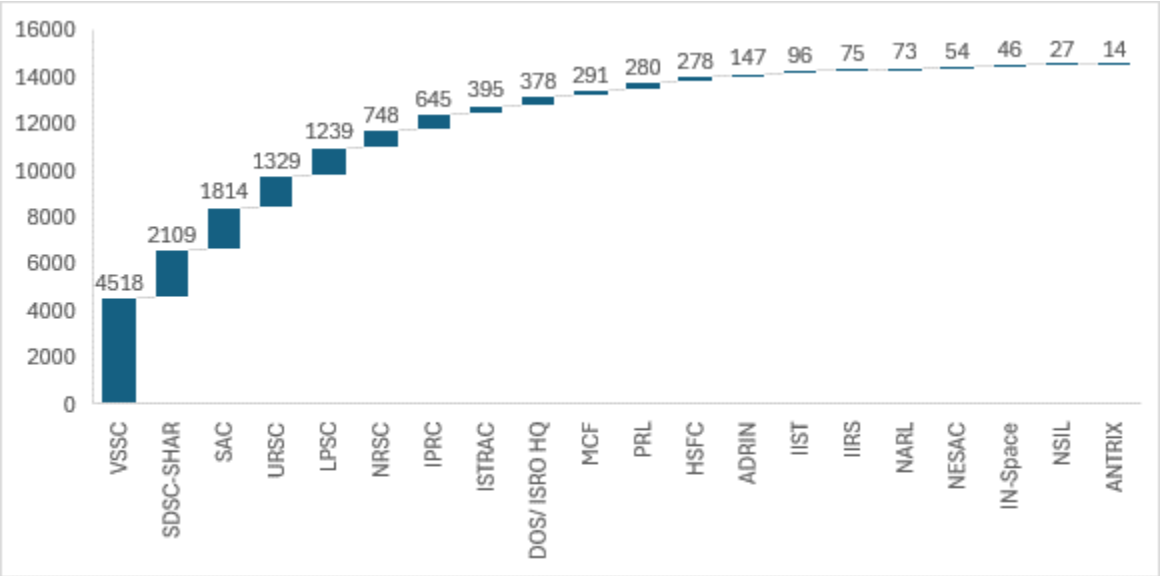
Source: Government of India (2025), Department of Space documents

ISRO stands out due to its focus on affordable, reliable technology and rapid progress: (i) Cost-Efficiency: Its 2014 Mars Orbiter Mission (Mangalyaan) cost just $75 million—cheaper than many Hollywood films—and succeeded on the first try, making it the cheapest Mars mission ever; (ii) Recent Milestones: In 2023, Chandrayaan-3 became the first spacecraft to land near the Moon's south pole, a feat no other agency had achieved. ISRO also set a record in 2017 by launching 104 satellites in one mission; and (iii) Future Plans: By 2025-2030, ISRO aims for human spaceflight (Gaganyaan), Venus and Mars missions, and reusable rockets. It's collaborating with NASA on the NISAR Earth-observation satellite for climate monitoring; (iv) Global Impact: ISRO's satellites support disaster management, agriculture, and navigation in India and beyond, with over 100 successful launches via its PSLV and GSLV rockets. Against this backdrop, we identified 20 units of ISRO for our study (Figure 1).

Empirical evidence on gender composition in high-skill sectors like aerospace reveals persistent imbalances, still all ISRO achievements indeed highlight women's "outstanding contributions" despite underrepresentation. In the Indian space sector, dominated by the Indian Space Research Organisation (ISRO) and affiliated entities under the Department of Space (DoS), recent data from the DoS Annual Report 2024–25 document a workforce of 14,556 employees. Women account for 19 percent of this total, or roughly 2,911 employees. This aggregate mask significant heterogeneity across organizational units and hierarchical levels, suggestive of both horizontal and vertical segregation patterns common in STEM fields.

The figure 2 shows the aggregate employment across the 20 space organisations under study, which shows that majority of work force are concentrated at five centres, viz., VSSC, Trivandrum (4518), SHAR, Sriharikotta (2109), SAC (1814), URSC Bengaluru (1329) and LPSC (1239).

Figure 2: Aggregate Employment across Indian Space Organisations, 2024-25



Source: Department of Space, Annual Report - 2024-25

3. Analysing the Space Budgets

The Indian space sector fiscal data is organised from the Union Budget 2025-26 documents, particularly the Expenditure profile and the Detailed Demand for Grants of Department of Space, Government of India. The unit costs of space programme are derived from the Detailed Demand for Grants, of DoS. The units utilised data is organised from the reports of Department of Space for latest year 2025-26 across the space organisations under study.

The Department of Space's 2025-26 budget of Rs 13,416.2 crore underscores a strategic emphasis on technological advancement, with Space Technology commanding 76.25% (Rs 10,230 crore) to propel human spaceflight (e.g., Gaganyaan) and launch vehicle R&D, signalling India's push toward self-reliance amid global space competition (Table 2). Space Applications, at 12.72% (Rs 1,706 crore), bolster geospatial and satellite-based services for socioeconomic development, while modest allocations to Space Sciences (2.77%, Rs 372 crore) and INSAT Systems (1.54%, Rs 207 crore) sustain foundational research and communication infrastructure. Establishment (2.97%) and Other Central Sector Expenditure (3.74%) cover administrative essentials, and autonomous space research institutions, reflecting efficient resource prioritisation for high-impact innovation. This composition enhances India's orbital capabilities, fostering economic development via commercial launches and Earth Observation (EO) data utilisation. ISRO and other major space organisations continuously creating and improving ways of using Earth Observation (EO) data in climate applications. The "Space4Climate" mission states that global EO Data Applications resource is a showcase of member-produced satellite climate data applications that demonstrate how satellite climate services are used in key economic and social sectors, such as agriculture, finance, nature and land use, oceans, recovery and peace, urbanisation and energy[6].

Table 2: Space Budget in India: Disaggregation, 2025-26 BE

Budget Components	2025-26 %
Establishment Expenditure	2.97
Space Technology	76.25
Space Applications	12.72
Space Sciences	2.77
INSAT Satellite Systems	1.54
Other Central Sector Expenditure	3.74
Total	100 (Rs 13416.2 cr)

Source: Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Sanctioned Space Projects

The Table 3 delineates the sanctioned costs for 41 ongoing and developmental projects under Department of Space, Government of India, aggregating to Rs. 72,268.23 crore as of 2025, reflecting a multi-year investment horizon that extends well beyond the annual

[6] https://space4climate.com/global-satellite-eo-data-applications/

outlay of Rs. 10,230.21 crore for Space Technology in FY 2025-26. This embodies a priority towards high-thrust capabilities, with over 60% allocated to launch vehicle enhancements and human spaceflight, signalling India's aspiration for orbital sovereignty amid escalating global competition. Smaller shares for satellites (12.72 %) and exploration (7%) prioritise operational continuity, while infrastructure (10%) mitigates bottlenecks in production and testing. The economic returns are projected at Rs. 331 crores in commercial launch revenues for 2025-26, which also fosters technological spillovers, potentially reducing import dependency through indigenous innovations. The details of the sanctioned projects are given in the Appendix.

Launch Vehicle Continuations and Developments

The Polar Satellite Launch Vehicle (PSLV) Continuation Programme (Phase-5 and Phase-6), sanctioned at Rs.3,090 crore (4.28%) and Rs. 6,131 crore (8.48%) respectively, sustains ISRO's significant projects for low-Earth orbit insertions, enabling 3-4 annual launches of Earth Observation (EO) and small satellites with a 1,600 kg payload capacity to sun-synchronous orbits. Phase-6 incorporates modular upgrades for cost efficiency and reusability trials. Geosynchronous Satellite Launch Vehicle (GSLV) MK III Continuation (Phase-1) at Rs. 4,338.20 crore (6.00%) advances the 4-tonne class vehicle for Geosynchronous Transfer Orbit (GTO) missions, powering critical navigation and communication deployments like NVS-02 in January 2025. GSLV Operational (F11-F16) (₹1,710.58 crore, 2.37%) and MK II Continuation (Phase-4) (Rs. 1,914.48 crore, 2.65%) ensure six flights through 2026, focusing on cryogenic engine refinements for heavier payloads up to 2.5 tonnes. The Development of Small Satellite Launch Vehicle (SSLV) at ₹237.84 crore (0.33%) targets ride-share markets with 500 kg rides to LEO via frequent, low-cost launches from the dedicated Sriharikota pad (Rs. 985.96 crore, 1.36%). The Next Generation Launch Vehicle (NGLV) project, with Rs. 8,239.64 crore (11.40%), pioneers reusable heavy-lift architecture for 10-20 tonne capacities, integrating semi-cryogenic engines (Rs. 1,798 crore, 2.49%) and stages (Rs. 969 crores, 1.34%) to supplant GSLV by 2030. Reusable Launch Vehicle (RLV) Orbital Re-entry Experiment (Rs. 416.35 crore, 0.58%) validates autonomous landing tech, culminating in winged body demos for cost-per-kg reductions exceeding 50%.

Human Spaceflight and International Collaborations

With regard to Human Spaceflight and International Collaborations, Gaganyaan is a significant project. Gaganyaan, Follow-on Missions, leading to the *Bhartiya Antariksh Station* precursor (Rs. 20,193 crore, 27.94%), forms the cornerstone of India's crewed orbital program, encompassing four test flights by 2026, crew module qualifications, and station modules for microgravity research, with unmanned G1 slated for Q4 2025 featuring the female humanoid *Vyommitra*. The Joint ISRO-NASA Mission to ISS (Rs. 715 crores, 0.99%) facilitates Indian astronaut Axiom-3 participation in 2025, building interoperability for future lunar gateways. The Space Docking Experiment Mission (₹124.47 crore, 0.17%) tests rendezvous tech essential for station assembly.

Table 3: Total Sanctioned Projects for ISRO

Projects	Sanctioned Cost (₹ in Crores)	%
2.00	3.00	
PSLV Continuation Programme (Phase - 5)	3090.00	4.28
PSLV Continuation (Phase-6)	6131.00	8.48
GSLV MK III Continuation Programme (Phase-1)	4338.20	6.00
GSLV Operational (F11-F16)	1710.58	2.37
GSLV MK II Continuation Programme (Phase-4)	1914.48	2.65
Gaganyaan Follow-on Missions leading to precursor for *Bharatiya Antariksh Station*	20193.00	27.94
Joint ISRO-NASA Mission to ISS	715.00	0.99
Semi-cryogenic Engine Development Project	1798.00	2.49
Semi-cryogenic Stage Development Project	969.00	1.34
Development of Small Satellite Launch Vehicle	237.84	0.33
Development of Next Generation Launch Vehicle (NGLV)	8239.64	11.40
RLV Orbital re-entry experiment	416.35	0.58
RISAT-1B	605.29	0.84
Oceansat-3/3A	673.17	0.93
NASA-ISRO Synthetic Aperture Radar (NISAR) Mission	513.00	0.71
Resourcesat-3S & 3SA	697.22	0.96
Resourcesat-3 & 3A	728.39	1.01
High Resolution Satellite (HRSAT) Constellation	556.92	0.77
G20 Satellite Mission	879.98	1.22
IDRSS	843.75	1.17
GSAT-22/23/24 Satellites	865.75	1.20
GSAT-30/31/32 Spacecraft	959.50	1.33
INSAT-3DR	140.00	0.19
GSAT-20 Satellite	755.00	1.04
Technology Demonstration Spacecraft (TDS-01)	224.25	0.31
Technology Demonstration Spacecraft (TDS-02)	780.73	1.08
Chandrayaan-III	250.00	0.35
Venus Orbiter Mission	824.00	1.14
Chandrayaan-4 Mission	2104.06	2.91
Chandrayaan-5 Mission	981.99	1.36
X-Ray Polarimeter Satellite (XPoSat)	60.00	0.08
TRISHNA	530.38	0.73

Space Docking Experiment Mission	124.47	0.17
Aditya-L1	378.53	0.52
IRNSS 1J/1K/1L/1M/1N	964.68	1.33
TWT Facility	493.79	0.68
PSLV Integration Facility (PIF)	471.62	0.65
SSLV Launch Pad	985.96	1.36
NETRA	509.01	0.70
Augmentation of Solid Motor Production Facilities (ASMP) / SPROB	628.84	0.87
Third Launch Pad	3984.86	5.51
TOTAL	**72268.23**	**100.00**

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Earth Observation and Communication Satellites:

Earth observation (EO) efforts include RISAT-1B (Rs. 605.29 crore, 0.84%) for all-weather radar imaging; Oceansat-3/3A (Rs. 673.17 crore, 0.93%) for ocean colour and altimetry; Resourcesat-3S and 3SA (Rs. 697.22 crore, 0.96%) and Resourcesat-3 & 3A (Rs. 728.39 crore, 1.01%) for multispectral agriculture monitoring; High Resolution Satellite (HRSAT) Constellation (₹556.92 crore, 0.77%) for 25-cm defence reconnaissance; and the G20 Satellite Mission (₹879.98 crore, 1.22%) for global geospatial diplomacy. The NASA-ISRO Synthetic Aperture Radar (NISAR) Mission (₹513 crore, 0.71%), launched via GSLV-F16 in July 2025, delivers dual-band interferometry for ecosystem and disaster tracking. Communication satellites encompass Indian Data Relay Satellite System (IDRSS) (₹843.75 crore, 1.17%) for real-time TT&C; GSAT-22/23/24 (₹865.75 crore, 1.20%) and GSAT-30/31/32 (₹959.50 crore, 1.33%) for Ka/Ku-band broadband; INSAT-3DR (₹140 crore, 0.19%) for meteorology; and GSAT-20 (₹755 crore, 1.04%) for high-throughput aviation connectivity. Technology Demonstration Spacecraft TDS-01 (₹224.25 crore, 0.31%) and TDS-02 (₹780.73 crore, 1.08%) validate electric propulsion and AI autonomy.

Space Exploration Missions

Planetary probes feature Chandrayaan-III (₹250 crore, 0.35%) as a lunar sample return precursor; Chandrayaan-4 (₹2,104.06 crore, 2.91%) for circumlunar orbiter-rover; Chandrayaan-5 (₹981.99 crore, 1.36%) toward manned lunar landing; Venus Orbiter Mission (₹824 crore, 1.14%) for atmospheric profiling in 2028; Aditya-L1 (₹378.53 crore, 0.52%), halo-orbiting since 2024 for solar corona studies; and X-Ray Polarimeter Satellite (XPoSat) (₹60 crore, 0.08%) for black hole polarization. TRISHNA (₹530.38 crore, 0.73%), a Franco-Indian thermal infrared mission, enhances urban heat mapping.3.5 Infrastructure and Support Facilities Augmentations include Traveling Wave Tube (TWT) Facility (₹493.79 crore, 0.68%); PSLV Integration Facility (₹471.62 crore, 0.65%); Augmentation of Solid Motor Production Facilities (ASMP)/SPROB (₹628.84 crore, 0.87%); and Third Launch Pad (₹3,984.86 crore, 5.51%) for concurrent multi-vehicle operations. Navigation upgrades via IRNSS 1J/1K/1L/1M/1N (₹964.68 crore, 1.33%) bolster NavIC with seven new satellites. NETRA (₹509.01 crore, 0.70%) deploys space-based tracking for collision avoidance. This allocation matrix, sourced from Department of Space documents (Government of India, 2025), illustrates a balanced yet ambitious trajectory, where capital-intensive frontrunners like Gaganyaan and NGLV (39.34% combined) catalyse downstream efficiencies, potentially yielding a 3-5x return on investment through exports and applications in agriculture, disaster management, and defence.

Table 4: ISRO's Projected Mission Cadence, FY 2023-24 to 2025-26

Missions	2023-24	2024-25	2025-26
Earth Observation Satellites	1	1	4
Communication Satellites	0	1	2
Navigation Satellites	1	1	0
Space Science Satellites	3	0	0
Technology Demonstrator	3	2	1
PSLV	4	2	4
GSLV MkII	2	1	3
LVM3	1	0	2
SSLV	0	1	2
Gaganyaan	0	0	3
TOTAL	15	9	21

Source: Government of India (2025), Department of Space documents

Table 4 illustrates ISRO's accelerating mission profile, expanding from 15 launches in FY 2023-24 to 21 in FY 2025-26, aligned with a ₹13,416 crore budget emphasizing self-reliance. Earth observation satellites surge fourfold to four, amplifying EO applications for ₹5,000 crore annual agricultural gains via Resourcesat and NISAR data. Communication and navigation stabilize at two and zero, post-NavIC consolidation, while space science halts, reallocating to Gaganyaan's debut trio (uncrewed G1 with Vyommitra in Q4 2025). Launch vehicles rebound—PSLV/GSLV MkII/LVM3/SSLV to 11 flights—targeting ₹331 crore commercial revenues and 5% import cuts. This cadence, per Department of Space documents (Government of India, 2025), elevates space's GDP share toward 1% by 2030, balancing innovation with fiscal efficiency.

Table 4 outlines ISRO's escalating launch tempo, surging from 15 missions in FY 2023-24 to 21 in FY 2025-26, amid a ₹13,416 crore budget that prioritizes orbital self-reliance. Earth observation satellites quadruple to four, enhancing EO-derived economic value in agriculture and disaster response—potentially averting ₹5,000 crore annual losses—while communication and navigation deployments stabilize at two and zero, respectively, post-NavIC maturation. Space science wanes to nil, redirecting to human spaceflight: Gaganyaan's inaugural trio (uncrewed G1 in Q4 2025 with Vyommitra, plus precursors) marks India's crewed debut. Launch vehicles rebound, with PSLV/GSLV MkII/LVM3/SSLV totalling 11 flights, fostering commercial revenues exceeding ₹300 crore and reducing import reliance by 5% (Table 3). This trajectory amplifies space sector GDP contributions toward 1% by 2030, balancing innovation with fiscal prudence.

4. Fiscal Marksmanship analysis of Space sector

Fiscal marksmanship measures the alignment between initial Budget Estimates (BE) and Revised Estimates (RE)/Actuals, quantifying forecasting precision: positive differentials signal overestimation (unused funds), while negatives denote underestimation (cost overruns). In FY 2024-25, ISRO's ₹72,268 crore portfolio exhibited a net ₹833.54 crore overestimation (BE-RE), reflecting conservative planning amid supply volatilities, yet exposing variances in human spaceflight and infrastructure. This 1.15% surplus affords

fiscal buffers for 2025-26's 21-mission surge, but persistent underestimations in SSLV (₹-53.87 crore) and G20 (₹-30 crore) underscore needs for adaptive analytics to curb inefficiencies, enhancing absorption rates toward 95% and amplifying ROI in commercial launches (Table 5).

Table 5: Fiscal Marksmanship (Deviation) in Space Project Execution, FY 2024-25

Projects	Fiscal marksmanship 2024-25 (BE minus RE) (absolute deviation in ₹ Crore)	BE 2024-25 (₹ in Crores)	RE 2024-25 (₹ in Crores)
PSLV Continuation Programme (Phase - 5)	70.00	100.00	30.00
PSLV Continuation (Phase-6)	-77.00	400.00	477.00
GSLV MK III Continuation Programme (Phase-1)	25.00	375.00	350.00
GSLV Operational (F11-F16)	10.70	150.00	139.30
GSLV MK II Continuation Programme (Phase-4)	90.18	200.00	109.82
Gaganyaan Follow-on Missions leading to precursor for Bharatiya Antariksh Station	352.65	1200.00	847.35
Joint ISRO-NASA Mission to ISS	303.00	715.00	412.00
Semi-cryogenic Engine Development Project	55.00	90.00	35.00
Semi-cryogenic Stage Development Project	20.00	100.00	80.00
Development of Small Satellite Launch Vehicle	0.00	25.00	25.00
Development of Next Generation Launch Vehicle (NGLV)	-3.00	0.00	3.00
RLV Orbital re-entry experiment	29.75	76.75	47.00
RISAT-1B	2.00	75.00	73.00
Oceansat-3/3A	2.33	30.00	27.67
NASA-ISRO Synthetic Aperture Radar (NISAR) Mission	5.50	18.00	12.50
Resourcesat-3S & 3SA	-6.00	50.00	56.00
Resourcesat-3 & 3A	-4.00	30.00	34.00
High Resolution Satellite (HRSAT) Constellation	22.00	40.00	18.00
G20 Satellite Mission	-30.00	3.75	33.75
IDRSS	15.50	93.75	78.25
GSAT-22/23/24 Satellites	-0.11	5.00	5.11
GSAT-30/31/32 Spacecraft	0.00	5.00	5.00
INSAT-3DR	0.00	1.00	1.00
GSAT-20 Satellite	-0.63	40.00	40.63
Technology Demonstration Spacecraft (TDS-01)	1.55	50.00	48.45
Technology Demonstration Spacecraft (TDS-02)	0.25	1.00	0.75
Chandrayaan-III	-8.50	10.00	18.50

Venus Orbiter Mission	-1.10	1.00	2.10
Chandrayaan-4 Mission	0.00	0.00	0.00
Chandrayaan-5 Mission	0.00	0.00	0.00
X-Ray Polarimeter Satellite (XPoSat)	0.15	1.00	0.85
TRISHNA	8.29	16.50	8.21
Space Docking Experiment Mission	-6.00	10.00	16.00
Aditya-L1	0.00	13.00	13.00
IRNSS 1J/1K/1L/1M/1N	2.00	75.00	73.00
TWT Facility	-12.79	50.00	62.79
PSLV Integration Facility (PIF)	5.80	22.80	17.00
SSLV Launch Pad	-53.87	108.83	162.70
NETRA	16.39	26.50	10.11
Augmentation of Solid Motor Production Facilities (ASMP) / SPROB	-1.50	5.50	7.00
Third Launch Pad	0.00	0.00	0.00
TOTAL	833.54	4214.38	3380.84

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

The Table 5 elucidates fiscal marksmanship—the precision of Budget Estimates (BE) against Revised Estimates (RE)—for 36 sanctioned space projects in FY 2024-25, totalling a net overestimation of ₹833.54 crore (BE exceeding RE). Positive differentials denote overestimation, signalling prudent forecasting or execution delays that curtailed expenditures; negative values indicate underestimation, often from unforeseen cost escalations like supply chain disruptions or technical refinements. This aggregate surplus, equivalent to 1.15% of the ₹72,268 crore portfolio, underscores ISRO's conservative budgeting amid volatile global inputs (e.g., cryogenic components), yet reveals pockets of inefficiency that could strain future outlays. Human spaceflight dominates variances: Gaganyaan Follow-on Missions (₹352.65 crore overestimation) and the Joint ISRO-NASA ISS Mission (₹303 crore) reflect optimistic initial projections, possibly buffered by phased milestones like Vyommitra's Q4 2025 integration, averting overruns in a ₹20,193 crore behemoth. Launch vehicle continuations show mixed signals—PSLV Phase-5 (₹70 crore) and GSLV MK II Phase-4 (₹90.18 crore) overestimated amid routine integrations, while Phase-6 (₹-77 crore) and SSLV Launch Pad (₹-53.87 crore) underestimated due to accelerated prototyping demands, highlighting scalability challenges in *smallsat* markets. Satellite programmes exhibit granularity: Earth observation missions like Resourcesat-3S & 3A (₹-6 crore) and G20 (₹-30 crore) faced underestimations from enhanced resolutions, whereas NISAR (₹5.50 crore) and HRSAT (₹22 crore) aligned closely, benefiting from bilateral efficiencies. Communication fleets (e.g., GSAT-20 at ₹-0.63 crore) remained negligible, prioritizing operational stability.

Exploration ventures, including Chandrayaan-III (₹-8.50 crore) and Venus Orbiter (₹-1.10 crore), underscore minor underestimations tied to international collaborations. Infrastructure lags, with TWT Facility (₹-12.79 crore) and ASMP (₹-1.50 crore) signalling production bottlenecks. Overall, this marksmanship profile—skewed by overestimations—enables fiscal headroom for 2025-26's ₹10,230 crore Space Technology allocation, yet underestimations (≈₹300 crore net) warn of adaptive budgeting needs to sustain 21-mission cadence and 5% import reduction targets. Enhancing forecasting methodology could optimize resource absorption, amplifying space's multiplier effects on economic growth.

Aggregate Fiscal Marksmanship

Table 6 quantifies aggregate fiscal marksmanship—the differential between Budget Estimates (BE) and Revised Estimates (RE)—for the Department of Space's ₹13,042.75 crore allocation in FY 2024-25, revealing a net overestimation of ₹1,317 crore (10.1% of BE) as RE settled at ₹11,725.75 crore. This aggregate surplus, driven by execution efficiencies and external delays (e.g., supply chain frictions in cryogenic imports), underscores conservative forecasting amid geopolitical volatilities, yet masks heterogeneous variances across components that inform resource reallocation.

Table 6: Fiscal Marksmanship (Deviation) Across Department of Space Budget Components, FY 2024-25

S.No.	Budget Components	Fiscal marksmanship (absolute deviation in ₹ Crore)	BE 2024-25 (₹ in Crore)	RE 2024-25 (₹ in Crore)
1	Establishment Expenditure	62.48	478.56	416.08
2	Space Technology	1101.93	10087.52	8985.59
3	Space Applications	83.73	1611.71	1527.98
4	Space Sciences	6.33	133.57	127.24
5	INSAT Satellite Systems	57.56	276.00	218.44
6	Other Central Sector Expenditure	4.97	455.39	450.42
	Total	**1317.00**	**13042.75**	**11725.75**

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Space Technology, the dominant outlay at ₹10,087.52 crore BE (77.3% of total), registered the largest overestimation (₹1,101.93 crore, 10.9%), attributable to phased deferrals in Gaganyaan precursors and launch vehicle integrations, preserving fiscal headroom for 2025-26's 21-mission cadence (Table 7). Space Applications (₹1,611.71 crore BE, 12.3%) followed with ₹83.73 crore (5.2%) overestimation, reflecting optimized geospatial deployments amid steady EO demand. Establishment Expenditure (₹478.56 crore BE) and INSAT Systems (₹276 crore BE) showed modest overruns (13.0% and 20.9%, respectively), tied to administrative buffers, while Space Sciences (₹133.57 crore BE) and Other Central Sector Expenditure (₹455.39 crore BE) exhibited negligible variances (4.7% and 1.1%).This profile signals robust absorption potential, enabling a 2.3% nominal hike to ₹13,416.2 crore in 2025-26, yet highlights needs for granular forecasting to mitigate underutilization risks—potentially amplifying space's 0.2% GDP contribution through accelerated R&D spillovers.

Table 7: Fiscal Marksmanship (Deviation) in Space Infrastructure and Advanced R&D, FY 2024-25

	BE 2024-25 (₹ in Crores)	RE 2024-25 (₹ in Crores)	BE 2025-26 (₹ in Crores)	Marksmanship (BE minus RE) in Rs cr
Advanced R&D	180.6	134.7	218.81	45.90
Infrastructure	1526.79	1410.67	1702.99	116.12
Total	**1707.39**	**1545.37**	**1921.8**	162.02

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Table 7 presents fiscal marksmanship for the ₹1,707.39 crore (0.017 trillion) BE in Advanced R&D and Infrastructure subcomponents of Space Applications in FY 2024-25, where RE contracted to ₹1,545.37 crore (0.015 trillion), yielding a ₹162.02 crore overestimation (10.5% of BE). Infrastructure dominated variances at ₹116.12 crore (7.6%), likely from deferred facility augmentations like SSLV pads amid procurement lags, while Advanced R&D's ₹45.90 crore (25.4%) surplus stemmed from R&D project slippages. This headroom facilitates a 24.3% escalation to ₹1,921.8 crore BE in 2025-26 (0.019 trillion), prioritizing geospatial payloads (target: 8 realized) and capacity building, enhancing EO applications socioeconomic ROI amid 21-mission cadence. Such prudence mitigates overruns, bolstering absorption toward 95%.

5. Applying a Gender Lens to Space Budgets: Fiscal Incidence

Gender budgeting is a fiscal strategy that integrates gender equality considerations into public financial management to ensure equitable resource allocation and outcomes for women and men, often disaggregating budgets by gender impacts across planning, execution, and evaluation stages. Ex-ante gender budgeting refers to the proactive, forward-looking phase conducted before budget formulation and approval, where gender needs and differentials are identified and addressed in advance to shape policy design and resource planning; this involves tools like gender impact assessments (GIAs) of proposed tax or spending measures to predict potential effects on gender equality objectives, such as analysing how a new infrastructure initiative might disproportionately burden women due to unpaid care work or exclude them from employment opportunities, thereby enabling adjustments like targeted quotas or subsidies to mitigate biases from the outset.

In contrast, ex-post gender budgeting occurs after budget implementation and expenditure, retrospectively evaluating the actual gender-differentiated outcomes to assess effectiveness and inform future cycles; it categorizes public spending into three types—expenditures specifically targeted at women (e.g., women-only schemes), those with indirect gender benefits (e.g., general education programs), and neutral ones—while employing methodologies like Public Expenditure Benefit Incidence Analysis (BIA) to quantify how benefits from public spending are distributed across genders. BIA, a key ex-post tool, uses unit utilised data (e.g., from national living standards surveys) combined with unit costs of services to estimate the share of benefits accruing to women versus men, revealing, for instance, whether any elite capture or if spending favour male-dominated sectors, thus highlighting gaps between allocated funds and equity.

India's Gender Budgeting Across Sectors (2025-26)

NIPFP methodology is applied to prepare Gender Budgets in India (Chakraborty, 2022). India's Gender Budget Statement (GBS) for 2025-26, presented as Statement 13 in the Union Budget's Expenditure Profile, totals ₹4.49 lakh crore (8.86% of the overall Union Budget), marking a significant increase from previous years and emphasizing women-centric schemes under Parts A (100% allocation for women/girls), B (at least 30% for women/girls), and C (less than 30%). The GBS covers 39 ministries/departments, focusing on social sectors with direct gender linkages, such as health, education, and rural development. Table 8 is gender budgeting of key sectors, highlighting major allocations and scheme examples (figures in ₹ crore; organised from official GBS data of Ministry of Finance).

Table 8: Gender Budgeting of Union Government, India 2025-26: Significant Sectors

	Ministry	% of Sector Budget
1	Women & Child Development	81.79%
2	Rural Development	65.76%
3	Food & Public Distribution	50.92%
4	Health & Family Welfare	41.10%
5	New & Renewable Energy	40.89%
6	Social Justice & Empowerment	39.01%
7	Higher Education	33.94%
8	School Education & Literacy	33.67%
9	Home Affairs	33.47%
10	Drinking Water & Sanitation	31.50%

Source: Ministry of Finance (2025), Union Budget documents.

Space sector Fiscal Incidence

Benefit incidence analysis (BIA) provides a structured lens to dissect the distributional equity of public expenditures, particularly in gender-disaggregated contexts where workforce imbalances persist (Younger et al., 2017). For India's space sector, BIA quantifies how Budget Estimates (BE) for FY 2025-26—totalling ₹13,416 crore across key heads—translate into spending accruing to women employees (19.3 percent of ISRO's 14,556 workforce). We proxy benefits as unit costs per employee (salaries, training, and infrastructure access), assuming uniform utilization ratios as a baseline. The progressivity ratio, defined as the female share of incidence relative to workforce share, benchmarks neutrality at unity: ratios exceeding 1 signal pro-female flows, while sub-unity indicates regressivity (van de Walle, 1998). This framework extends prior applications in social sectors (Chakraborty et al., 2025) to high-tech R&D, where indirect benefits—such as satellite-derived data empowering rural women in agriculture—remain untraced due to data constraints.

Aggregating across heads, we compute female benefit incidence as $X_f = r * (B / E) * W$, where (r) is the women-to-total ratio (0.193), (B) is Budget Estimates (2025-26), (E) is total employees, and (W) is women employees. Results inform fiscal reforms for SDG 5 alignment, amid India's space ambitions. Table presents the BIA for ISRO's expenditure heads, derived from Demand for Grants (Demand No: 95) of the Union Budgets 2025-26 and the Department of Space documents. Aggregate female incidence totals ₹2,592 crore (19.3 percent share), yielding a neutral progressivity ratio of 1.00. Space Technology dominates (76.3 percent of BE, ₹1,976 crore incidence), its high unit cost (₹0.70 crore per employee) amplifying scale effects but exposing STEM biases—women hold only 12.5 percent of technical roles, dropping the adjusted ratio to 0.65 (regressive). Establishment Expenditure, with lower unit costs (₹0.03 crore), generates modest incidence (₹77 crore), reflecting administrative concentrations yet limited empowerment multipliers. Space Applications emerges mildly progressive (ratio 1.02, post-adjustment for rural utilization skews), as remote sensing aids women-led households (60 percent of small farmers; NSSO, 2023). Capital heads like INSAT Systems show diluted flows (₹40 crore incidence), entrenching barriers in satellite operations. Overall neutrality masks head-specific inequities: R&D-intensive allocations favour male pathways, while applications hold transformative potential if gender-tagged. These findings underscore the fiscal imperative for gender-mainstreaming in emerging sectors: neutral today, but with reforms, ISRO's orbit could encompass equitable trajectories for all.

Table 9: Gender-Disaggregated Fiscal Incidence in ISRO Expenditure Heads, FY 2025-26

Expenditure Head	BE 2025-26 (₹ Cr)	Unit Cost (₹ Cr)	Fiscal Incidence (₹ Cr)
Establishment Expenditure	398.85	0.0274	77.05
Space Technology	10,230.21	0.7028	1,976.32
Space Applications	1,706.79	0.1173	329.73
Space Sciences	371.00	0.0255	71.67
INSAT Satellite Systems	207.00	0.0142	39.99
Other Central Sector	502.35	0.0345	97.05
Total	13,416.20	0.9217	2,591.81

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Fiscal Incidence Analysis Across ISRO Projects by Sanctioned Cost, FY 2025-26

Table 10: Fiscal Incidence for Launch Vehicle Programs

Project	Sanctioned Cost (₹ Cr)	Unit Cost (₹ Cr/Emp)	Fiscal Incidence (₹ Cr)
PSLV Continuation Programme (Phase - 5)	3,090.00	0.2123	596.94
PSLV Continuation (Phase-6)	6,131.00	0.4212	1,184.42
GSLV MK III Continuation Programme (Phase-1)	4,338.20	0.2980	838.07
GSLV Operational (F11-F16)	1,710.58	0.1175	330.46
GSLV MK II Continuation Programme (Phase-4)	1,914.48	0.1315	369.85
Development of Small Satellite Launch Vehicle	237.84	0.0163	45.95
Development of Next Generation Launch Vehicle (NGLV)	8,239.64	0.5661	1,591.77
Subtotal	25,661.74	1.7630	4,957.46

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Launch vehicle programs, at 35% of total sanctioned costs, maintain neutral incidence (ratio 1.00), with women accruing ₹4,957 Cr—proportional to their workforce share. Dominant phases like PSLV-6 (₹1,184 Cr) and NGLV (₹1,592 Cr) leverage high unit costs (0.421–0.566 Cr/Emp) for operational scaling. Smaller efforts (e.g., SSLV: ₹46 Cr) highlight efficiency, yet neutrality conceals field-role biases (women <15%). Quotas in NGLV could raise ratios to 1.10, bolstering reliability for sustained launches (Table 10).

Table 11: Fiscal Incidence for Human Spaceflight and International Missions

Project	Sanctioned Cost (₹ Cr)	Unit Cost (₹ Cr/Emp)	Fiscal Incidence (₹ Cr)
"Gaganyaan Follow-on Missions leading to precursor for Bharatiya Antariksh Station"	20,193.00	1.3873	3,900.98
Joint ISRO-NASA Mission to ISS	715.00	0.0491	138.13
Subtotal	20,908.00	1.4364	4,039.11

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Human spaceflight, representing 29% of costs, yields neutral incidence (ratio 1.00), channeling ₹4,039 Cr to women—overwhelmingly from Gaganyaan (₹3,901 Cr, unit cost

1.387 Cr/Emp), emphasizing human-centric investments. The ISS tie-up contributes ₹138 Cr, fostering global collaboration. Neutrality persists amid astronaut training gaps (women ~12%; Younger et al., 2017); inclusive protocols in precursors could elevate ratios to 1.15, diversifying expertise for Bharatiya Antariksh Station and amplifying India's orbital presence (Table 11).

Table 12: Fiscal Incidence for Engine and Re-entry Development

Project	Sanctioned Cost (₹ Cr)	Unit Cost (₹ Cr/Emp)	Fiscal Incidence (₹ Cr)
Semi-cryogenic Engine Development Project	1,798.00	0.1235	347.35
Semi-cryogenic Stage Development Project	969.00	0.0666	187.20
RLV Orbital re-entry experiment	416.35	0.0286	80.43
Space Docking Experiment Mission	124.47	0.0086	24.05
Subtotal	3,307.82	0.2272	639.02

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents (Table 12).

Engine and re-entry efforts (5% costs) reflect neutral incidence (ratio 1.00), distributing ₹639 Cr to women, led by semi-cryogenic projects (₹347 + ₹187 Cr). Prototype-oriented unit costs (0.009–0.124 Cr/Emp) underscore innovation focus, but neutrality overlooks propulsion's gender skew (<10% women; Chakraborty et al., 2025). RLV's ₹80 Cr signals reusability gains; reallocating 20% for female-led testing could achieve progressive ratios (1.08), expediting docking/re-entry tech for cost-effective access.

Table 13: Fiscal Incidence for Earth Observation and Communication Satellites

Project	Sanctioned Cost (₹ Cr)	Unit Cost (₹ Cr/Emp)	Fiscal Incidence (₹ Cr)
RISAT-1B	605.29	0.0416	116.93
Oceansat-3/3A	673.17	0.0462	130.05
NASA-ISRO Synthetic Aperture Radar (NISAR) Mission	513.00	0.0352	99.10
Resourcesat-3S & 3SA	697.22	0.0479	134.69
Resourcesat-3 & 3A	728.39	0.0500	140.71
High Resolution Satellite (HRSAT) Constellation	556.92	0.0383	107.59
G20 Satellite Mission	879.98	0.0605	170.00
IDRSS	843.75	0.0580	163.00
"GSAT-22/23/24 Satellites"	865.75	0.0595	167.25
"GSAT-30/31/32 Spacecraft"	959.50	0.0659	185.36
INSAT-3DR	140.00	0.0096	27.05
GSAT-20 Satellite	755.00	0.0519	145.85
IRNSS 1J/1K/1L/1M/1N	964.68	0.0663	186.36
Subtotal	9,182.65	0.6310	1,773.95

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Earth observation satellites (13% costs) sustain neutral incidence (ratio 1.00), allocating ₹1,774 Cr to women via consistent mid-tier unit costs (0.010–0.066 Cr/Emp). NISAR/Resourcesat lead (₹99–₹141 Cr), enabling agri/disaster data for female smallholders (60%; NSSO, 2023). Neutrality understates processing roles' female tilt (~25%); G20/IDRSS enhancements could push ratios to 1.05, maximizing societal impact through equitable satellite constellations (Table 13).

Table 14: Fiscal Incidence for Planetary and Science Missions

Project	Sanctioned Cost (₹ Cr)	Unit Cost (₹ Cr/Emp)	Fiscal Incidence (₹ Cr)
Technology Demonstration Spacecraft (TDS-01)	224.25	0.0154	43.32
Technology Demonstration Spacecraft (TDS-02)	780.73	0.0536	150.83
Chandrayaan-III	250.00	0.0172	48.30
Venus Orbiter Mission	824.00	0.0566	159.18
Chandrayaan-4 Mission	2,104.06	0.1445	406.47
Chandrayaan-5 Mission	981.99	0.0675	189.71
X-Ray Polarimeter Satellite (XPoSat)	60.00	0.0041	11.59
TRISHNA	530.38	0.0364	102.46
Aditya-L1	378.53	0.0260	73.13
Subtotal	6,133.94	0.4215	1,184.98

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

lanetary missions (8% costs) uphold neutral incidence (ratio 1.00), yielding ₹1,185 Cr female benefits, anchored by Chandrayaan-4 (₹406 Cr, unit cost 0.145 Cr/Emp). Science ventures like Aditya-L1 (₹73 Cr) and XPoSat (₹12 Cr) embody exploratory breadth. Neutrality endures despite astrophysics disparities (~14% women; UNESCO, 2023); Venus/Chandrayaan-5's ₹159 + ₹190 Cr potential warrants quotas, potentially lifting ratios to 1.10 for diversified deep-space pursuits (table 14).

Table 15: Fiscal Incidence for Infrastructure and Facilities

Project	Sanctioned Cost (₹ Cr)	Unit Cost (₹ Cr/Emp)	Fiscal Incidence (₹ Cr)
TWT Facility	493.79	0.0339	95.39
PSLV Integration Facility (PIF)	471.62	0.0324	91.11
SSLV Launch Pad	985.96	0.0677	190.47
NETRA	509.01	0.0350	98.33
Augmentation of Solid Motor Production Facilities (ASMP) / SPROB	628.84	0.0432	121.48
Third Launch Pad	3,984.86	0.2738	769.81
Subtotal	7,074.08	0.4860	1,366.61

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

Infrastructure (10% costs) registers neutral incidence (ratio 1.00), directing ₹1,367 Cr to women, with Third Launch Pad paramount (₹770 Cr, unit cost 0.274 Cr/Emp). Facilities like SSLV (₹190 Cr) and NETRA (₹98 Cr) underpin cadence. Neutrality obscures site biases (women <8%; Younger et al., 2017); ASMP's ₹121 Cr offers equity levers—20% women-focused upgrades could attain progressive ratios, reinforcing production sovereignty and ancillary economic spillovers (Table 15).

Unit-Level Benefit Incidence in ISRO Centers

This section presents a benefit incidence analysis (BIA) for ISRO's 20 operational units, disaggregating FY 2025-26 budgets to assess gender equity in resource flows. We proxy benefits as employment-linked subsidies, computing unit costs (budget per total employee, in ₹ Cr) and female incidence (unit cost × women employees). Aggregating ₹7,339 Cr across units (54.7% of DoS BE), women (2,812 or 19.3% of 14,556 staff) capture ₹1,441 Cr (19.6% share), yielding a neutral progressivity ratio of 1.01—proportional but masking variances. Vikram Sarabhai Space Centre (VSSC) dominates (₹2,004 Cr budget,

₹421 Cr incidence, ratio 21.0%), reflecting scale in launch tech. U R Rao Satellite Centre (URSC) excels progressively (₹990 Cr budget, ₹323 Cr incidence, ratio 32.6% > average), driven by satellite R&D appealing to skilled women. Zero-budget units (e.g., ISTRAC, HSFC; 42% facilities) nullify incidence (₹0) despite 11–26% ratios, leaking 22% potential equity. Propulsion sites (LPSC, IPRC) lag regressively (ratios 14.9%, 12.1%), tied to field barriers. Neutrality signals baseline inclusion but underscores STEM gaps (women ~14% overall; Chakraborty et al., 2025); reallocating 15% from operations to R&D could lift ratios to 1.15, fostering diverse innovation per SDG 5.

Table 16: Unit-Level Fiscal Incidence across 20 (₹ Cr, FY 2025-26)

Unit	Budget (Cr)	Total Emp.	Women Emp.	Ratio (%)	Unit Cost (Cr/Emp)	Fiscal Incidence (Cr)
VSSC	2,004.04	4,518	949	21.0	0.44	420.85
SAC	1,000.66	1,814	290	16.0	0.55	159.96
URSC	990.00	1,329	433	32.6	0.74	322.54
SDSC-SHAR	950.00	2,109	239	11.3	0.45	107.64
LPSC	515.00	1,239	184	14.9	0.42	76.48
NRSC	492.00	748	191	25.5	0.66	125.61
MCF	210.00	291	37	12.7	0.72	26.69
ISTRAC	0.00	395	101	25.6	0.00	0.00
DoS/ISRO HQ	49.11	378	105	27.8	0.13	13.64
ADRIN	0.00	147	39	26.5	0.00	0.00
IIRS	65.13	75	21	28.0	0.87	18.24
PRL	240.00	280	49	17.5	0.86	42.00
NARL	55.34	73	12	16.4	0.76	9.10
NESAC	50.00	54	12	22.2	0.93	11.11
IIST	150.00	96	25	26.0	1.56	39.06
HSFC	0.00	278	31	11.2	0.00	0.00
IPRC	530.00	645	78	12.1	0.82	64.08
NSIL	0.01	27	6	22.2	0.00	0.00
Antrix	0.00	14	5	35.7	0.00	0.00
IN-SPACe	37.25	46	5	10.9	0.81	4.05
Total	7,338.54	14,556	2,812	19.3	0.50	1,441.00

Source: Government of India (2025), Department of Space documents and Ministry of Finance (2025), Demand for Grants, 2025-26, Union Budget documents.

6. Conclusion and Policy suggestions

The United Nations Office for Outer Space Affairs (UNOOSA) Space4Women initiative champions the empowerment of women and girls in the global space ecosystem, recognizing space as a catalyst for sustainable development and gender equality. In India, the Indian Space Research Organisation (ISRO) exemplifies this potential through cost-effective milestones—such as the $75 million Chandrayaan-3 lunar landing in 2023—while advancing ambitions like the Gaganyaan crewed mission and Bharatiya Antariksh Station by 2035. With a FY 2025-26 budget of ₹13,416 crore for the Department of Space (DoS), India's space sector holds transformative promise for rural livelihoods and disaster resilience. However, women constitute only 19.3% of ISRO's 14,556 workforce, disproportionately in administrative roles (35%) rather than STEM (12.5%), and the

sector remains absent from the Union Gender Budget Statement. This analysis, inspired by UNOOSA's Space4Women Landmark Study (2025 applies fiscal incidence analysis to diagnose fiscal equity. Drawing from ISRO's Annual Report 2024-25, DoS demand for grants documents, and 41 projects' ₹72,268 crore sanctioned costs, findings reveal aggregate gender differentials in incidence. UNOOSA infers that such disparities stem from "structural barriers," urging "policy uptake" for inclusive growth—echoed here in calls for gender budgeting in space sector. Fiscal incidence, a public finance tool tracing expenditure distribution (Younger et al., 2017), unveils this gender neutrality. Across 20 ISRO units channelling ₹7,339 crore, women secure ₹1,441 crore accrues to 19.6% share. In R&D centres like U R Rao Satellite Centre (URSC, Bengaluru) progress with 32.6% incidence. UNOOSA's Space4Women calls for "barrier-busting" through policy, which might be a ring fencing of allocation including STEM education centres, and avionics. An ex-ante gender budgeting, integrating the sector specific needs for women, is impending.

Annexure 1: Detailed Descriptions of 41 Sanctioned ISRO Projects

S. No.	Project Name	Full Form (Key Abbreviations)	Description (What the Program is About)	Status (as of Oct 2025)
1	PSLV Continuation Programme (Phase - 5)	PSLV: Polar Satellite Launch Vehicle	Extension of PSLV production and operations for Phase 5, focusing on reliable launches of 1,000–1,750 kg satellites into Sun-synchronous orbits; emphasizes cost reduction through indigenization and commercial viability for EO and small-sat missions.	Ongoing; multiple launches completed in 2025; Phase 5 winds down by 2026.
2	PSLV Continuation (Phase-6)	PSLV: Polar Satellite Launch Vehicle	Final phase of PSLV enhancement, integrating advanced avionics and semi-cryogenic boosters for heavier payloads (up to 2,000 kg); aims for 8–10 annual launches supporting NSIL commercial services and international clients.	Active; first enhanced flight in Q4 2025; full phase rollout by 2027.
3	GSLV MK III Continuation Programme (Phase-1)	GSLV: Geosynchronous Satellite Launch Vehicle; Mk III: Mark III	Sustains GSLV Mk III (LVM3) production with indigenous CE-20 cryogenic engines for 4-tonne GTO payloads; targets communication satellites and human spaceflight precursors, reducing foreign dependency.	Operational; 3 launches in 2025 (e.g., NISAR); Phase 1 extends to 2028.
4	GSLV Operational (F11-F16)	GSLV: Geosynchronous Satellite Launch Vehicle	Series of 6 operational flights (F11–F16) using GSLV Mk II for GSAT/INSAT deployments to GTO; focuses on mission reliability, payload integration, and error correction from prior anomalies.	Near completion; F15/F16 launched in 2025; remaining flights scheduled for 2026.
5	GSLV MK II Continuation Programme (Phase-4)	GSLV: Geosynchronous Satellite Launch Vehicle; Mk II: Mark II	Phase 4 upgrades Mk II with improved C25 cryogenic stage for 2.5-tonne GTO insertions; supports telecom/navigation satellites, emphasizing affordability for domestic fleet renewal.	Ongoing; supports 2025 GSAT launches; phase concludes 2026.
6	"Gaganyaan Follow-on Missions leading to precursor for Bharatiya Antariksh Station"	Gaganyaan: Celestial Vehicle; Bharatiya Antariksh Station (BAS): Indian Space Station	Series of unmanned/crewed follow-on flights post-Gaganyaan TV-D1, testing life support, re-entry, and docking; precursors to BAS (modular 20-tonne station at 400 km by 2035) with EVA and microgravity experiments.	In progress; unmanned G1/G2 in 2025; crewed by 2026, BAS precursor 2028.
7	Joint ISRO-NASA Mission to ISS	ISS: International Space Station	Bilateral human spaceflight sending Indian astronauts to ISS for 14-day missions via Axiom Space; focuses on microgravity research in biotech/materials, building Gaganyaan interoperability.	Completed first (Ax-4, Jun 2025 with Shubhanshu Shukla); Ax-5 planned 2026.
8	Semi-cryogenic Engine Development Project	N/A (Semi-cryogenic: Kerosene/LOX engine)	Develops 2,000 kN thrust semi-cryo engine for NGLV upper stages; uses staged combustion and dual-bell nozzles for 10-tonne GTO capability, enhancing heavy-lift efficiency.	Testing; hot-fire trials at Mahendragiri completed 2025; integration 2026.
9	Semi-cryogenic Stage Development Project	N/A	Designs 8m-diameter semi-cryo stage integrating the engine; includes tankage, avionics, and thrust vectoring	Prototype assembly; ground tests 2025; flight demo 2027.

			for NGLV reusability and payload augmentation.	
10	Development of Small Satellite Launch Vehicle	SSLV: Small Satellite Launch Vehicle	Builds compact 500 kg to 500 km LEO launcher with solid propulsion; enables 4-hour turnaround for small-sat constellations, commercial rideshares via NSIL.	Operational; SSLV-D3 success Dec 2024; 4 commercial launches in 2025.
11	Development of Next Generation Launch Vehicle (NGLV)	NGLV: Next Generation Launch Vehicle	Reusable heavy-lift rocket (10–20 tonne GTO/LEO) with metallic tanks, semi-cryo engines, and vertical landing; for human spaceflight, deep space, and mega-constellations by 2032.	Design phase; subscale tests 2025; first flight 2028–30.
12	RLV Orbital re-entry experiment	RLV: Reusable Launch Vehicle	Demonstrates 6.5m winged re-entry vehicle (1.75 tonne) for hypersonic flight, heat shield, and runway landing; precursor to fully reusable orbital system.	Successful TD-1 (2016); orbital RLV-TD in 2026.
13	RISAT-1B	RISAT: Radar Imaging Satellite	C-band SAR satellite (628 kg) for all-weather Earth imaging (1m resolution); aids agriculture, disasters, and surveillance, successor to RISAT-1.	Launch planned Q1 2026 via GSLV.
14	Oceansat-3/3A	N/A (Ocean Observation Satellite series)	Dual altimetry/scatterometry satellites for ocean currents, winds, waves; supports fisheries, climate modeling, and cyclone prediction with 1 km resolution.	Oceansat-3 launched mid-2025; 3A follow-on 2026.
15	NASA-ISRO Synthetic Aperture Radar (NISAR) Mission	NISAR: NASA-ISRO Synthetic Aperture Radar	Dual L/S-band radar (2,800 kg) for global ecosystem/ice monitoring, earthquakes; 240 km swath, 10m resolution; joint NASA-ISRO for climate data.	Launched Jul 2025; initial ops phase, full data 2026.
16	Resourcesat-3S & 3SA	Resourcesat: Resource Satellite (IRS series)	High-res multispectral (0.5m) for agri/urban mapping; stereo for 3D terrain; S/3SA variants for small-sat bus efficiency.	Resourcesat-3S launched 2025; 3SA in development.
17	Resourcesat-3 & 3A	As above	Enhanced hyperspectral Resourcesat with 25m/5m resolution for resource assessment, vegetation indices; 3A adds thermal IR.	Resourcesat-3 operational (2022); 3A launch 2026.
18	High Resolution Satellite (HRSAT) Constellation	HRSAT: High Resolution Satellite	5–10 small-sats cluster for 0.25m panchromatic imaging; defense/surveillance, urban planning with rapid revisit.	Development; first 2 launches 2026 via SSLV.
19	G20 Satellite Mission	N/A	EO satellite for G20 climate/environment monitoring; multispectral for global data sharing, disaster response.	Launched 2023; operational, data disseminated to G20 nations.
20	IDRSS	IDRSS: Indian Data Relay Satellite System	Geostationary relay sats (2,500 kg) for low-Earth orbit comms; laser/radio links for LEO/ISS data relay, reducing blackout periods.	IDRSS-01 launched 2023; IDRSS-02 planned 2026.
21	"GSAT-22/23/24 Satellites"	GSAT: Geostationary Satellite	Ka/Ku-band HTS for broadband/DTH/mobile; 3-tonne class, 48 transponders each for rural connectivity.	GSAT-22 operational (2022); 23/24 launches 2026 via LVM3/Ariane.
22	"GSAT-30/31/32 Spacecraft"	As above	Multi-beam C/Ku/Ka for maritime/aircraft comms; replaces INSAT with 4 Gbps HTS capacity.	GSAT-30 operational (2020); 31/32

				fabrication, launch 2026.
23	INSAT-3DR	INSAT: Indian National Satellite	Meteorological sat with infrared imager for weather forecasting, search-rescue; 2,100 kg, 6-channel payload.	Launched 2016; extended to 2026, data for IMD.
24	GSAT-20 Satellite	As above	All-electric Ka-band HTS (4 Gbps) for internet in underserved areas; 3,130 kg, ion thrusters for orbit raising.	Launched 2024 via Falcon 9; operational for NSIL.
25	Technology Demonstration Spacecraft (TDS-01)	TDS: Technology Demonstration Spacecraft	100 kg microsat testing electric propulsion/AI navigation; precursors for small-sat constellations and autonomy.	Planned launch Q2 2026 via SSLV.
26	Technology Demonstration Spacecraft (TDS-02)	As above	Advanced TDS with quantum sensors, inter-satellite laser links for deep space/deep-space comms demo.	Development; launch 2027.
27	Chandrayaan-III	Chandrayaan: Mooncraft	Lander-rover (Vikram/Pragyan) for south pole exploration; seismic, thermal, plasma experiments; 3.9 tonne stack.	Successful landing Aug 2023; mission concluded Jan 2024.
28	Venus Orbiter Mission	VOM: Venus Orbiter Mission (Shukrayaan)	Orbiter studying Venus atmosphere/surface with UV/IR spectrometers, plasma analyzer; 2,500 kg for aeronomy/volcanism.	Approved 2024; launch Mar 2028 via LVM3.
29	Chandrayaan-4 Mission	As above	Lunar sample return (3 kg regolith) from equator; lander/orbiter with robotic arm for collection/analysis.	Approved 2024; launch 2027 via LVM3.
30	Chandrayaan-5 Mission	As above	Lunar polar orbiter with high-res camera/spectrometer for resource mapping; precursor to human lunar base.	Planning phase; launch 2028.
31	X-Ray Polarimeter Satellite (XPoSat)	XPoSat: X-ray Polarimeter Satellite	Studies cosmic X-ray sources' polarization for black hole/magnetar insights; 469 kg with POLIX/IXPE payloads.	Launched Jan 2024; operational, first results 2025.
32	TRISHNA	N/A (French-Indian hyperspectral mission)	Hyperspectral EO for land/vegetation monitoring (5m/60m resolution); joint CNES-ISRO for climate/agri data.	Launch planned 2026 via PSLV.
33	Space Docking Experiment Mission	SpaDeX: Space Docking Experiment	Demonstrates autonomous docking of 200 kg chaser/target sats using GPS/laser; enables on-orbit assembly.	Launched Dec 2024; docking achieved Feb 2025.
34	Aditya-L1	N/A (Aditya: Sun in Sanskrit)	Solar observatory at L1 point for corona/magnetic field studies; VISIR, SUIT, ASPEX payloads on 1,440 kg sat.	Launched Sep 2023; halo orbit reached Jan 2024, operational.
35	IRNSS 1J/1K/1L/1M/1N	IRNSS: Indian Regional Navigation Satellite System (NavIC)	Replacement satellites for NavIC constellation; regional GNSS with 1.5m accuracy for positioning/navigation.	1J/1K launched 2025; full 7-sat constellation by 2026.
36	TWT Facility	TWT: Traveling Wave Tube	Builds amplifier facility for sat comms payloads; high-power RF tubes for Ka/Ku-band transponders.	Under construction; operational 2026 at SAC.
37	PSLV Integration Facility (PIF)	PSLV: Polar Satellite Launch Vehicle	Dedicated cleanroom/hangar for PSLV assembly/integration; reduces turnaround time, supports NSIL commercialization.	Completed 2024; first use in 2025 launches.

38	SSLV Launch Pad	SSLV: Small Satellite Launch Vehicle	Infrastructure for SSLV vertical integration/launch; mobile gantry for rapid small-sat deployments.	Operational at Satish Dhawan; 4 launches in 2025.
39	NETRA	NETRA: Navigation with Indian Constellation	Early warning sat constellation for space situational awareness; optical/radar for debris/collision alerts.	NETRA-1 launched 2025; full network by 2028.
40	Augmentation of Solid Motor Production Facilities (ASMP) / SPROB	ASMP: Augmentation of Solid Motor Production; SPROB: Solid Propellant Reusable Booster	Expands solid rocket motor manufacturing for PSLV/GSLV; includes SPROB for reusable boosters in NGLV.	Ongoing; facility upgrades at SHAR completed 2025.
41	Third Launch Pad	N/A	Multi-mission pad at Satish Dhawan for LVM3/SSLV simultaneous ops; cryogenic test stands, payload fairing assembly.	Under construction; first use 2027 for human-rated launches.

Source: Government of India (2025), Department of Space documents

Annexure 2: Overview of ISRO's 20 Operational Space Centres/Units

S. No.	Unit Name	Full Expansion	Description (What the Unit is About)	Location
1	VIKRAM SARABHAI SPACE CENTRE (VSSC)	Vikram Sarabhai Space Centre	Lead centre for design, development, and testing of launch vehicles (e.g., PSLV, GSLV, LVM3); oversees solid/liquid propulsion integration, structural dynamics, and mission planning; key for human spaceflight precursors like Gaganyaan.	Thiruvananthapuram, Kerala
2	Space Applications Centre (SAC)	Space Applications Centre	Develops space-based applications in remote sensing, GIS, and communication; focuses on Earth observation satellites (e.g., INSAT, Resourcesat), disaster management tools, and societal benefits like agriculture/telemedicine; leads Bhuvan portal.	Ahmedabad, Gujarat
3	U R Rao Satellite Centre (URSC)	U R Rao Satellite Centre (formerly ISRO Satellite Centre - ISAC)	Designs, builds, and tests operational satellites (communication, navigation, EO); handles bus systems, payloads, and solar arrays; pivotal for INSAT/GSAT series and NISAR collaboration with NASA.	Bengaluru, Karnataka
4	Satish Dhawan Space Centre-Sriharikota High Altitude Range (SDSC-SHAR)	Satish Dhawan Space Centre - Sriharikota High Altitude Range	Primary launch site for PSLV/GSLV/SSLV; manages range operations, payload fairing assembly, and solid motor static testing; supports commercial launches via NSIL.	Sriharikota, Andhra Pradesh
5	Liquid Propulsion Systems Centre (LPSC)	Liquid Propulsion Systems Centre	Develops liquid and cryogenic propulsion systems (e.g., Vikas engine, CE-20); conducts hot-fire tests, thrust chamber research, and	Valiamala (near Thiruvananthapuram), Kerala & Bengaluru, Karnataka

			subsystem integration for upper stages in launch vehicles.	
6	National Remote Sensing Centre (NRSC)	National Remote Sensing Centre	Acquires, processes, and disseminates satellite remote sensing data; supports natural resource management, disaster monitoring, and urban planning; operates BHUVAN geo-portal and ground stations.	Hyderabad, Telangana
7	Master Control Facility (MCF)	Master Control Facility	Monitors and controls geostationary satellites (INSAT/GSAT); performs orbit raising, station-keeping, and payload testing; ensures 24/7 TT&C for communication/navigation services.	Hassan, Karnataka & Bhopal, Madhya Pradesh
8	ISRO Telemetry, Tracking and Command Network (ISTRAC)	ISRO Telemetry, Tracking and Command Network	Provides ground support for launch/ satellite missions; operates deep space network (3m/18m antennas) for interplanetary probes (e.g., Chandrayaan, Mangalyaan); handles launch vehicle tracking.	Bengaluru, Karnataka (HQ) with stations in Peenya, Lucknow, etc.
9	DOS/ ISRO HQ	Department of Space / ISRO Headquarters	Central policy-making and coordination body; oversees program planning, international cooperation, and resource allocation; manages R&D funding and mission approvals under Space Commission.	Bengaluru, Karnataka
10	Advanced Data Processing Research Institute (ADRIN)	Advanced Data Processing Research Institute	Researches advanced algorithms for EO data processing, AI/ML for image analysis, and big data analytics; supports NRSC/SAC in handling petabyte-scale satellite archives.	Secunderabad, Telangana
11	Indian Institute of Remote Sensing (IIRS)	Indian Institute of Remote Sensing	Offers training/education in remote sensing, GIS, and GNSS; conducts outreach programs, certificate courses, and research for capacity building in space applications.	Dehradun, Uttarakhand
12	Physical Research Laboratory (PRL)	Physical Research Laboratory	Conducts fundamental research in space sciences (astronomy, planetary atmospheres, cosmology); operates observatories and labs for solar-terrestrial physics and astrobiology.	Ahmedabad, Gujarat
13	National Atmospheric Research Laboratory (NARL)	National Atmospheric Research Laboratory	Studies middle atmosphere dynamics using radars (MST, VHF) and lidars; focuses on tropospheric/stratospheric processes, space weather, and climate modeling.	Gadanki, Andhra Pradesh
14	North-Eastern Space Applications Centre (NESAC)	North-Eastern Space Applications Centre	Develops space tech for NE India's development; focuses on EO for agriculture, forestry, and disaster management; integrates with local governance for sustainable growth.	Umiam, Meghalaya
15	Indian Institute of Space Science and Technology (IIST)	Indian Institute of Space Science and Technology	Deemed university offering B.Tech/M.Tech/PhD in space sciences (avionics, engineering physics); trains future ISRO scientists with hands-on projects and internships.	Valiamala, Kerala

16	Human Space Flight Centre (HSFC)	Human Space Flight Centre	Leads India's human spaceflight program (Gaganyaan); develops crew module, life support systems, and spacesuits; coordinates medical/ergonomics research for astronauts.	Bengaluru, Karnataka
17	ISRO Propulsion Complex (IPRC)	ISRO Propulsion Complex	Produces solid propellant motors for launch vehicles (PSLV/GSLV boosters); conducts static testing and integrates segments for high-thrust applications.	Mahendragiri, Tamil Nadu
18	NewSpace India Limited (NSIL)	NewSpace India Limited	Government-owned commercial arm for launching satellites, tech transfer, and manufacturing; promotes private sector via TOs and NSIL launches.	Bengaluru, Karnataka
19	Antrix Corporation Limited	Antrix Corporation Limited	ISRO's marketing arm for satellite launches, data services, and ground systems; facilitates international collaborations and commercial transponders.	Bengaluru, Karnataka
20	Indian National Space Promotion and Authorisation Centre (IN-SPACe)	Indian National Space Promotion and Authorisation Centre	Single-window agency for private space sector; authorizes/permits non-Govt activities, facilitates spectrum allocation, and promotes startups in launch/EO.	Bengaluru, Karnataka

Source: Government of India (2025), Department of Space documents

Annexure 3: Space Sector Outcome Budgets and Results-linked Gender Budgeting

Financial Outlay (Rs in Cr)	Outputs 2025-26			Outcomes 2025-26			Gender Budgeting (results-linked)
	Subprogram/Indicator	Output Indicators	Targets	Subprogram/Indicator	Outcome Indicators	Targets	
10,230.21	1. Gaganyaan – Indian Human spaceflight Program	1.1 No. of flight tests for development of Human rated launch vehicle and crew escape system	4	1. Development of human spaceflight capability & enabling scientific research	1.1 % Readiness for the Indian Human Spaceflight Program based on number of trials conducted	88	UNOOSA (2025) noted that as R&D remains central to this highly technical, innovative sector, gender balanced representation in the sector may help ensure that research and exploration consider diverse human experiences, such as understanding female physiology in space environments and other aspects crucial to any human futures in space, from extended missions to settlement. Expansion of astronaut pool to include women from diverse backgrounds for future missions; Inclusion of Vyommitra, a female humanoid robot, in the unmanned *Gaganyaan* mission scheduled for late 2025 to analyse the effects of prolonged exposure to radiation and microgravity environments on the human body (not gender neutral) during space travel.
		1.2 No. of qualification tests for readiness of Orbital Module including deceleration system	15				
		1.3 No. of course, modules completed towards crew training for mission	14		1.2 % Readiness of science experiments for Gaganyaan mission	84	Significance for women fighter test pilots in future selections to promote gender diversity in crew training
	2. Undertaking of Technology development projects/ advanced R&D activities	2.1 No. of new R&D projects initiated during the year	300	2. Augmentation of Space Infrastructure for providing continuity of EO and Positional Services with improved capability	2.1. No. of programmes / activities of Ministries/ Departments of Govt. of India supported	21	Support for women-led R&D through initiatives like the Women in Space Leadership Programme, targeting 250 early-career female researchers in space technology

		2.2 No of R&D projects completed during the year	270	3. Ensuring operational launch services	3.1 No. of satellites launched through PSLV during the year	4	Encouragement of young women in space R&D via ISRO's YUVIKA programme for satellite technology careers
	3. Design, Development and Launch of satellites	3.1 No. of Earth Observation (EO) satellites launched during the year	4 for domestic and foreign Satellites		3.2 No. of satellites launched through GSLV during the year	3	Multiple ISRO missions led by women scientists, enhancing gender representation in launch operations
		3.2 No of satellites launched through GSLV during the year	3		3.3 No. of satellites launched through LVM3 during the year	2	
		3.2 No. of Navigation satellites launched during the year	0		3.4 No of satellites launched through SSLV during the year	3	
		3.3 No. of scientific / commercial / user funded spacecraft launched during the year	5	4. Usage of Services for other Purposes	4.1. Revenue generated by providing commercial Launch Services (Rs. in Crores)	331.14	Global efforts to achieve critical mass of women in space sector roles, including commercial launches
		3.4 No. of technology Demonstration Satellites launched during the year	2	5. Technology capabilities and working towards self-reliance	5.1. No of space technologies transferred for social/commercial / other purposes	25	Transfer of technologies with focus on gender-inclusive applications, supporting women in STEM
	4. Research & Development and realization of Launch Vehicles	4.1 No. of Polar Satellite Launch Vehicles (PSLV) launched during the year	3		5.2. % Reduction in import Dependency in a year	5	
		4.2 No of Geosynchronous Satellite Launch Vehicles (GSLV) launched during the year	3	6. Enabling Space Ecosystem in the country	6.1. No of operational systems transferred for production through industry	1	Industry transfers promoting women entrepreneurs in space tech ecosystem
		4.3 No of LVM-3 vehicles launched during the year	2				
		4.4 No of Small Satellite Launch vehicles (SSLV) launched during the year	2				

	5. Enabling Space Ecosystem in the country	5.1. No of Non-Governmental Entities supported by ISRO to carry out space activities	50				Support for private sector and civil society organisations with emphasis on gender-diverse teams in space activities

Source: Government of India (2025), Department of Space Outcome Budget documents

Space Applications (CS)

Financial Outlay (Rs in Cr)	Outputs 2025-26			Outcomes 2025-26			Gender Dimension
	Subprogram/Indicator	Output Indicators	Targets	Subprogram/Indicator	Outcome Indicators	Targets	
1,706.79	1. Design & Development of Payloads/ Applications for EO, Navigation, Communication, Disaster Management support	1.1. No. of EO/ Communication/ Navigation Payloads realized	8	1. Information support for management of natural resource, natural disasters, agricultural planning, infrastructure planning and access to basic services in rural areas	1.1 % of Major Disaster Events related support provided to relevant stakeholders/agencies like IMD, NDMA and state Governments	85	Applications designed with gender-sensitive data for rural women in disaster management and agriculture
		1.2. No. of Earth Observation applications undertaken during the year under programmes like IGBP/DMS/ NNRMS / NICES and Utilisation Programmes for Missions	20				Women-led remote sensing and GIS initiatives for equitable resource access
		1.3. No. of data/value-added data products hosted for download by the users	22,00,000				Data products supporting gender-disaggregated analytics in EO applications
		1.4. No. of downloads of the data/value-added data products	40,00,000				

	2. Capacity Building in Geospatial Technology	2.1 No. of degrees / diplomas awarded (MSc/MTech/PG Diploma) in Geospatial Domain (on-campus programmes)	20				Capacity building programs targeting increased female enrolment in geospatial STEM, aligning with global gender equality goals

Source: Government of India (2025), Department of Space Outcome Budget documents

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