Demand for Grants 2026-27 Analysis

Environment, Forests and Climate Change

Highlights

- Budget utilisation was low for several schemes, including the Control of Pollution scheme and Mission for Green India.
- Under Integrated Development of Wildlife Habitats scheme, 72% of the budget has been allocated for Project Tiger and Elephant.
- As of March 2023, CPCB had 33% vacancies.
- India reduced the emission intensity of GDP from 2005 levels by 36% in 2020 and reached renewable capacity of 51% as of December 2025.
- The number of polluted rivers stretches declined from 351 in 2017–18 to 296 in 2022–23, but in 2024, biochemical oxygen demand exceeded prescribed limits at 146 river monitoring stations.

The Ministry of Environment, Forest and Climate Change (MoEFCC) is responsible for environmental protection, conservation of forests and wildlife, and addressing climate change concerns. It oversees the implementation of laws such as the Environment (Protection) Act, 1986 (EPA), the Forest (Conservation) Act, 1980, the Wild Life (Protection) Act, 1972, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.

MoEFCC also supports state pollution control boards by providing them technical and financial assistance. It promotes environmental conservation through schemes related to afforestation, biodiversity protection, and climate action. It also plays a key role in implementing India's commitments under international environmental agreements such as the Paris Agreement and the Convention on Biological Diversity.

This note analyses the budget of the Ministry; examines the programmes it is implementing and the issues and challenges prevalent in the sector.

Overview of Finances

In 2026-27, the Ministry of Environment, Forests and Climate Change has been allocated Rs 3,759 crore, a 7% increase over 2025-26 revised estimates. This includes revenue expenditure of Rs 3,537 crore (94% of total expenditure) and capital expenditure of Rs 233 crore (6% of total).

Key allocations under the Ministry in 2026-27 include: (i) Rs 1,308 crore to the Control of Pollution Scheme (35%), (ii) Rs 651 crore to Environment, Forestry and Wildlife (17%), and (iii) Rs 637 crore towards Autonomous, Statutory and Regulatory bodies (17%).

Table 1: 2026-27 budgetary allocation for the Ministry (in Rs crore)

	2023-24 Actual	2025-26 Revised	2026-27 Budget	% Change
Revenue	2,131	3,307	3,537	7%
Capital	89	174	223	22%
Total	**2,220**	**3,482**	**3,759**	**7%**

Note: % change from 2025-26 Revised to 2026-27 Budget.
Sources: Demand for Grants 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

Table 2: Key expenditure items under the Ministry, 2026-27 (in Rs crore)

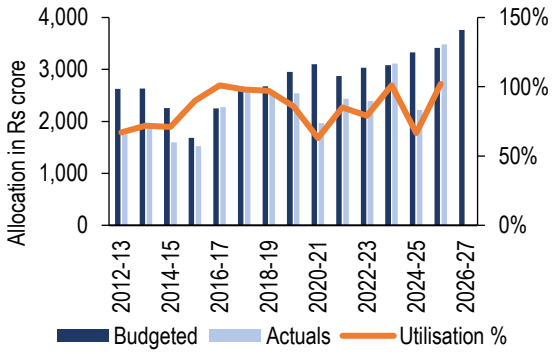
	2023-24	2025-26 RE	2026-27 BE	% change
Control of Pollution scheme	191	1,452	1,308	-11%
Environment, Forestry and Wildlife	606	392	651	40%
Autonomous Bodies	439	391	416	6%
Statutory and Regulatory Bodies	194	195	221	11%
Environmental Knowledge and Capacity Building	100	69	103	33%
National Coastal Mission	8	8	10	24%

Note: BE is Budget Estimates; RE is Revised Estimates; % change from 2025-26 RE to 2026-27 BE.
Sources: Demand for Grants 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

Utilisation of funds

Between 2017-18 to 2022-23, the Ministry did not fully utilise its budget. In 2024-25, the Ministry only utilised 67% of the allocated budget. This may be on account of 2% utilisation of budget under the Control of Pollution scheme. In 2024-25, the scheme's budget was estimated at Rs 859 crore, and the actual expenditure was Rs 16 crore.

Figure 1: Budgetary allocation and utilisation for the Ministry (in Rs crore)



Sources: Demand for Grants, 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

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February 11, 2026

Issues to Consider

Climate Change and Energy Transition

The NITI Aayog (2022), citing a World Bank report noted that rising temperatures and shifting monsoon rainfall patterns, which are a result of climate change may cost India 2.8% of its GDP.[1] This may also lower the living standards of almost half of the country's population by 2050.[1] Adaptation measures in vulnerable sectors like agriculture, fisheries, forestries, water resources and ecosystems are estimated to cost India around USD 206 billion between 2015 and 2030.[1]

The National Action Plan on Climate Change (2008) provides the overarching framework for all climate actions in India.[2] The Plan has eight missions, of which MoEFCC is implementing the National Mission for a Green India.[2] MoEFCC has also implemented the Green Credit Programme which incentivises voluntary environmental actions by organisations through tradable credits for activities like ecosystem restoration, tree plantation and sustainable practices.[3] These credits are obtained under the Green Credit Rules, 2023 which were notified under the EPA, 1986.

India's Climate Factsheet

As per the Assessment of Climate Change over the Indian Region report (2023), by the end of the 21st century, India's average temperature is projected to rise by 4.4°C (relative to 1976–2005 levels) without significant actions.

The frequency of summer heat waves is expected to increase 3-4 times by the end of the century. Summer monsoon rainfall has declined by 6% from 1951 to 2015, while there has been an increase in extreme rainfall events between 1950 and 2015. Monsoon variability is projected to increase, with more intense wet and dry spells expected. The area affected by drought has increased by 1.3% per decade between 1951 and 2016.

The Indian Ocean has warmed by 1°C (1951–2015), which is higher than the global average of 0.7°C.

The Hindu Kush Himalayas region is projected to experience a 5.2°C rise in average temperature and decreased snowfall. Glacier retreat and reduced snowfall have been observed across many areas, except in the Karakoram Himalayas, where winter snowfall has increased.

Source: Assessment of Climate Change over the Indian Region, Ministry of Earth Sciences, 2023.

India's emissions profile

In 2024, India's total green-house gases (GHG) emissions were at 4,371 million tonnes CO_2 equivalent ($mtCO_2eq$) which was 8.2% of world total.[4] Per capita GHG emissions was 3 tonne CO2eq. In 2024, India's total CO_2 emissions were at 3,154 MT (7.96% of world total).[4] India's per capita emissions were at 2.1 tonnes.[5] This excludes the Land Use, Land Use Change and Forestry (LULUCF) sector which acts as a carbon sink.

The International Energy Agency (IEA) reported that in 2024, India was the third largest source of global emissions. [5] However, India has contributed only about 4% of the global cumulative greenhouse gas emissions between 1850 and 2019.[6] Similarly, in 2024, India's CO_2 emissions per capita were 2.1 tonnes, lower than countries such as United States (13.4 tonnes) and China. (8.9 tonnes).[5] (Table 3)

Table 3: Total and per capita CO2 emission of select countries, 2024

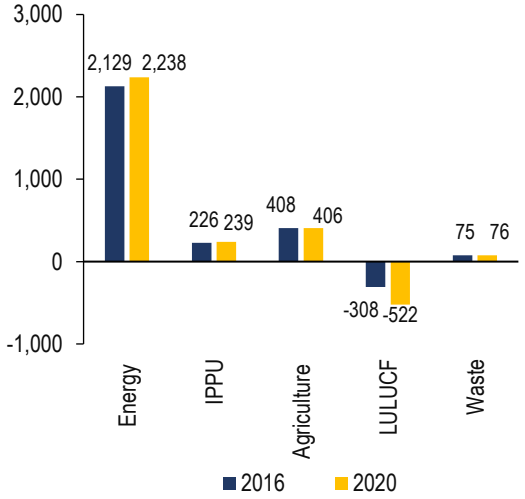
Country	Total CO_2 emissions, in gigatonnes	Per capita CO_2 emission (in tonnes)
United States	4.5	13.4
China	12.6	8.9
India	3.0	2.1
European Union	2.4	5.4
Japan	1.0	7.7

Sources: IEA Global Energy Review, 2025; PRS.

Energy transition

In 2020, the energy sector was the largest contributor to India's CO_2 emissions (Figure 2).[7] In 2024-25, 95% of India's energy supply was sourced from fossil fuels, such as coal, crude oil, and natural gas.[8] Fossil fuels are the largest contributor of greenhouse gas emissions (about 75% globally), leading to global warming.[9,10] Hence, transition to cleaner energy is at the centre of climate change mitigation.[11]

Figure 2: Energy generation contributes the most to emissions (equivalent to MT CO2 emissions)



Note: IPPU is Industrial Processes and Product Use, LULUCF is Land Use, Land Use Change and Forestry.
Sources: India's Biannual Update to UNFCCC, 2024; PRS.

By 2030, India aims to achieve: (i) 500 GW of non-fossil generation capacity, (ii) meeting at least 50% of its electricity requirement from renewable sources.[12] India's updated Nationally Determined Contributions include: (i) reduction of emission intensity of GDP by 45% by 2030 from the 2005

level, and (ii) achieving about 50% cumulative electric power installed capacity from non-fossil fuel-based sources by 2030.[13]

Emission intensity of GDP measures greenhouse gas emissions per unit of economic output (GDP). India reduced the emission intensity of GDP from 2005 levels by 36% in 2020.[7]

As of December 2025, India's renewable capacity stood at 259 GW (51%).[14] Its contribution in generation is around 28% as of October 2025.[14] This comprises sources such as solar, wind, hydro, and waste-to-energy projects. However, solar and wind energy are intermittent in nature and have lower capacity utilisation than sources such as thermal and hydro power.

Table 4: Source-wise installed capacity and share

	Installed Capacity as of November 2025		Generation as % in 2024-25
Source	**In GW**	**% share**	
Coal	220	43%	73%
Solar	136	27%	8%
Hydro	51	10%	8%
Wind	55	11%	5%
Oil & Gas	21	4%	2%
Bio Power	12	2%	1%
Nuclear	9	2%	3%
Small Hydro	5	1%	1%
Total	**509**	**100%**	**100%**

Sources: Central Electricity Authority; India's Climate and Energy Dashboard, Accessed on December 29, 2025; PRS.

The IEA (2025) noted that intense heatwaves in May and June in India triggered a sharp rise in electricity demand for cooling.[15] To meet this surge in demand, higher fossil fuel usage led to an additional 50 Mt of CO_2 emissions, making up one-third of India's total emissions increase in 2024.[15]

A key challenge to energy transition is financial constraints in the renewable energy sector. The Standing Committee on Energy (2023) has noted that there is a huge gap between the required and actual investment for renewable capacity addition.[16] The Ministry of New and Renewable Energy (2025) noted that India requires around Rs 30.5 lakh crore between 2023-24 and 2029-30 to achieve 50 GW of non-fossil fuel-based power capacity.[17] In 2024-25, Rs 2.7 lakh crore was invested in renewable energy sector.[17]

To facilitate credit, the Ministry of New and Renewable Energy has requested banks to treat renewable energy as a separate category in their sectoral credit allocation.[16] The Reserve Bank of India has included small renewable energy projects costing up to Rs 30 crore under priority sector lending.[18] The Standing Committee on Energy (2023) has made several suggestions to enhance investment in the sector. These include: (i) prescribing renewable finance obligations for banks along the line of renewable purchase obligations, and (ii) ensuring alternate financing mechanisms such as Infrastructure Investment Funds.[16]

Climate Change in Centrally Sponsored Schemes

Responses to climate change focus on both mitigation and adaptation. Under mitigation measures, countries can take actions to reduce CO2 emissions to limit the rise in global temperature.[19] For adaptation, they can work to minimise the effects of climate change such as damages from extreme weather events.[20]

NITI Aayog (2022) evaluated 28 umbrella Centrally Sponsored Schemes (CSS) on various themes.[1] Under the assessment for climate change, it reviewed aspects of sustainability, mitigation and adaptation to climate change present in these schemes. Key observations include:

- Of the 104 CSS, only 26% explicitly include climate change or sustainability in their design objectives, even though many schemes affect emissions in practice. Several schemes contribute to mitigation or adaptation by coincidence, not by design (e.g., Ujjwala reducing black carbon, MGNREGS creating carbon sinks). MGNREGS generated an estimated 102 million tonnes of CO_2 sequestration in a 2017–18 through plantations and soil improvement.
- Jobs and skills schemes have little climate integration, despite climate risks to livelihoods and future employment transitions.
- Agriculture is the second-largest source of India's GHG emissions, mainly from enteric fermentation (natural digestive process in ruminant animals) and rice cultivation. Only 40% of agriculture related schemes include climate components, largely focused on adaptation rather than mitigation.
- Heat stress, floods, vector-borne diseases, and mental health impacts due to climate change are rising, but climate risks are not mainstreamed into health planning. Only 60% of health schemes consider climate change, through climate sensitive disease control, heat stress management and natural disaster related health responses.

Urbanisation and climate change

According to the Intergovernmental Panel on Climate Change, cities in India are particularly vulnerable to extreme weather events such as heatwaves, flooding, and cyclones, which are intensifying due to climate change.[21] Moreover, urban areas are increasingly affected by the urban heat island effect, where urban surfaces absorb and retain more heat than natural landscapes.[21] This leads to higher temperatures and increased energy demand for cooling, further intensifying the urban climate crisis.[21] Urbanisation also contributes significantly to warming in Indian cities through reduced vegetation, heat-retaining construction materials, and increased energy demands.[22]

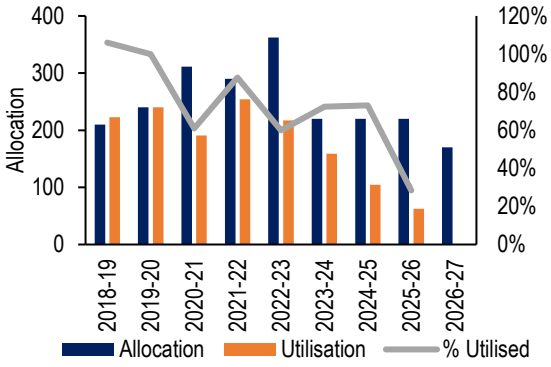
Forests

Green India Mission

The National Mission for a Green India (GIM) is one of the eight Missions outlined under the National Action Plan on Climate Change. It aims to protect, restore, and enhance India's forest cover and tackle climate change by undertaking plantation activities in the forest and non-forest areas in selected degraded, vulnerable landscapes.[23]

In 2026-27, the Mission has been allocated Rs 170 crore, an increase of 63% over the revised estimates of 2025-26. However, the Mission has consistently seen underutilisation of funds since 2020-21 (Figure 3). As per the revised estimates of 2025-26, only 28% of the allocated budget has been utilised.

Figure 3: Fund utilisation under the Green India Mission (in Rs crore)



Sources: Demand for Grants, 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

The Mision aims to increase forest/tree cover on 5 million hectares (mha) of forest/non-forest land and improve the quality of forest cover on another 5 mha area.[23] As of December 2025, only 0.17 mha plantation activities have been undertaken since 2015-16.[23]

NITI Aayog (2022) noted that activities under Green India Mission are meant to address climate change by carbon sequestration from the increased forest/green cover.[1] However, most states were not monitoring the level of carbon sequestered.[1] The issue of climate change is not well covered in the scheme design at present.[1]

India's Forest Cover

The National Forest Policy, 1988 envisions having a minimum of one third of the total land area of the country under forest or tree cover.[24] As per the India State of Forest Report (ISFR) 2023, India has a forest and tree cover of 25.2% (forest cover of 21.8%, and tree cover of 3.4%).[25]

Between 2021 and 2023, forest cover has increased by 156 km^2 and total forest and tree cover has increased by 1,446 km^2.[25]

Table 5: Forest cover as % of geographical area

Category	2013	2017	2023
Forest Cover	21.2	21.5	21.8
Very Dense Forest	2.5	3.0	3.1
Moderately Dense Forest	9.7	9.4	9.4
Open Forest	9.0	9.2	9.3
Tree Cover*	2.8	-	3.4
Scrub	1.3	1.4	1.3
Non-Forest	77.5	77.1	73.5

*Tree cover included in forest cover for 2017. Sources: State of the Forest Reports of the respective years; PRS.

Higher forest density is associated with richer biodiversity, better wildlife habitat, and greater provision of ecosystem services.[25] These include support for forest-dependent livelihoods through non-timber forest produce, fuelwood, and other resources, as well as soil and water conservation benefits.[25] The density of forest cover also affects the level of carbon stock that a forest can hold. According to the India Forest Report (2017), open forests can hold carbon stock of 48 tonne per hectare, while moderately dense forests can hold carbon stock of 135 tonne per hectare.[26] The report had noted that to achieve the Nationally Determined Contribution targets, forests falling under the Open Forest category need to be improved to moderately dense forests.[26] This would increase their capacity for carbon storage.

Forest cover has been a criterion for tax devolution to states by the Finance Commission since the 14th Finance Commission (2015-2020).[27] The 15th Finance Commission assigned certain weightage to dense and moderately dense forests and overall forest area in recommending division of central taxes.[28] The 16th Finance Commission has assigned weightage to both the share of a state in the overall forest area, and its share in the increase in overall forest area between 2015 and 2023.[29]

National Green Tribunal

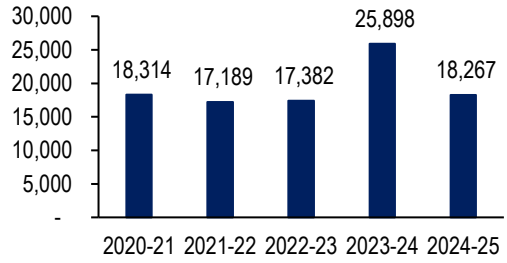
The National Green Tribunal (NGT) adjudicates cases relating to environmental protection, conservation of forests and natural resources, and enforcement of environmental laws, with the objective of providing speedy environmental justice. Currently, there are five benches of the NGT in Delhi, Pune, Bhopal, Chennai and Kolkata.

As of November 2025, data furnished to Parliament shows that the NGT's five benches collectively have over 5,400 pending cases, with significant backlogs at several benches.[30] The principal bench in New Delhi reported 1,939 pending cases, while Pune had 1,933 pending cases.[30] The NGT's statutory composition provides for at least ten judicial members and ten expert members. As of 2025, there were six vacant posts of judicial members and four vacant posts of expert members.[30]

Compensatory Afforestation

The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) collects and distributes funds from organisations that divert forest land for non-forest use, to make up for the loss of forests and ecosystem services.[31] The National CAMPA also approves the Annual Plans of Operation (APOs) for of the various state CAMPAs. Rules for compensatory afforestation dictate that for diversion of forest land, afforestation should be taken up on suitable non-forest land equivalent to the area proposed for diversion.[32] This non-forest land should preferably be close to a reserve or protected forest. If such land is not available, afforestation may be carried out over degraded forest land twice the size of the area being diverted.[32] A High Level Committee (2024) recommended double compensatory afforestation area in revenue land and three times the area in degraded forest land.[33]

Figure 4: Forest land approved for non-forestry use, 2021-2025 (in Hectares)

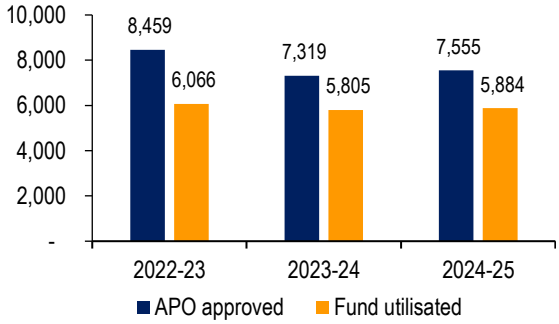


Sources: Unstarred Question No 703, Rajya Sabha, February 5, 2026; PRS.

In Himachal Pradesh, a CAG (2025) audit of 22 compensatory afforestation sites revealed that 83% of afforestation was outside open degraded forests, and 47% occurred in already dense forests.[34] Sites selection lacked scientific basis, and several sites showed encroachments and agricultural activity.[34] MoEFCC (2024) has noted that the sites used for afforestation are mostly degraded in nature, therefore it takes a long time on such lands for trees to evolve into forest like vegetation.[35]

According to an audit by the Supreme Court-appointed Central Empowered Committee (CEC) (2025), the National CAMPA approved Annual Plans of Operation (APOs) of states amounting to Rs 50,264 crore between 2018-19 and 2024-25. Of this, Rs 36,745 crore (73%) was released by states, while Rs 26,276 crore (52%) was utilised by state forest departments till December 2024.[36]

Figure 5: Annual Plan of Operation approved and fund utilised by State Forest Departments (in Rs crore)



Sources: Starred Question No 202, Rajya Sabha, Ministry of Environment, Forest and Climate Change, December 18, 2025; PRS.

The Central Empowered Committee (2025) also observed several institutional and governance gaps in the implementation of CAMPA Act, 2016.[36] It noted that meetings of State CAMPA bodies are not held regularly, and many states lack dedicated CAMPA offices.[36] Where such offices exist, they are often under-staffed and lack adequate professional capacity, and weak monitoring.[36]

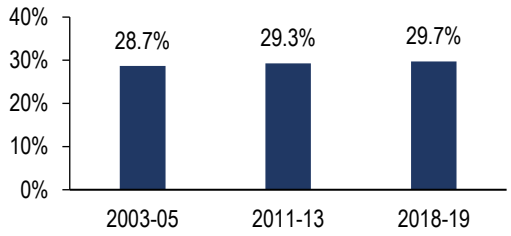
Comptroller and Auditor General (CAG) reports have also noted poor survival rate of afforested plants under the programme across states.[37,38] A CAG audit (2023) in Madhya Pradesh found the survival rate of plants across five sites to range between 6% to 62%.[37] Madhya Pradesh also incurred expenditure of Rs 53 crore on ineligible activities which could not be linked to any of the compensatory afforestation activities.

Desertification and Land Degradation

Land degradation is decline in productivity of land in terms of bio-diversity and economy, leading to loss of ecosystem.[39] The term desertification refers to land degradation occurring in dryland regions. The Land Degradation and Desertification Atlas of India, 2021 estimated that 98 million hectares (mha) area of the country is undergoing land degradation (29.7% of the total geographic area) during 2018-19.[39] A study estimated that the economic losses from land degradation and change of land use in 2014-15 stood at 2.5% of India's GDP or Rs 3,17,739 crore for that year.[40] Land degradation accounted for 82% of those costs.[40]

With a population of over 1.4 billion people, India holds 18% of the world's population on 2.4% of the world's total land.[41] It also holds 15% of the world's livestock population.[41] Given the pressure of sustenance, land resources in India are prone to unsustainable use and inappropriate management practices, deforestation, grazing and other anthropogenic impacts.[41]

Figure 6: Land area under degradation in India



Sources: National Action Plan to Combat Desertification and Land Degradation Through Forestry Interventions, 2023; PRS.

In 2001, India developed its National Action Plan to Combat Desertification, which was revised in 2022.[42] The Plan states the country's commitment to restore 26 mha of degraded land through forestry by 2030.[42]

Land degradation, particularly soil erosion, combined with climate change, is estimated to reduce global crop yields by about 10% by 2050.[43] UNEP (2025) noted that the greatest impacts are expected in India, China and Sub-Saharan Africa, where land degradation could halve crop production, mainly due to the prevalence of monoculture farming systems.[43]

Environmental Clearances

Environmental Clearances (EC) are issued under the Environment Protection Act, 1986, and Environmental Impact Assessment (EIA) Notification, 2006.[44,45] EIA provides that certain projects or activities shall require prior EC from the concerned regulatory authorities.

In March 2017, the Union Ministry of Environment, Forest, and Climate Change issued a notification to provide retrospective clearance for projects or activities that had started work on site, expanded the production beyond the limit of the EC, or changed production mix without obtaining EC. In May 2025, the Supreme Court ruled that the concept of granting retrospective EC under the 2017 notification was illegal.[46] The Court had held that the grant of retrospective EC is against the environmental laws and the EIA Notification. In response to a review petition, in November, 2025, the Supreme Court held that retrospective EC can be granted in exceptional circumstances.[47]

A CAG (2016) audit had noted several issues with ECs. It noted that out of 216 projects, only 14% received Terms of Reference within the prescribed time limits, and only 11% of projects were granted environmental clearance within stipulated timelines.[48] The audit also highlighted irregularities in public consultations, inconsistencies in databases, weak post-clearance monitoring, and absence of a national regulator despite Supreme Court directions.[48]

Wildlife and Biodiversity

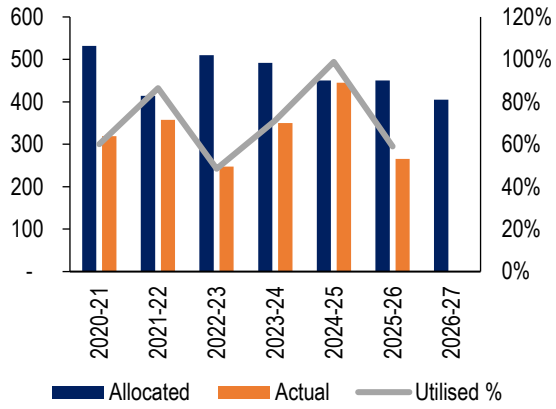
India is one of the world's 17 megadiverse nations, hosting 7-8% of all recorded species.[49] However, rapid urbanisation, deforestation, habitat destruction, pollution, and climate change are a serious threat to India's wildlife and ecosystems.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (2019) noted that India is experiencing a rapid decline in pollinators, soil biodiversity, and freshwater species, which are essential for food security and ecosystem stability.[50] Deforestation and loss of biodiversity are also linked to some zoonotic diseases which can be transmitted from animals to people.[51] Healthy ecosystems can help control diseases by supporting a variety of species, making it harder for a single germ to spread, multiply, or take over.[51]

The Wild Life (Protection) Act, 1972 provides for establishment of sanctuaries, national parks, conservation reserves and community reserves for the protection to wildlife and its habitats. The number of Protected Areas has increased from 745 in 2014 to 1,134 in February 2025.[52]

The Integrated Development of Wildlife Habitats scheme was launched in 1973 for the protection and management of wildlife habitats across India.[53] The scheme has several subcomponents, including Project Tiger and Elephant and Development of Wildlife Habitat.[53] Development of Wildlife Habitat subcomponent further includes a recovery programme for saving 24 critically endangered species, Project Dolphin and Project Lion.[53]

Figure 7: Allocation (Rs crore) and utilisation (%) of budget under Integrated Development of Wildlife Habitats



Sources: Demand for Grants, 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

The central government provides financial support to states and union territories for management of wildlife and their habitats. In 2026-27, Rs 405 crore has been allocated for the Integrated Development of Wildlife Habitats. In 2026-27, Rs 290 crore (72%) has been allocated for Project Tiger and Elephant.

The Development of Wildlife Habitats scheme and Project Tiger and Elephant also provide for payment of ex gratia relief to the victims of human-wildlife conflicts. The Ministry has enhanced the amount of ex-gratia relief in case of death or

permanent incapacitation due to wild animal attacks in December 2023 from five lakh rupees to ten lakh rupees.[54]

Table 6: 72% of allocation under IDWH is towards Project Tiger and Elephant, in Rs crore

Scheme	2024-25	2025-26	2026-27
Development of Wildlife Habitat	155	113	115
Project Tiger and Elephant	290	153	290
Total	**445**	**266**	**405**

Sources: Demand for Grants, 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

The National Biodiversity Authority is a Statutory body that performs regulatory and advisory function for conservation and sustainable use of biological resources. The Authority has been allocated Rs 18 crore in 2026-27.

Coasts and Wetlands

Wetlands and coastal ecosystems in India are critical for biodiversity, climate regulation, and livelihoods. India's total wetland area is estimated at 16 million hectares, which is around 4.9% of the total geographic area of the country.[55]

The Ramsar Convention is an intergovernmental treaty that provides for national action and international cooperation for the conservation and use of wetlands and their resources.[56] India ratified the Convention in 1982. India had 96 Ramsar sites in 2025 as compared to 26 in 2014.[57] Indore and Udaipur became India's first Ramsar Wetland Cities in January 2025.[57] The Amrit Harihar scheme was launched in June 2023 to promote conservation of Ramsar sites.[57]

Between 1990 and 2018, of the 6,907 km of coast line in India, 33% has experienced coastal erosion.[58] Of this, more than 40% erosion is noticed in three states/UTs - West Bengal (60%), Tamil Nadu (42%), Kerala (46%) and Pondicherry (56%).[58] Of the rest, 40% is stable and 27% is undergoing accretion.[58] A 2018 study by the National Centre for Coastal Research noted that the receding coastline will cause loss of land/habitat and the livelihood of fishermen in terms of losing the space for parking boats, mending nets and fishing operations.[59]

The **National Coastal Mission** was launched in 2014 to address the impact of climate change on coastal and marine ecosystems.[60] For 2026-27, the Mission has been allocated Rs 10 crore. The Ministry has noted that allocation has been low due to withdrawal of the World Bank from supporting the Mission. The World Bank withdrew the loan offer because the Government of India did not complete the signing of the Loan Agreement by the final deadline of October 31, 2022.[61] The loan signing deadline had already been extended several times before withdrawal.

Figure 8: Allocation and utilisation under the National Coastal Mission (in Rs crore)

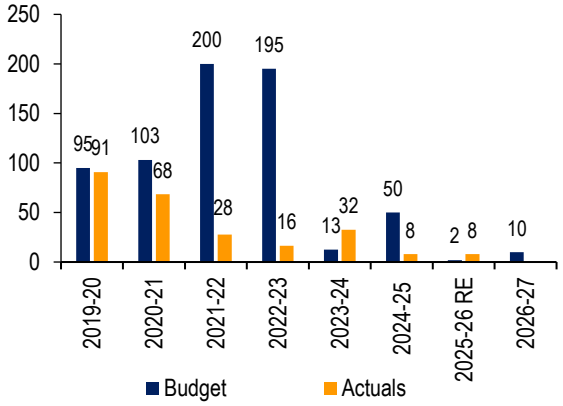


Table 7: Shoreline change between 1990 and 2018 (km)

Coast	1990	2018		
		Erosion	Stable	Accretion
West Coast	3,763	1,113	1,959	691
East Coast	3,145	1,205	775	1,165
Total	**6,907**	**2,318**	**2,734**	**1,855**
% Change		33.6%	39.6%	26.9%

Note: Erosion implies loss above 0.5 meter per year; Stable is a shift below 0.5 meters per year, Accretion means gain over 0.5 meter per year.
Sources: National Centre for Coastal Research, 2022; PRS.

The Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI) was launched in June 2023 to promote and restore mangroves and to enhance the resilience of the coastal ecosystem.[62] The MISHTI program includes plantation and restoration, and the support activities, which include livelihood diversification and promotion of ecotourism through Self-Help Groups. Funding for the scheme is provided through CAMPA funds.

As of 2023, India has 4,992 sq. km of mangrove cover.[63] This is a reduction of 0.15% from 2021, when mangrove cover was 4,999 sq. km. As of 2024-25, 22,560 hectares of mangrove plantation and restoration has been undertaken.[64]

Pollution Control

Central Pollution Control Board

The Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 provide for establishment of the Central Pollution Control Board (CPCB).[65] CPCB advises the central government on pollution control, sets national standards for air and water quality, emissions, and effluents, undertakes research, and monitors compliance with environmental laws at the national level.[66]

As of March 2023, CPCB had 603 sanctioned posts, of which 200 were vacant (33%).[67] CPCB (2020) also noted that the existing network of air and water quality monitoring stations has limited coverage, largely focused on select urban areas and water bodies.[68] Smaller towns, stagnant water bodies, and coastal waters remain inadequately monitored, and gaps in quality assurance affect the reliability of environmental data used for policy and action plans.[68]

The Ministry of Environment, Forest & Climate Change is implementing the Control of Pollution scheme.[69] The scheme has four components: (i) Assistance for Abatement of Pollution to weaker State Pollution Control Boards, (ii) National Clean Air Programme, (iii) Environmental Monitoring Network Programme, and (iv) Research and Outreach Programmes.[69]

In 2026-27, Rs 1,091 crore has been allocated to the Control of Pollution scheme, which is 16% lower than the revised estimates of 2025-26 (Rs 1,300 crore).

Table 8: Allocation and Utilisation under the Control of Pollution scheme (in Rs crore)

Year	Allocated	Utilised	% Utilised
2022-23	460	600	130%
2023-24	756	845	112%
2024-25	859	16	2%
2025-26	854	1,300	152%
2026-27	1,091	-	-

Note: Revised estimates taken as actuals for 2025-26.
Sources: Demand for Grants, 2026-27, Ministry of Environment, Forests and Climate Change; PRS.

The Standing Committee on Science and Technology, Environment, Forests and Climate Change (2025) noted that the utilisation under the Control of Pollution scheme in 2024-25 was extremely low.[69] The Ministry responded that this was due to ongoing revision of the National Clean Air Program, which has now been approved up to 2025-26.[70] The Ministry further provided that the unspent amount from 2024-25 will be spent in 2025-26. In 2025-26, as per the revised figures, the Ministry estimates to spend 52% more than the budget originally allocated to the scheme.

Air pollution

Air pollution is the presence of solid, liquid, or gaseous substances in concentrations harmful to human health and the environment.[71] Common pollutants include Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), and particulate matter (PM) such as dust, soot, and smoke.[71] PM is a mixture of fine solid particles and liquid droplets suspended in air.

Particles smaller than 10 micrometres (PM_{10}) can lodge deep in the lungs and cause respiratory diseases, and $PM_{2.5}$ (less than 2.5 micrometres) is one of the most harmful pollutants.[72] These pollutants are emitted from burning fossil fuels and crop residues, as well as from construction, roads, and industries. According to the World Bank (2024), most of India's population is exposed to unsafe $PM_{2.5}$ levels, contributing to 17 lakh deaths in 2019 and economic losses of USD 36 billion (1.4% of GDP).[73] According to the UNEP (2025), the highest number of annual stillbirths attributable to $PM_{2.5}$ exposure was recorded in India at 2,17,000.[43]

Air pollution crosses administrative boundaries, requiring coordinated regional action. A TERI (2018) study found that 33% of Delhi's PM2.5 originates outside India, highlighting limits of local measures.[74] The World Bank (2024) notes that secondary $PM_{2.5}$ from multiple sectors forms through atmospheric reactions and spreads across cities and states.[73] This may complicate regulation, as authorities cannot act against polluters outside their jurisdiction.

Monitoring air quality

In 2009, the Central Pollution Control Board issued National Ambient Air Quality Standards (NAAQS).[75] These standards state ideal limits for 12 air pollutants in residential and ecologically sensitive areas. The Standing Committee on Environment (2025) noted that NAAQS, last revised in 2009, is under revision and recommended expediting the process.[76] It observed that while WHO updated its air quality guidelines in 2021, these are indicative and non-enforceable, and countries must set standards based on their own geographic and socio-economic contexts.[76]

As of 2025, air quality is monitored in 583 of 7,935 cities and towns through 1,035 manual stations and 562 Continuous Ambient Air Quality Monitoring Stations. Manual stations do not provide real-time data.[77] The National Clean Air Programme plans to increase monitoring stations to 1,500.[78]

Power sector

The power sector is a major source of air pollution in India, with coal accounting for 95% of power-related $PM_{2.5}$ emissions and 80% of NO2 emissions in 2021.[79] Thermal power plants generate about half of India's SO_2 emissions, with industry contributing another third.[79] While coal's share in installed capacity is declining, most electricity generation still depends on coal.

In July 2025, MoEFCC revised the Flue Gas Desulfurization Exemption Policy.[80] The new policy relaxed compliance requirements for installing flue gas desulphurisation systems in thermal power plants.[80] These are pollution control technologies used to remove harmful sulphur dioxide from exhaust gases in power plants.

Transport sector

Road transport contributes about 12% of India's energy-related CO_2 emissions and 20–30% of urban air pollution; in Delhi, vehicles account for 47% of $PM_{2.5}$.[81] Non-exhaust sources such as road dust and tyre and brake wear further add to pollution.[81] The IEA (2024) recommended stricter fuel economy norms and stronger incentives for zero-emission vehicles. It also recommended strengthening EV adoption policies, including extending Faster Adoption and Manufacturing of Electric Vehicles incentives beyond 2024 and maintaining favourable taxation.[81]

The Standing Committee on Environment (2025) noted that India is encouraging ethanol-blended petroleum products which require a cautious approach in implementation.[76] While this may provide a potential reduction in certain regulated pollutants such as Carbon Monoxide, trade-offs include rise in NO_x emissions, and increased evaporative emissions which are precursor to Ozone formation.[76] It observed that India's regulatory standards for evaporative emissions are not adequately stringent.[76]

To reduce vehicular emissions, the Standing Committee (2025) recommended: (i) accelerating transition to cleaner vehicles, including phasing out end-of-life and diesel vehicles, (ii) expanding electric and CNG-based public transport, and (iii) strengthening last-mile connectivity.[76] PM Electric Drive Revolution in Innovative Vehicle Enhancement (E-DRIVE) scheme and PM e-Bus Sewa-Payment Security Mechanism Scheme are being implemented to deploy electric buses.[82,83]

National Clean Air Programme

The National Clean Air Programme (NCAP) was launched by the centre in 2019. It aims to reduce PM_{10} levels by up to 40% by 2025-26 in 130 cities, compared to 2017 levels, or to meet NAAQS. Cities receive central funding to implement City Action Plans. In 2024-25, only 22 cities out of 130 conformed to NAAQS in terms of PM_{10} concentration.[84] 64 cities achieved reduction of 20% and above in PM_{10} levels in 2024-25 with respect to the levels of 2017-18. The Standing Committee on Environment (2023) had observed that though these cities are reporting improvement in air quality, experience of the people differs from the data collected by the agencies.[85] It also suggested making public experience a part of the air quality monitoring framework.[85]

Rs 13,415 crore has been released to the identified cities from 2019-20 till 2025-26 (till December) under NCAP, out of which Rs 10,003 crore has been utilised.[86] Utilisation ranged from 86% in Rajasthan to 17% in Delhi. Punjab (67%) and Haryana (47%) also underutilised funds. See Table 15 in annexure for details.[86]

Air Quality Management in Delhi-NCR

In November 2025, air quality in the NCR remained in the 'severe' and 'severe plus categories for several days, leading to the imposition of emergency restrictions.[87] In 2024, Delhi recorded the highest number of 'severe' AQI days (17) since 2022.[88] Pollution in the region arises from multiple sources, including vehicular and industrial emissions, construction and road dust, waste and biomass burning, and landfill fires.[89] Winter meteorological conditions with low temperatures, weak winds, and temperature inversions, trap pollutants, while episodic events such as stubble burning and firecrackers worsen air quality.[89] Studies indicate that vehicles, fuel combustion, biomass, and waste burning are major contributors to particulate pollution in Delhi.[76]

To address air pollution, the NCR has mechanisms such as the Commission for Air Quality Management (CAQM), the Graded Response Action Plan, and the Air Quality Early Warning System. The CAQM was constituted in 2021 to coordinate actions among NCR areas, plan and execute air pollution control measures in the NCR and prepare plans to reduce stubble burning.[90]

Paddy stubble burning in Punjab, Haryana, and other districts of the National Capital Region also contributes to deteriorating air quality between October and November.[76] Measures to curb stubble burning include satellite monitoring, crop residue management, bio-decomposers, and alternative uses like biomass co-firing. While incidents have declined, the Committee flagged gaps in machinery availability during peak periods, high costs for small farmers, and limitations of satellite-based monitoring.[79]

Water pollution

MoEFCC formulates and administers laws such as the Water (Prevention and Control of Pollution) Act, 1974 and the Environment (Protection) Act, 1986.[91] Further, it prescribes effluent discharge standards, water quality criteria and environmental norms for industries, municipal bodies and other polluters.[91] The Ministry also supports water quality monitoring.[91]

Rivers

The Central Pollution Control Board, with State Pollution Control Boards and Pollution Control Committees, implements the National Water Quality Monitoring Programme to assess river water quality.[92] Two or more polluted locations identified on a river in a continuous sequence are considered as a stretch and identified as Polluted River Stretches. The number of polluted river stretches has declined from 351 in 2017-18 to 296 in 2022 and 2023.[92]

Biochemical Oxygen Demand (BOD) is a key indicator of river water quality and is used to assess the extent of organic pollution in water bodies.[93] Higher BOD levels indicate increased pollution, often associated with untreated sewage and industrial effluents. In 2024, BOD levels exceeding the prescribed limit were recorded at 146 out of 768 water quality monitoring stations

(WQMS) located on 70 rivers.[93] In the pre-monsoon season of 2024, total coliform levels exceeded at 227 WQMS across 101 rivers in 16 states. In 2023, such levels were recorded at 199 stations on 97 rivers.[93]

Table 9: Number of polluted rivers stretches as monitored by CPCB

Monitoring period	Polluted stretches	Polluted rivers
2002-08	150	121
2009-12	302	275
2016-27	351	323
2019 and 2021	311	279
2022 and 2023	296	271

Sources: Polluted River Stretches for Restoration of Water Quality 2025, CPCB; PRS.

Major factors leading to pollution in rivers are: (i) discharge of untreated or partially treated sewage from cities/towns and industrial effluents, (ii) improper solid waste management, (iii) problems in operation and maintenance of sewage/effluent treatment plants, and (iv) lack of dilution and other nonpoint sources of pollution.[94]

Groundwater

As per the National Compilation on Dynamic Ground Water Resources of India, 2025, total annual groundwater recharge in India is assessed at 449 billion cubic meters (BCM), of which 408 BCM is extractable.[95] Annual groundwater extraction in 2025 stood at 247 BCM, a national average stage of extraction of 61%.[95] Out of 6,762 assessment units, 11% are over-exploited, 3% critical, and 11% semi-critical.[95]

The Central Ground Water Board (CGWB) monitors and collects data on occurrence of contaminants in ground water. In 2024, nearly 20% of groundwater samples analysed across the country exceeded the permissible limit for nitrate.[96] Further, 9% of samples recorded fluoride concentrations above the prescribed limit, while arsenic contamination beyond permissible levels was observed in 3.6% of samples.[96] 6.6% of samples exceeded the Bureau of Indian Standards safe limit for Uranium.[96]

Table 10: Percentage of industries complying with environmental standards

Year	2018	2019	2020	2021	2022	2023
Compliant Industries	86%	92%	92%	91%	89%	90%

Sources: Progress on SDGs, MoSPI, 2025; PRS.

High concentrations of fluoride in drinking water are known to cause dental and skeletal fluorosis, while consuming water with high arsenic levels is associated with cancer and skin lesions.[97]

MoEFCC (2025) also noted presence of microplastics in rivers, lakes and coastal zones.[98]

Waste Management

MoEFCC frames and notifies waste management rules under the Environment (Protection) Act, 1986, covering solid waste, plastic waste, e-waste, biomedical waste, hazardous wastes, construction and demolition waste, and battery waste.[91] The Ministry also prescribes standards for segregation, collection, treatment, recycling and disposal of different waste streams, including extended producer responsibility frameworks.[91]

In 2023-24, the total solid waste generated in the country was 1,85,195 tonnes per day (TPD), waste collected was 1,79,479 TPD, waste processed was 1,14,110 TPD and waste landfilled was 39,629 TPD.[99] In 2022-23, there were 379 landfills operational in the country.[100] Of these, 182 landfills were in Karnataka.[100]

The Solid Waste Management Rules 2016 mandate local bodies to investigate all old open dumpsites and existing operational dumpsites for their potential of bio-mining and bio-remediation and wherever feasible, take necessary actions to bio-mine or bio-remediate the site.[101] Out of 25 crore tonnes of legacy waste in 2,478 dumpsites during 2021, a total of 15 crore tonnes of legacy waste (61%) has been remediated.[102]

The Ministry of Housing and Urban Affairs is implementing the Swachh Bharat Mission-Urban (SBMU). to achieve universal sanitation coverage and scientific solid waste management in urban areas. As of 2024-25, 80% of waste generated was processed/ disposed under the mission (Table 11).

Table 11: Waste generated and processed under SBMU, in tonnes per day

Year	Waste generated	Waste processed	% processed
2022-23	1,46,167	1,06,655	73%
2023-24	1,54,093	1,17,868	76%
2024-25	1,61,157	1,29,708	80%

Sources: Starred Question No 82, Rajya Sabha, MoEFCC, December 8, 2025; PRS.

Table 12: Hazardous waste generated and treated annually (2017-18 to 2022-23)

Year	Hazardous waste generated per capita (MT/ per year)	Proportion of hazardous waste treated (%)
2017-18	7.2%	0.5%
2018-19	6.5%	0.6%
2019-20	6.5%	0.6%
2020-21	6.8%	0.6%
2021-22	9%	3.8%
2022-23	9.3%	3.6%

Sources: Progress on SDGs, MoSPI, 2024; PRS.

In 2022-23, about 15.7 MT of hazardous waste was generated, out of which about 8.6 MT (55%) was either recycled or utilised.[91] Of the 8.6 MT, about 2.4 MT was recycled, 2.3 MT was co-processed and about 4 MT of hazardous waste was utilised.[91]

Under the E-Waste (Management) Rules, 2022, producers of electrical and electronic equipment (EEE) are obligated for environmentally sound management of e-waste.[103] Producers are required to meet annual recycling targets, linked to the quantity of EEE placed on the market, by purchasing EPR certificates from registered recyclers for the quantity of e-waste recycled.[103] As of March 2025, there are 322 authorised e-waste recyclers with processing capacity of 22 lakh tonnes.[104]

Table 13: E-waste generated and recycled (in tonnes per annum)

Year	Generation	Recycled	% recycled
2020-21	13,46,496	3,54,541	26%
2021-22	16,01,155	5,27,132	33%
2022-23	16,09,117	5,39,256	34%
2023-24	12,54,287	7,78,205	62%
2024-25	13,97,956	11,59,228	83%

Sources: Unstarred Question No 525, Rajya Sabha, MoEFCC, December 4, 2025; PRS.

To reduce pollution caused by littered and unmanaged plastic waste, since 2022, the MoEFCC has prohibited certain single use plastic items which have low utility and high littering potential.[105] Producers of plastic packaging are also mandated to recycle plastic packaging waste, use of recycled content in plastic packaging and reuse of rigid plastic packaging. Since 2022, plastic packaging waste worth 178 lakh tonnes have been recycled.[106]

MoEFCC also provides guidelines on utilisation of ash by coal or lignite based Thermal Power Plants.[107] Fly ash generated by Thermal Power Plants (TPPs) is mainly utilised in cement plants, brick manufacturing units, road and flyover embankments, reclamation of low-lying areas and back filling of abandoned mines.[91] Utilisation of fly ash has increased from 59.8% in 2015-16 to 94.8% in 2023-24.[91]

Table 14: Plastic waste generated in country, in tonnes per annum

Year	Plastic waste generated
2020-21	41,26,808
2021-22	39,01,802
2022-23	41,36,188
2023-24	26,81,840
2024-25	17,63,291

Sources: Unstarred Question No 525, Rajya Sabha, MoEFCC, December 4, 2025; PRS.

Annexure

Table 15: Fund allocation and utilisation under the National Clean Air Programme between 2019-20 and 2025-26 (as of December 15, 2025, amounts in Rs crore)

State	Allocation	Released	Utilisation	Utilisation as % of Released Funds
Andhra Pradesh	735	407	216	53%
Assam	157	109	64	59%
Bihar	870	380	292	77%
Chandigarh	55	43	31	72%
Chhattisgarh	428	303	201	66%
Delhi	103	81	14	17%
Gujarat	1,533	1,283	1,065	83%
Haryana	182	107	50	47%
Himachal Pradesh	29	23	17	74%
Jammu & Kashmir	278	188	59	31%
Jharkhand	604	279	185	66%
Karnataka	1,211	626	472	75%
Madhya Pradesh	1,235	835	659	79%
Maharashtra	3,334	1,795	1,440	80%
Meghalaya	12	12	6	53%
Nagaland	31	31	18	59%
Odisha	196	108	77	72%
Punjab	543	352	235	67%
Rajasthan	1,151	687	589	86%
Tamil Nadu	904	655	550	84%
Telangana	906	740	530	72%
Uttar Pradesh	3,799	2,941	2,246	76%
Uttarakhand	148	103	65	63%
West Bengal	1,685	1,327	921	69%
Total	**20,129**	**13,415**	**10,003**	**75%**

Source: Unstarred Question No. 2339, Lok Sabha, Ministry of Environment, Forest, and Climate Change, December 15, 2025; PRS.

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