

Demand for Grants 2021-22 Analysis

Environment, Forests and Climate Change

The Ministry of Environment, Forests and Climate Change is responsible for the planning, promotion, co-ordination of, and overseeing the implementation of India’s environmental and forestry policies and programmes. This note presents the budgetary allocations to the Ministry for 2021-22, and analyses various issues related to the sector.

As 2020-21 had extra-ordinary expenditure on account of Covid-19, we have used annualised increase (CAGR) over the 2019-20 figures for comparing the 2021-22 budget estimates.

Budget speech highlights 2021-22¹

Key highlights in the budget regarding environment include:

- Rs 2,217 crore will be allocated for 42 urban centres with population more than one million for tackling the problem of air pollution.
- A voluntary scrapping policy will be introduced to phase out old and unfit vehicles. Vehicles will undergo a fitness test after: (i) 20 years (personal vehicles), and (ii) 15 years (commercial vehicles). This seeks to encourage environment friendly vehicles and fuel efficiency and reduce vehicular pollution and expense on oil import.
- Urban Swachh Bharat Mission 2.0 will be implemented with a capital outlay of Rs 1.4 lakh crores over five years (2021-26). The objectives of the Mission include: (i) complete faecal sludge management, (ii) reduction in single use plastic, (iii) source segregation of garbage, and (iv) reduction in air pollution.

Allocation in Union Budget 2021-22

In 2021-22, the Ministry of Environment, Forests and Climate Change has been allocated Rs 2,870 crore, which is an annual increase of 6% over the actual expenditure in 2019-20. The allocation to the Ministry is 0.1% of the estimated expenditure of the union government for 2021-22.

Table 1: Budgetary allocation to the Ministry 2021-22 (in Rs crore)

	Actuals 19-20	BE 20-21	RE 20-21	BE 21-22	Annualised change (Actuals 19-20 to BE 21-22)
Total	2,538	3,100	2,015	2,870	6%

Note: BE is budget estimate and RE is revised estimate.
Sources: Demands for Grants 2021-22; PRS.

In 2021- 22, 27% of the Ministry’s allocation (Rs 766 crore) is estimated to be on centrally sponsored schemes on environment, forests and wildlife such

as National Mission for Green India and Integrated Development of Wildlife Habitats. 16% of the allocation of the Ministry is towards pollution control and about 5% is towards environment protection, management, and sustainable development. Establishment expenditure, i.e., spending on the secretariat and offices accounts for 22% of the total expenditure.

Table 2 represents the budgetary allocation for major heads under the Ministry.

Table 2: Major heads of expenditure under the Ministry (in Rs crore)

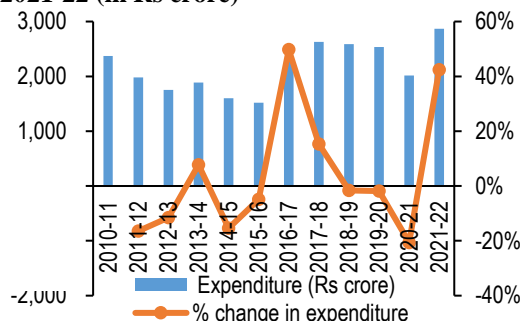
Heads	2019-20 Actuals	2020-21 RE	2021-22 BE	Annualised change (Actuals 19-20 to BE 2021-22)
Environment, Forestry and Wildlife	768	556	766	-0.2%
Establishment Expenditure of the Centre	521	477	634	10%
Control of Pollution	409	284	470	7%
Autonomous Bodies	326	340	289	-3%
National Coastal Mission	91	68	200	48%
Statutory and Regulatory Bodies	135	108	161	9%
Environment Protection, Management and Sustainable Development	118	108	136	7%
Decision support System for Environmental Awareness, Policy, Planning and Outcome Evaluation	109	84	117	4%
Environmental Knowledge and Capacity Building (such as Eco-Task Force)	86	40	70	-10%
Total	2,538	2,015	2,870	6%

Note: BE is budget estimate and RE is revised estimate; Establishment Expenditure of the Centre includes Secretariat and subordinate offices; Autonomous Bodies include Indian Council of Forestry Research and Education, and Indian Institute of Forest Management; Environment Protection, Management and Sustainable Development includes Climate Change Action Plan, National Adaptation Fund, and National Mission on Himalayan Studies; Decision support System for Environmental Awareness, Policy, Planning, and Outcome Evaluation include environmental education, awareness and training, and environment information systems.
Sources: Demands for Grants 2021-22; PRS.

Overview of the financial allocation

Figure 1 shows the trend of expenditure of the Ministry between 2010-11 and 2021-22. The expenditure of the Ministry has seen an annual average growth of 2% during this period.

Figure 1: Expenditure between 2010-11 and 2021-22 (in Rs crore)



Note: Values for 2020-21 and 2021-22 are Revised Estimates and Budget Estimates respectively.

Sources: Union Budgets 2010-11 to 2021-22; PRS.

Table 3 shows the utilisation trend of the funds allocated to the Ministry between 2010-11 and 2020-21.

Table 3: Trend of fund utilisation by the Ministry (in Rs crore)

Year	BE	Actuals	Over/Under Utilisation
2010-11	2,351	2,372	1%
2011-12	2,492	1,982	-20%
2012-13	2,629	1,753	-33%
2013-14	2,630	1,890	-28%
2014-15	2,256	1,599	-29%
2015-16	1,682	1,521	-10%
2016-17	2,250	2,278	1%
2017-18	2,675	2,627	-2%
2018-19	2,675	2,586	-3%
2019-20	2,955	2,538	-14%
2020-21	3,100	2,015*	-35%

Note: BE – Budget Estimate; *Revised Estimate; (+) indicates over-utilisation; (-) indicates under-utilisation.

Sources: Union Budgets from 2010-11 to 2021-22; PRS.

Between 2010-11 and 2020-21, on average the actual expenditure of the Ministry has been less than the budget estimates for the year. However, the Standing Committee on Science and Technology, Environment, Forests, and Climate Change (2020) stated that the utilisation of funds by the Ministry in 2017-18 and 2018-19 is satisfactory.²

In 2020-21, the Ministry was allocated Rs 3,100 crore, which decreased by Rs 1,085 crore (35%) at the revised estimates stage. This includes reduction in funds towards: (i) Environment, Forestry and Wildlife (reduced by Rs 370 crore), (ii) Establishment Expenditure of the Centre (reduced by Rs 194 crore), and (iii) Control of Pollution (reduced by Rs 176 crore), among others. This may be due to the impact of the COVID-19

pandemic, and a change in spending priorities of the government over the year.

Key issues for consideration

Some of the key issues in the environment sector include: (i) global warming, (ii) air pollution, and (iii) declining forest cover.^{2,3,4} In this section, we discuss some of these issues.

Climate Change

Climate change refers to a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere.⁵ Studies indicate that the amount of greenhouse gases including carbon dioxide, methane, and nitrous oxide in the atmosphere have increased rapidly over the last few centuries as a result of human activities.^{6,7} The increased concentration of greenhouse gases in the atmosphere has led to a rise in global temperatures leading to other changes in global climate, such as erratic rains, floods, and cyclones.^{6,7}

According to the Intergovernmental Panel on Climate Change (IPCC), the average global temperature is estimated to have increased by 0.85°Celsius (°C) between 1880 and 2012.⁷ At the end of the 21st century, the increase in global temperature is likely to exceed 1.5°C as compared to pre-industrial levels (1850 to 1900).⁷ This could lead to a reduction of the snow cover, increase in heat waves, extreme precipitation, intensification of tropical cyclones and increase in sea levels.

Current Emission Levels

The total carbon dioxide (CO₂) emissions across the world in 2018 were 33,513 million tonnes. Table 4 compares India's CO₂ emissions from fuel combustion to that in other countries.

Table 4: Global comparison of CO₂ emissions (2018)

Country	CO ₂ emissions from fuel combustion (million tonnes)	% of world emissions	Per capita emissions (tonnes CO ₂)
China	9,571	29%	6.8
US	4,921	15%	15.0
EU	3,151	9%	6.1
India	2,308	7%	1.6
Russia	1,587	5%	1.7
Japan	1,081	3%	8.5
World	33,513		4.4

Note: EU is European Union; US is United States if America.

Sources: CO₂ Emissions from Fuel Combustion 2018, International Energy Agency (2020); PRS.

China was the largest contributor to the world's CO₂ emissions (29%). On a per capita basis, the United States had the highest per capita emissions. India amounts for 7% of the total global CO₂ emissions, and is well below the average global emissions per capita.⁸

The 15th Finance Commission observed India's dependence on thermal energy and the consequent effect on emission levels.⁹ It noted that about 60% of the country's installed capacity is thermal based (coal based thermal power accounting for the largest share). Further, it noted that while the share of renewables in total power generation has increased from 6% in 2014-15 to 10% in 2018-19, substantial investment is required in renewable energy.⁹ It recommended that a comprehensive energy policy should be framed. It also noted that the prices of coal, natural gas, and kerosene in India are below environmentally efficient levels (which can partly be due to subsidies given for LPG and kerosene to select consumers). It recommended bringing the prices of these fuels closer to environmentally efficient levels, while providing targeted assistance to potentially affected vulnerable households.⁹

The projected changes in climate change pose a major threat for India in particular, given that the national economy is closely tied to climate sensitive sectors such as agriculture and forestry.¹⁰

The National Action Plan on Climate Change (NAPCC) was launched in June 2008 to deal with issues related to climate change.¹¹ The NAPCC has eight missions: (i) the National Solar Mission, (ii) the National Mission on Enhanced Energy Efficiency, (iii) the National Water Mission, (iv) the National Mission for Green India, (v) National Mission on Sustainable Habitat, (vi) National Mission for Sustainable Agriculture, (vii) National Mission for Sustaining the Himalayan Ecosystem, and (viii) National Mission on Strategic Knowledge for Climate Change.

NITI Aayog in its report on Strategy for New India (2018) recommended that all eight national missions under the NAPCC should be revised in light of new scientific information and technological advances.¹² Further, new national missions on wind energy, waste-to-energy, and coastal areas should be developed.¹² In addition, NITI Aayog in its report recommended the following to maintain a clean, green, and healthy environment:¹²

- **Changes to regulatory framework:** Stringent civil penalties should be introduced to strengthen enforcement of environment-related Acts. Further, Rules related to waste management should be revised and strictly implemented. These include: (i) Plastic Waste (Management and Handling) Rules, (ii) Bio-Medical Waste (Management and Handling) Rules, (iii) E-Waste (Management) Rules, and (iv) Hazardous and Construction & Demolition Waste Management Rules.
- **Funds:** National Adaptation Fund for Climate Change and other global funds for

strengthening resilience against climate change in sectors such as agriculture, forestry, and infrastructure should be utilised. Further, scientific and analytical capacity for climate change related assessments should be strengthened.

The Estimates Committee (2018) had reviewed the implementation of the NAPCC and made specific recommendations on some of the Missions. These recommendations include:¹¹

- **National Mission on Sustainable Habitat:** The Committee observed that the emphasis of the Mission is limited to urban habitats only and does not take into account the requirements of the rural habitats. It recommended that the Mission introduce a comprehensive and integrated plan encompassing the needs of both rural as well as urban habitats.
- **National Mission for Sustainable Agriculture:** The Committee noted that although the Mission focuses on different aspects of agriculture, it does not include income security of farmers. It observed that crop insurance schemes and the MSP scheme have not made farming remunerative. It recommended the government to consider these elements of the Mission.

In 2015, the Paris Agreement was adopted by the Conference of Parties with the consensus of 197 parties to the convention (including India).¹³ The Paris Agreement aims to reduce greenhouse gas emissions globally and limit the increase in the global average temperature to a level between 1.5°C to 2°C above pre-industrial levels.

India's Nationally Determined Contributions (NDC)

India submitted its Nationally Determined Contributions to the United Nations Framework Convention on Climate Change on October 2, 2015. India's commitments include achieving the following targets by 2030:

- Reducing greenhouse gas emissions per unit of GDP by 33-35% from 2005 levels.
- Achieving 40% of installed electric power capacity from non-fuel-based energy sources (such as solar, wind, hydropower) with help of transfer of technology and low-cost international finance.
- Increasing forest and tree cover by creating additional carbon storage and absorption capacity for 2.5-3 billion tonnes of carbon dioxide.
- Enhancing investments in development programmes in sectors vulnerable to climate change, including agriculture, water resources, health, disaster management, and Himalayan and coastal regions.
- Mobilising funds domestically and from developed countries to implement mitigation and adaptation actions.

In December 2020, the Ministry of Environment, Forest and Climate Change constituted a high-level inter-ministerial Apex Committee for Implementation of Paris agreement.¹⁴ The Committee will be the national regulatory authority for carbon markets in India. Its functions include: (i) developing policies and programmes to make India's domestic climate change compliant to international obligations, (ii) coordinating communications of nationally determined contributions, and (iii) defining responsibilities of concerned ministries for achieving India's nationally determined contribution goals.¹⁴

Climate Change Financing

The Economic Survey (2020-21) observed that India is relying on domestic resources to implement adaptation and mitigation action for climate change.¹⁵ It noted that the financing considerations will remain critical as the country had increased its targets substantially. Preliminary estimates provided by the NDC indicate that India's climate change actions till 2030 will require financial resource of USD 2.5 trillion (at 2014-15 prices).¹⁵ It recommended a clearer assessment of the financial requirement for implementing the NDC for appropriate allocation of resources. Further, the possible sources for meeting these requirements should also be devised.¹⁵ The Survey noted that availability of adequate financial resources for implementing the NDC goals is a major challenge.¹⁵ It recommended that additional financial resources and technological support to the developing countries (as was committed by the developed countries under the Paris Agreement) should be implemented.¹⁵

Environment Impact Assessment and Clearance

Environment Impact Assessment is a planning tool to integrate environmental concerns into the developmental process from the initial stage of planning.¹⁶ The Ministry of Environment, Forests and Climate Change has made Environmental Clearance (EC) for certain development projects mandatory such as certain building, construction, and area development projects.¹⁶

The Comptroller and Auditor General of India (CAG) (2016) noted certain issues with the environmental clearance process. Its observations and recommendations include:¹⁶

- **Delay in process:** The CAG noted a delay in the process of EC (including grant of Terms of Reference, public consultation, and grant of EC by the Ministry). For example, (i) out of 216 projects examined, the Terms of Reference was granted within the prescribed time limit (60 days) to only 14% of the projects, and (ii) the EC was granted within the prescribed time limit (105 days) in only 11% of the cases. It recommended the Ministry to increase

transparency in the grant of EC, streamline the processes, and adhere to the timelines given under the EIA Notification.

Draft Environment Impact Assessment Notification, 2020

The Draft Notification seeks to replace the EIA Notification, 2006. It proposes certain conditions and thresholds on undertaking new infrastructure projects, and on expansion or modernisation of existing infrastructure projects. These projects include dams, mines, airports, and highways.

The draft notification was released by the Ministry of Environment, Forest and Climate Change in March, 2020.¹⁷ Initially, the Ministry invited comments on the Notification by June 10, 2020, which was later extended to June 30, 2020 in wake of the COVID-19 pandemic.¹⁸ Further, Delhi High Court and Karnataka High Court extended the deadline to August 11, 2020 considering limited advertisement of the notification in regional languages.^{19,20} Currently, the notification has not been issued as the consideration of suggestions is ongoing.²¹

Key features of the draft EIA notification, 2020 include:

Validity of prior-environment clearance increased: The draft notification proposes to increase the validity of prior environment clearance and prior environment permission for all projects. For example, it seeks to increase the validity for: (i) mining projects from 30 years to 50 years, (ii) river valley projects from 10 years to 15 years, and (iii) all other projects from five years to 10 years.

Exemptions from public consultation: The 2006 notification exempts certain infrastructure projects from conducting public consultation. These include industrial parks and complexes, special economic zones, irrigation projects, and construction projects, among others. The draft notification adds several other projects under the list of projects exempted from public consultation. These include: (i) development projects in border areas, (ii) highways, expressways, (iii) metallurgical industries, and (iv) pesticide industries.²² Further, the draft notification makes certain changes to the public consultation timeline, compared to the 2006 notification.

Table 5: Comparison between public consultation timeline in EIA notification, 2006 and draft EIA notification, 2020

Activity	Allotted time as per 2006 notification	Allotted time as per 2020 notification
Finalisation of date, time, and venue for public hearing	7 days from date of receipt of application	10 days from date of receipt of application
Advertising the details of public hearing	No mention	5 days from getting consent of the concerned Pollution Board
Minimum notice period to public for submitting responses	30 days	20 days
Sending public hearing proceedings to the regulatory authority	8 days	5 days
Total	At least 45 days	Up to 40 days

Source: EIA Notification, 2006; Draft EIA Notification, 2020; PRS.

- **Cumulative impact studies:** The CAG noted that such studies before preparing the Environment Impact Assessment reports was not a mandatory requirement. Due to this, the impact of a number of projects was not known.
- **National Regulator:** It noted that the Ministry has not appointed a national level regulator to carry out an independent, objective, and transparent appraisal and approval for ECs of projects and to monitor the implementation of the conditions laid down under ECs.
- **Uniformity in terms and conditions:** It noted that there was non-uniformity in the terms and conditions of the EC for similar kind of projects. It recommended the Ministry to make conditions of ECs compatible with the nature and type of project to avoid non-uniformity for similar projects.
- **Compliance to Conditions of Environment Clearance:** The CAG noted non-compliance in the 216 sampled projects (ranging from 4% to 56%), in respect of 13 general Environmental Clearance conditions. It recommended the Ministry to grant fresh EC only after verifying the compliance to the earlier EC conditions. Further, it recommended the Ministry to mandate certain other conditions for an EC, including installation of monitoring stations and frequency of monitoring of various environment parameters for air, surface water, ground water, and noise pollution.

Air Pollution

Air pollution is the presence of any air pollutant in the atmosphere.²³ An air pollutant is any solid, liquid, or gaseous substance in the atmosphere in such concentration which may be injurious to human beings, other living creatures, or property.

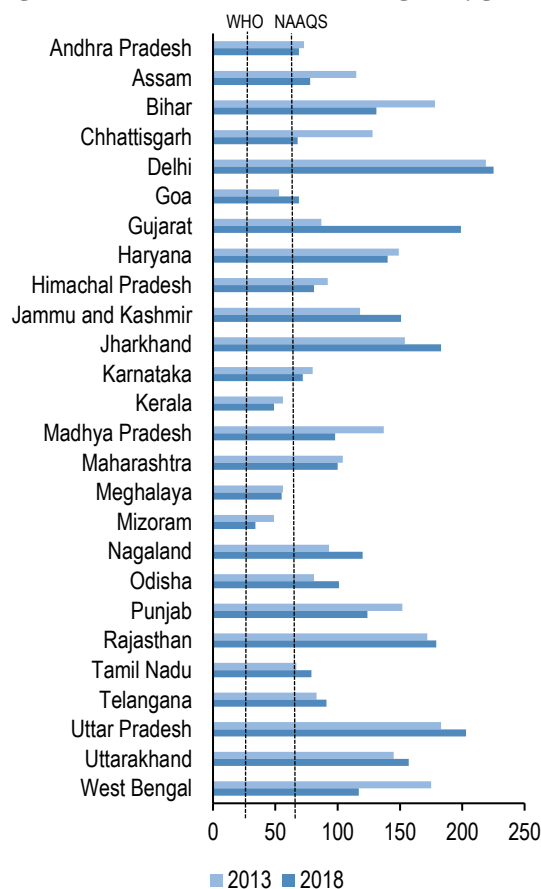
Among the risk factors of diseases in India, air pollution ranks the second highest (after malnutrition), accounting for 10% of the disease burden, and thus, is one of the leading causes for premature death and disabilities.²⁴ According to estimates published by the India Disease Burden Initiative, in 2017, 12.4 lakh deaths, i.e., 12.5% of the deaths in India, were attributable to air pollution.²⁵

The Central Pollution Control Board (CPCB) notified the National Ambient Air Quality Standards (NAAQS) in 2009.²⁶ The programme enables CPCB to identify non-attainment cities, i.e., cities that do not comply with the NAAQS. It identified 102 non-attainment cities where the ambient air quality crossed the prescribed standards continuously during the period 2011-15.²⁷

Figure 2 compares the annual average PM₁₀ levels in different states during 2013 and 2018. It also highlights the WHO standards (20 µg/m³) and the

NAAQS (60 µg/m³) for the pollutant. As of 2018, states with comparatively higher PM₁₀ levels include: (i) Delhi (225 µg/m³), (ii) Uttar Pradesh (203 µg/m³), and (iii) Gujarat (199 µg/m³), among others.

Figure 2: PM₁₀ levels (annual average, in µg/m³)



Note: Data for Andhra Pradesh, Bihar and Telangana for 2014. Sources: CPCB; PRS.

National Clean Air Programme (NCAP): The Ministry of Environment, Forest and Climate Change launched the NCAP in January 2019.²⁸ It receives funding under the budget head Control of Pollution. The programme sets a national level target of 20% to 30% reduction of PM_{2.5} and PM₁₀ concentration levels by 2024, with 2017 as base for concentration levels.²⁸ City specific action plans are to be formulated for the 102 non-attainment cities identified by CPCB.²⁷ NCAP aims to: (i) prepare comprehensive mitigation actions for prevention, control and abatement of air pollution, and (ii) augment the air quality monitoring network and strengthen awareness activities.

Financing for air pollution

In 2021-22, Control of Pollution has been allocated Rs 470 crore, a 16% annual increase over the actual expenditure in 2019-20. In 2020-21, the allocation for Control of Pollution was reduced by 30% (from

Rs 660 to Rs 460 crore) at the revised estimates stage.

The Standing Committee on Science and Technology, Environment, Forests, and Climate Change (2020) noted that the NCAP is a programme of utmost importance in the present-day context and controlling air pollution must be given the topmost priority.² It recommended that the Ministry must be provided the requisite allocation as sought by it with respect to Control of Pollution at the revised stage.²

In the 2020-21 Union Budget Speech, it was announced that Rs 4,400 crore will be allocated towards clean air for large cities (population more than one million) through the Ministry of Housing and Urban Affairs.² In 2021-22, it was announced that Rs 2,217 crore will be allocated for 42 urban centres having population more than one million.¹ However, no such allocation has been specified in this Ministry's Demand for Grants in either years.

The Standing Committee on Science and Technology, Environment, Forests, and Climate Change (2020) noted that the announced allocation in the Budget Speech (Rs 4,400 crore) for clean air for large cities in 2020-21 through the Ministry of Housing and Urban Affairs was higher than the entire budget allocation for the Ministry of Environment, Forests, and Climate Change (Rs 3,100 crore) for the year.²

The Ministry of Environment, Forests, and Climate Change has identified 102 non-attainment cities for utilising this fund under the NCAP. These are cities which do not meet NAAQS for a period of five years.² The Committee noted that there are 46 cities (with population more than one million), which may be kept out of the non-attainment category.² This will help the Ministry of Environment, Forests, and Climate Change to reduce the shortfall of funds for the schemes of pollution control.

The 15th Finance Commission recommended the Ministry of Housing and Urban Affairs be made the nodal ministry for grants to cities with population more than one million to take steps to check air pollution.⁹ The Ministry of Environment, Forests and Climate Change may be given a separate grant for installation of systems to monitor air quality.⁹

Air Pollution in NCR

Since the past few years, the National Capital Region (NCR) continues to see particulate matter levels reach the severe category at several locations, especially during the winter season. The CPCB identified the season as critical due to the meteorological conditions, i.e., lower mixing height, higher humidity, fall of ambient air temperature coupled with lower temperature difference between maximum and minimum, and

low wind speed.²⁹ Further, the burning of crop residue by farmers in the NCR and adjoining areas is also one of the key reasons for pollution in the region.

Supreme Court's directions for pollution control in NCR

On October 18, 2019, the Environment Pollution (Prevention and Control) Authority (EPCA) (established for the prevention and abatement of environmental pollution in NCR) submitted a report to the Supreme Court on the situation of pollution in NCR and sought urgent directions to improve enforcement of pollution control measures. On November 4 and 6, 2019, the Court gave various directions to the governments of Delhi, Punjab, Haryana, and Uttar Pradesh. Some of these are:^{30,31}

- Chief secretaries, district collectors, and police officers of concerned areas of Punjab, Haryana, and Uttar Pradesh must ensure cessation of stubble burning.
- No demolition, construction activities and garbage burning should take place in Delhi and NCR region.
- Delhi government and concerned municipal corporations should remove open garbage and waste, and ensure no open dumping takes place.
- Ensure that coal-based industries are not operating.
- Pollution control boards of Punjab, Haryana, and Uttar Pradesh and Delhi government must ensure that polluting activities against norms are stopped.

Ordinance to set up a commission for air quality management in NCR

The Commission for Air Quality Management in National Capital Region and Adjoining Areas Ordinance, 2020 was promulgated in October 2020.³² The Ordinance establishes a Commission for better co-ordination, research, identification, and resolution of problems related to air quality in the NCR and adjoining areas. Adjoining areas refers to areas in Haryana, Punjab, Rajasthan, and Uttar Pradesh where any source of pollution may cause adverse impact on air quality in the NCR. The key provisions of the Ordinance include:

- **Functions:** Functions of the Commission include: (i) coordinating actions taken under the Ordinance by the concerned state governments (Delhi, Haryana, Punjab, Rajasthan, and Uttar Pradesh), (ii) planning and executing plans to prevent and control air pollution in the region, and (iii) preparing various action plans such as increasing plantation and addressing stubble burning.
- **Penalties:** Non-compliance with or violation of the Ordinance, and orders and directions of the Commission is punishable with imprisonment of up to five years or fine of up to one crore rupees or both. All appeals against the orders of the Commission will be heard by the National Green Tribunal.

Other measures being implemented by the Ministry to reduce air pollution include:³³

- introduction of cleaner/alternate fuels, such as gaseous fuels (CNG and LPG) and fuels blended with ethanol;
- shifting from BS-IV to BS-VI fuel standards by April 2020 for the entire country;
- promotion of public transport and improvements in roads, and building of more bridges to ease congestion on roads;
- revision of emission standards for industrial sectors from time to time;
- banning of burning of biomass;
- deployment of increased number of mechanised road sweeping machines; and
- development of a mechanism for redressal of public complaints regarding air pollution issues in Delhi and NCR, among others.

NITI Aayog in its report on Strategy for New India (2018) noted certain challenges to reduce the problem of air pollution, including:¹² (i) convincing farmers to discontinue the practice of burning crop residue by providing alternative methods, (ii) lack of awareness of the ill effects of pollution, thereby making it difficult to bring about behavioural change in people, and (iii) ineffective implementation of ‘polluters should pay for the pollution’ principle (costs of pollution be borne by those who cause it).

It recommended the following:¹²

- **Funds:** A “Clean Air Impact Fund” should be created to provide viability gap funding for long-term projects aimed at reducing air pollution (such as bio-power or bio-ethanol projects).
- **Reward and monitoring at the local level:** A reward scheme for village panchayats with zero burning may be instituted, and a mechanism to monitor farm fires should be devised.
- **Industry Emissions:** Emission and effluent standards for industries should be revised and effectively implemented. Further, a task force should be set up to study and implement measures to control pollution from brick kilns.

Forestry

In India, forests are considered as a part of the natural and cultural heritage. They provide variety of ecosystem services including: (i) absorption of greenhouse gases, (ii) prevention of soil erosion, and (ii) habitat to wildlife. One of the critical challenges faced by forests in the country is degradation of forest cover.³⁴

Green India Mission

Green India Mission (erstwhile National Afforestation Programme) was launched in February 2014. Its objectives include: (i) increasing forest cover by up to 5 million hectare and improving quality of forest cover on additional 5 million hectare of land, (ii) enhancing eco-system services such as capturing and storing atmospheric carbon to reduce global warming, and (iii) increasing forest-based livelihood income of about 3 million households.³

NITI Aayog, in its report on Strategy for New India (2018), identified increasing the forest cover to 33.3% of the geographical area between 2021-23 as one of the key objectives for a clean, and healthy environment in India.¹² Between 2017 and 2019, the forest cover across India increased by 0.6% (0.4 million hectares).³⁵ As of 2019, total forest cover in India accounts for 22% of the total geographical area (71 million hectare out of 329 million hectare).³⁶ The states with comparatively higher forest cover as share of their geographical area include: (i) Lakshadweep (90%), (ii) Mizoram (85%), (iii) Andaman and Nicobar Islands (82%), (iv) Meghalaya (76%), and (v) Manipur (75%), among others.⁴

Note that, the 14th Finance Commission assigned 7.5% weightage to “forest cover” in its calculation of states’ share in the central taxes.³⁷ The 15th Finance Commission (2020) replaced this by the a weightage of 10% to “forest and ecology”.³⁸ This was done to reward states for the ecological services from the forest cover, and to compensate them for constraints arising from the dense forests in the state.³⁸

NITI Aayog recommended promoting afforestation through peoples’ participation and the involvement of the private sector, with priority to restoration of degraded forests.¹² Further, it recommended that the public land along railway tracks, highways, and canals should be used for tree plantation.¹²

The Standing Committee on Science and Technology, Environment, Forests, and Climate Change (2018) had noted that despite the overall increase in the forest cover in India, some of the North-Eastern states observed a decline in the forest cover in 2017.³ These states include Manipur, Arunachal Pradesh, and Mizoram.^{3,4}

The Standing Committee on Science & Technology, Environment & Forests on the ‘Status of Forests in India’ (2019) also expressed concerns about the decline in the forest cover in the North-Eastern States, which constitute 65.34% of their geographical area in comparison to the national forest cover of 21.54%.³⁴ It recommended that the concerned state governments and the Ministry of Environment, Forests and Climate Change must take all necessary steps to ensure that the decline in

forest cover in these states is stopped at the earliest.³⁴

In addition, the Committee noted that no action plan has been prepared by the Ministry for controlling illegal cutting of trees in forests. It recommended the Ministry to take cognizance of the illegal felling of trees in different parts of the country and prepare an action plan for tackling this menace, in coordination with state governments.³⁴

Financing afforestation: In 2021-22, the Green India Mission has been allocated Rs 250 crore (an annual increase of 14% over the actual expenditure in 2019-20).

The Standing Committee on Science & Technology, Environment & Forests on the 'Status of Forests in India' (2019) had noted that the budget allocation to National Afforestation Programme has been insufficient. This has affected the achievement of the annual targeted area of afforestation during the last few years. The Committee recommended the Ministry to ensure adequate allocation to the National Afforestation Programme to achieve the targets under the Programme.

The Standing Committee on Science and Technology, Environment, Forests, and Climate Change (2020) noted that the Green India Mission is an important programme.² However, there has been under-utilisation of funds in the Mission. In 2020-21, up to the revised stage, 61% of the funds allocated to the Mission has been utilised.²

Evaluation: The Standing Committee on Science & Technology, Environment & Forests on the 'Status of Forests in India' (2019) noted that the mid-term evaluation study on National Afforestation Programme conducted by the Indian Council of Forestry Research and Education (ICFRE) in 2008 had highlighted the successful implementation of the programme.³⁴ However, the Committee observed that more than ten years have

passed since the previous ICFRE evaluation and recommended the Ministry to undertake a new study. This will help in assessing the actual impact of the Green India Mission on the forest cover and formulate strategies accordingly.³⁴

The Committee also recommended the Ministry to take necessary action for determining the availability of total land for afforestation in the country. This will help state governments in formulating strategies for taking up the afforestation activities at their level.

Compensatory Afforestation Management and Planning Authority (CAMPA) funds

The CAMPA funds were established under Compensatory Afforestation Fund Act, 2016 in August 2016.³⁹ The Act requires an entity, diverting a forest land towards non-forest purposes (such as mining), to pay for planting forest over an equal area of non-forest land or over twice the area of the degraded forest land. The purposes for utilisation of the fund include: (i) artificial plantations, (ii) wildlife and forest protection, and (iii) forest related infrastructure development.

The Standing Committee on Science and Technology, Environment, Forests, and Climate Change (2020) noted that the CAMPA fund has a huge corpus of Rs 54,394 crore. The funds have accumulated due to deforestation. However, the current guidelines on the utilisation of fund restrict its utilisation for other schemes with similar objectives (such as Green India Mission) under the Ministry.²

The Committee recommended the Ministry to explore possibilities of utilisation of fund for schemes with objectives like those defined for utilisation of CAMPA fund. It specified that amendment to CAMPA Act and rules should be also considered for enabling utilisation of the fund for schemes with similar objectives.²

¹ Budget Speech 2021-22,

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² Report No. 331, Standing Committee on Science and Technology, Environment, Forests, and Climate Change, March 6, 2020,

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³ Report No. 313, Standing Committee on Science and Technology, Environment, Forests, and Climate Change, March 13, 2018,

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⁴ Chapter 2 – Forest Cover, India State of Forest Report 2019, Ministry of Environment, Forests, and Climate Change, <https://fsi.nic.in/isfr19/vol1/cover-page.pdf>.

⁵ Article 1, United Nations Framework Convention on Climate Change, 1992.

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⁸ CO₂ Emissions from Fuel Combustion 2015, International Energy Agency, 2015, <http://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf>.

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