

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION No. 1805
TO BE ANSWERED ON 13.02.2023

Study/Survey regarding Air Pollution in Rural Areas

1805. SHRIMATI SUNITA DUGGAL:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether the Government has carried out any studies/survey to examine the state of air pollution in rural areas specifically and if so, the details thereof;
- (b) the number of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) that functional in rural parts of the country, State/UT-wise including the State of Haryana;
- (c) the steps taken by the Government to tackle indoor air pollution from biomass burning etc. in rural areas; and
- (d) whether the Government has made any action plan specific to rural areas for mitigating air pollution due to stubble burning, biomass/fuel wood burning in rural areas and if so, the details thereof?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

(SHRI ASHWINI KUMAR CHOUBEY)

(a) to (d)

Source apportionment (SA) and Emission Inventory (EI) studies are carried out to identify various factors contributing to air pollution and to estimate their contribution to pollutant emissions and concentrations.

Air Pollution is primarily an urban phenomenon as most of anthropogenic activities in the urban areas, arising from various sectors viz. vehicular pollution, industrial pollution, dust from construction and demolition project activities, road and open areas dust, biomass burning, municipal solid waste burning, fires in sanitary landfills and air pollution from dispersed sources, bursting of fire crackers etc. Ambient air quality monitoring network of country presently has 1326 stations (Manual + CAAQM Stations) covering 478 cities in 28 States and 7 Union Territories wherein Ambient air quality is being monitored by manual monitoring in 26 locations covering 26 villages in 1 state (Punjab) and 1 UT (Daman & Diu and Dadra & Nagar Haveli). In the current Financial Year 2022-23, each SPCB/PCC has been requested to plan 10 rural stations in each State for funding under National Air Quality Monitoring Programme.

The steps taken by the Government to tackle indoor air pollution from biomass burning etc. in rural areas inter-alia include building specific Guidelines and protocols on monitoring and management of indoor air pollution.

The steps being taken by Government for mitigating air pollution due to stubble burning, biomass/fuel wood burning are given as Annexure.

Steps taken for improvement of air quality

- I. High Level Task Force Meeting under Principal Secretary to Hon'ble Prime Minister held on 14.10.2022 for Air Quality Management in Delhi and NCR and Adjoining Areas (CAQM)
- II. Department-related Parliamentary Standing Committee on Science and Technology, Environment, Forest and Climate Change on (i) the preparation for preventing winter pollution in north India and (ii) review of the National Clean Air Programme (NCAP) held on 17.10.2022 under the Chairmanship of ShriJairam Ramesh, Parliamentary Standing Committee.
- III. Launched National Clean Air Programme (NCAP) in January 2019 to tackle the problem of air pollution in a comprehensive manner with targets to achieve 20 to 30 % reduction in PM10 and PM2.5 concentrations by 2024 keeping 2017 as base year.
- IV. Constitution of Commission for Air Quality Improvement in National Capital Region and Adjoining Area (CAQM) through an Act passed by the Parliament of India on 13.08.2021, for the purpose of improving the Air Quality in National Capital Region and Adjoining Areas.
- V. Interaction with concerned agencies/organisation and Ministries at Central and State level to assess the preparedness of policy makers, enforcement agencies and regulatory bodies in order to tackle the problem of Air Pollution in Delhi NCR initiated interaction.
- VI. More than 20 meetings held involving the State agencies, NGOs, SPCBs and the Commission for Air Quality Management in National Capital Region and Adjoining Areas (CAQM) since 14th August, 2021.
- VII. Some of the initiatives taken in these meetings including options to promote use of paddy straw as alternate resource as fuel and fodder are as below:
 - i. Joint ministerial meeting with Central Ministries like Agricultural & Farmer Welfare, Fisheries, Animal Husbandry & Dairying, Power, Railways to explore the possibilities of policy interventions and strengthening of existing schemes.
 - ii. Hon'ble Minister of Environment, Forest and Climate Change held meetings with Chief Ministers, Environment Ministers and Chief Secretaries of NCR States including Punjab, followed by meeting of Commission with Chief Secretaries, State departments and Local Administrations.
 - iii. To encourage use of Stubble as supplementary bio-mass fuel in thermal power plants (TPPs) in NCR. Subsequently, preparedness was reviewed for all TPPs (within 300 Km of NCT) by Minister of Power. NTPC floated tender buying contract for Stubble based bio-mass pellets to be used as supplementary fuel. This will help in environmentally sound Stubble management with added income to farmers and discourage Stubble burning, resulting in lesser contribution to emission load in coming years.
 - iv. Operationalization of a Centralised Control room in Ministry of Agriculture & Farmer Welfare to co-ordinate with State and Central agencies to prevent stubble burning.
 - v. Increase coverage area for in-situ Stubble management using proven PUSA technology for bio-decomposing (Government and NGOs).
 - vi. Task Force constituted for collection of Stubble in Punjab and Haryana and supply as fodder to fodder deficient region of Rajasthan and Gujarat.
- VIII. Review meetings on management of air quality in Delhi NCR held on 20-May-22, 22-June-22, 22-Jul-2022, 23-Aug-22, 22-Sep-22 and 30-Sep-22 with the following agenda:

- (i) Limiting the use of DG Sets, uninterrupted power supply in the region
 - (ii) Revision / updating of action plan for prevention and control of Paddy Stubble Burning in 2022 and up scaling Ex-Situ Management of paddy straw
 - (iii) Extended use of Pusa Bio-Decomposer for In-Situ Crop Residue Management
 - (iv) Management of dust from roads, central verges, sidewalks and open area along the right of ways
 - (v) Utilization of Parali for production of Bio-fuel and ethanol to be used in Boilers and development of market mechanism for the purpose
 - (vi) Shifting of industries of NCR to CNG / Cleaner fuel etc.
- IX. Minister level Inter-Ministerial Meeting held on 03.10.2022 on the management of crop residue burning under the co-chairmanship HMoP, HMEF&CC, HMoA&FW
- X. Meeting of Hon'ble Ministers of Environment of the States of NCR, Punjab and NCT Delhi held under the Chairmanship of HMEF&CC on 11.10.2022 to review Air Quality Management in the NCR region under the Chairmanship of Hon'ble MEF&CC.
- XI. Minister level Inter-Ministerial Meeting on the management of crop residue burning was held on 19.10.2022 on the management of crop residue burning under the co-chairmanship HMoA&FW, HMEF&CC, HMoFAH&D.
- XII. **Various actions taken by CAQM** is summarised as under:
- Prevention and control of paddy stubble burning
- Framework for Prevention and control of paddy stubble burning prepared after extensive consultation with State Governments of Punjab, NCR States, GNCTD and Central Ministries, Knowledge institutions namely ICAR, IARI, ISRO etc.
 - Major components of the Framework:
 - Plans to reduce generation of paddy straw (diversification to other crops and to other varieties).
 - *In-situ* Crop Residue Management
 - *Ex-situ* Crop Residue Management
 - Monitoring/Effective enforcement.
 - IEC activities.
 - Statutory Directions to develop detailed state specific Action Plans based on the Framework. Plans finalized for Punjab, Haryana and Uttar Pradesh for 2022, based on the framework and also field learnings from the year 2021. The plans include a futuristic policy for ex-situ utilization of paddy straw.
 - Statutory directions issued for mandatory co-firing of biomass with coal (@5-10%) in thermal power plants located within 300 kms. of Delhi.
 - Statutory Directions issued for effective implementation of action plans for the prevention and control of Stubble Burning.
 - Standard ISRO protocol developed for monitoring fire events. Statutory Directions issued for adoption of the protocol for recording of fire events using satellite data.
 - Close monitoring by CAQM of the daily fire counts – regular follow up with the State Governments.
 - The Commission has evolved a comprehensive policy in July, 2022 towards short-term/ medium-term/ long-term actions to abate air pollution in the region across all contributing sectors.
- Control of industrial emissions
- Statutory Directions issued for implementing the “Standard” fuel list of approved clean fuels in NCR and phasing out heavily polluting fossil fuels like coal, diesel oil, LDO etc.

- Statutory Directions for industries to shift to approved fuels, by 30.09.2022 (for areas where gas infrastructure is available) and by 31.12.2022, where gas infrastructure is still not available.

Directions/ Regulations for use of Power Generating Sets

- No restrictions on generator sets running on LPG/Natural gas, Butane/Propane/Biogas
- Uninterrupted use of DG sets permitted only for emergency services during GRAP.
- DISCOMS to ensure uninterrupted power supply in NCR to minimize use of DG Sets.
- Regulated use of DG Sets for industrial sector during GRAP for limited time subject to retro fitment of Emission Control Devices (ECD) and running on dual fuel mode (gas and diesel)

Control of vehicular pollution

- Hon'ble NGT's and Hon'ble Supreme Court's orders do not permit overaged vehicles (15/10 yrs. for petrol / diesel vehicles respectively) to run in NCR.
- Advisory issued by Commission for developing suitable EV policies, focusing on mandatory procurement of e-vehicles for various sectors.
- Transition to CNG / cleaner vehicles also in outer NCR.
- Effective PUC regime – control on polluting vehicles

Dust management from roads and open areas and from construction and demolition activities

(i) Road dust management

- Statutory directions to all road owning/ maintaining agencies for setting up of 'Dust Control and Management Cells' (DCMCs).
- Key actions for DCMCs:
 - Optimum utilization of road sweeping machines
 - Scientific disposal of dust collected
 - Sprinkling of water and dust suppressants on roads / right of ways
 - Augmentation of sweeping and sprinkling machines
 - Proper maintenance of roads and also keep road pothole free
 - Laying of roads to fully support mechanised sweeping.
 - Non-paved road sides to be paved or converted into green
 - Greening of central verges / plantation of trees
 - Cemented roads in industrial areas.
 - Identification of hot spots and implement specific road dust control measures
- Sixty (60) 'Dust Control and Management Cells' set up.

▪ NCT of Delhi	: 11
▪ Uttar Pradesh	: 18
▪ Haryana	: 17
▪ Rajasthan	: 14

(ii) Dust management from C&D projects:

- Statutory directions issued mandatory registration of projects on plot size is equal to or more than 500 sq mtr. on the C&D web portal.
- Web portals functional in Delhi, Haryana and Uttar Pradesh. Under development in Rajasthan.
- Self-certification by the proponents on the portal.
- Cross Verification of the parameters as certified on the portal vis-à-vis the ground conditions.

- Compliances related to various rules and guidelines related to effective dust mitigation measures at C&D sites viz. Wind breakers, dust screens, water sprinkling, dust suppressants and soil stabilization measures etc.
- Deployment of adequate numbers of anti-smog guns, in proportion to the area of the construction sites.
 - At least 1 for a total construction area between 5000 - 10000 sqm.
 - At least 2 for a total construction area between 10001- 15000 sqm.
 - At least 3 for a total construction area between 15001- 20000 sqm.
 - At least 4 for a total construction Area 20,000 sqm.
- Compliance of guidelines for covering of construction materials with dust potential.
- Transportation of C&D materials in covered vehicles.

Other matters:

- (i) Revised Graded Response Action Plan (GRAP)
 - Revised GRAP based on Delhi's AQI as against PM_{2.5} / PM₁₀ levels earlier.
 - Preventive / restrictive / prohibitive actions under 4 different stages (I-IV) w.e.f. 01.10.2022.
 - Daily forecasts by IMD/ IITM started.
 - Sub-Committee for invoking GRAP meeting regularly for invoking the GRAP actions, based on the AQI forecast.
 - Actions under Stage II, III and IV of the GRAP to be invoked at least three days in advance of the AQI reaching to the projected levels of that stage, based on the forecast.
 - 24 action points under Stage-I 'Poor' (AQI 201-300)
 - 12 action points under Stage- II 'Very Poor' (AQI 301-400)
 - 9 action points under Stage III 'Severe' (AQI 401-450)
 - 8 action points under Stage IV 'Severe+' (AQI>450)
- (ii) Prevention of open burning of solid waste and bio-mass Desired Actions:
 - Intensified inspections / monitoring during winters.
 - Proper collection, segregation and disposal of solid waste.
 - Proper clearance of leaves, twigs etc. after road cleaning activities.
- (iii) Prevention of air pollution through fire crackers Desired Actions:
 - Strict implementation of Hon'ble Supreme Court / NGT orders on use of fire crackers.
 - Enforce ban on use of fire crackers wherever imposed.

XIII. Action taken by Central Pollution Control Board (CPCB):

- Air Quality Monitoring and Network

National Air Quality Index (AQI) was launched in 2015. Information is being disseminated to public through daily air quality bulletins.

- Ambient Air Quality Network:
 - (i) Ambient air quality monitoring network in Delhi NCR strengthened and presently comprises 143 stations (81 continuous and 62 manual systems). Larger coverage and better representative data is now available.
 - (ii) In addition, to supplement conventional ground level monitoring, satellite based PM_{2.5} monitoring in collaboration IIT Delhi is being established using aerosol optical depth (AOD).
 - (iii) A Central Control Room is operated by Central Pollution Control Board wherein, hour to hour tracking of various information such as PM concentrations, Live Air Quality Data of Monitoring stations, Live Air Quality Index, Air Quality Forecast in Delhi-NCR (Source: SAFAR, IITM, Pune) is available.

- (iv) AQI is monitored along with other parameters and is published on the website in the form of AQI Bulletin after analysis. The links for the same have been made available to CAQM for consideration and deciding on urgent actions for control of pollution in Delhi-NCR.
- Measures for control of vehicular emissions:
 - (i) Installation of Vapour Recovery System (VRS) in 3,600 petrol pumps
 - (ii) New policy – VRS to be installed at new petrol pumps
 - a. selling >100kl per month in million plus cities
 - b. selling >300kl per month in cities with population between 1 lakh to 1 million
 - (iii) Directions issued to M/s IOCL, M/s BPCL, M/s HPCL, M/s RIL, M/s Shell, M/s Nayara for installation of VRS as per above mentioned criteria
 - (iv) Guidelines issued for setting up of new petrol pumps including siting criteria
 - (v) Guidelines issued for siting criteria for new petrol pumps around water bodies

 - Measures for control of industrial emission:
 - (i) MoEF&CC has notified emission standards for industrial boilers and five industrial sectors i.e. lime kiln, foundry, ceramic, glass and reheating furnaces, in the year 2018.
 - (ii) Installation of OCEMS in red category industries in Delhi-NCR is in progress.
 - (iii) Industrial units in Delhi have shifted to PNG/cleaner fuels whereas, units in NCR shall shift to PNG/Biomass latest by December 31, 2022.
 - (iv) Shifting of all operational brick kilns to zig-zag technology in Delhi and NCR.
 - (v) CPCB has come out with System and Procedure for Emission Compliance Testing of Retro-fit Emission Control Devices (RECD) for Diesel Power Generating Set Engines up to Gross Mechanical Power 800 kW.

 - Measures for Control of Emissions from Stubble Burning
 - (i) Daily monitoring of Active Fire Events (AFE) is done during stubble burning period and reports are shared with Commission on Air Quality Management in National Capital Region and Adjoining areas for suitable action.
 - (ii) CPCB framed guidelines for promoting setting up of paddy straw based pelletization and Torrefaction plants which may help in addressing the supply chain issues. Scheme will address the issue of open burning of paddy straw in agriculture fields in Northern Region. A corpus of Rs. 50 crores have been sanctioned from EPC funds. Assuming complete utilization of the corpus, over 1 million metric tonnes of paddy straw based pellets are expected to be generated every year.

 - MSW, C&D Waste, E- Waste, Biomedical Waste and Hazardous Waste:
 - (i) CPCB published guidelines on
 - Environmental Management of Construction & Demolition (C & D) Wastes' in March, 2017
 - 'Guidelines on DUST Mitigation Measures in Handling Construction Material & C&D Wastes' in November 2017.
 - Disposal of legacy waste by bio-mining and bio-remediation to address open burning and landfill fires

- Deployment of Anti-Smog Gun at large construction projects sites in all construction projects in Delhi-NCR having more than 20,000 sq. meters' built-up area
 - (ii) Extended Producer Responsibility (EPR) for plastic, waste tyre, batteries and e-waste management.
 - (iii) Ban on use of Single Use Plastic (SUP) w.e.f. July 01, 2022.
- Technical Interventions
 - (i) Advisory have been issued to State Boards to use dust suppressant as about 30% reduction in dust concentration was observed up to 6 hours after application of dust suppressant.
 - (ii) A pilot Smog tower has been commissioned at AnandVihar, ISBT and is being operated since October 01, 2021. Localized pollution reduction performance being evaluated by IIT Bombay in association with IIT Delhi.
 - (iii) Research projects are being carried out by CPCB in collaboration with premier institutions like IIT, NEERI, etc. under Environment Protection Charge (EPC) funds which provide scientific inputs for taking focused action towards improvement in air quality of Delhi NCR.
 - (iv) CPCB has initiated issuance of a daily report comprising of AQI of Delhi and NCR towns, comparative AQI status, year-wise trends of PM concentration, hotspots for the day, AFE counts, contribution of stubble burning and meteorological forecast. This report is prepared based on the inputs available from various sources such as IMD, SAFAR, IARI, etc., and disseminated through CPCB website.
 - Close Monitoring & Ground level implementation
 - (i) Central Pollution Control Board has been continuously deploying dedicated CPCB's teams on the field during the winter season from 2017 onwards to check on-ground scenario of air pollution related activities and refer these to implementing agencies for necessary action.
 - (ii) 03.12.2021 onwards 40 officers of CPCB have been deployed as flying squads, for conducting incognito inspection of units/sites in various areas of Delhi, NCR regions of Uttar Pradesh, Haryana, and Rajasthan. Reports are submitted to Commission on Air Quality Management in National Capital Region and Adjoining areas for further action.
 - Regular Stakeholder Consultation, Public & Media Outreach
 - (i) Continuous interactions and coordination with government bodies, public agencies, urban local bodies for assessment of mitigation measures and to combat air pollution through review meetings for air quality management in Delhi-NCR. 41 review meetings convened as on date.
 - (ii) Twitter and Facebook accounts for public outreach and complaint redressal are closely monitored and complaints resolved through concerned enforcement agencies.
 - (iii) Dedicated media corner on CPCB website informs latest developments and actions taken. Media briefings are also organized.
 - Regulatory Actions
 - (i) Graded Response Action Plan (GRAP) was prepared for implementation under different Air Quality Index (AQI) categories in pursuant to the Hon'ble Supreme Court's Order dated December 02, 2016. A Task Force, headed by CPCB and comprising of members from Delhi Pollution Control

Committee (DPCC), State Pollution Control Boards (SPCBs) of Haryana, Uttar Pradesh & Rajasthan, India Meteorology Department (IMD) and Health Expert was constituted for recommending measures under GRAP to EPCA. 68 meetings of the Task Force were held until EPCA was dissolved on promulgation of Commission for Air Quality Management in NCR and Adjoining Areas (CAQM).

- (ii) Subsequently, Commission on Air Quality Management in National Capital Region and Adjoining areas (CAQM) entrusted the task of operationalizing and monitoring the GRAP measures to CPCB till a mechanism is set up. CPCB reviewed air quality and meteorological scenario and issued the orders on 11.11.2020, 23.12.2020 and 15.01.2021 to all the concerned states.
 - (iii) CPCB had requested MoEF&CC for revision of GRAP and further, CPCB has prepared revised action plan which was forwarded to the Commission for Air Quality Management in NCR and Adjoining Areas for taking it further. Subsequently, based on the inputs of CPCB and detailed deliberations, a revised GRAP has been published by CAQM on 05.08.2022, which came into effect from 01.10.2022.
 - (iv) The Commission for Air Quality Management in NCR and Adjoining Areas (CAQM) constituted a sub-committee for operationalization of GRAP under chairmanship of Member Secretary, CPCB and issuing necessary orders to the effect, under which regular meetings are held, and Orders are issued under GRAP for mitigation of air pollution in Delhi-NCR. The sub-committee has since then been reconstituted, under the chairmanship of Member-Technical, CAQM vide order dated 06.09.2022.
 - (v) Comprehensive Action Plan (CAP) for air pollution control in Delhi & NCR is developed by MOEF&CC which identified timelines and implementing agency for actions identified. CPCB issues directions to all the concerned agencies under Section 3 and 5 of Environmental (Protection) Act, 1986 for implementation of Comprehensive action plan. Now, CAQM is looking after implementation of CAP.
- Other Actions
- Dedicated media corner, twitter and Facebook accounts have been created for public outreach and complaint redressal is closely monitoring the complaints on SAMEER app and social media platforms (Twitter & Facebook). Sameer and social media complaints are resolved through enforcement agencies and redressal status is being shared with respective agencies.
- (i) National Air Quality Index (AQI) which was launched in 2015 is being disseminated to public through daily air quality bulletins.
 - (ii) Ambient Air Quality Network: Ambient air quality monitoring network in Delhi NCR strengthened and presently comprises 143 stations (81 continuous and 62 manual systems). Larger coverage and better representative data is now available.
 - (iii) In addition, to supplement conventional ground level monitoring, satellite based PM_{2.5} monitoring in collaboration IIT Delhi is being established using aerosol optical depth (AOD).
 - (iv) A Central Control Room is operated by Central Pollution Control Board wherein, hour to hour tracking of various information such as PM concentrations, Live Air Quality Data of Monitoring stations, Live Air Quality Index, Air Quality Forecast in Delhi-NCR (Source: SAFAR, IITM, Pune) is available.

- (v) AQI is monitored along with other parameters and is published on the website in the form of AQI Bulletin after analysis. The links for the same have been made available to CAQM for consideration and deciding on urgent actions for control of pollution in Delhi-NCR.
