Enviro Monitor

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Air quality

Centre's 42-point to clear air in a year. The Centre has issued a 42-point action plan to control the alarming level of air pollution and directed Delhi and three neighbouring states—Haryana, Uttar Pradesh and Rajasthan—to implement them. While some of these points are likely to be implemented immediately, the others will be taken care of in a staggered manner ranging from 30 days to one year. The directions were issued under Air (Prevention and Control of Pollution) Act 1981 that empowers the Centre to take action against erring officials after getting a non-compliance note from the states. Details about some action points are given below.

Action Points	Time frame for implementation
Some measures to control pollution in Delhi and NCR	
▪ Ensure strict action against visibly polluting vehicles	Immediate
▪ Install weigh in motion bridges at Delhi borders to prevent overloading	Immediate
▪ Take steps to prevent parking of vehicles in the non-designated areas	Immediate
▪ Take steps for retrofitting of diesel vehicles with Particulate Filters	Immediate
▪ Synchronize traffic movements / Introduce intelligent traffic systems for lane-driving	30 days
▪ Install vapor recovery system in fueling stations	30 days
▪ Prepare action plan for public transport on CNG mode	90 days
▪ Promote battery operated vehicles	90 days
Control of road dust/re-suspension of dust and other fugitive emission	
▪ Formulate action plan for creation of green buffers along the traffic corridors	Immediate
▪ Introduce wet/ mechanized vacuum sweeping of roads	30 days
▪ Undertake greening of open areas, gardens, community places, schools and housing societies	90 days

▪ Take steps for blacktopping / pavement of road shoulders to avoid road dust	180 days
Control of air pollution from bio-mass burning	
▪ Ensure proper collection of horticulture waste (bio-mass) and composting–cum-gardening approach	Immediate
▪ Ensure strict enforcement of ban on burning of agriculture waste and crop residues	Immediate
▪ Prohibit use of coal in hotels and restaurants and eliminate use of kerosene for cooking in Delhi	60 days
Control of industrial air pollution	
▪ Ensure strict action against unauthorized brick kilns	30 days
▪ Ensure strict action against industrial units not complying with standards	60 days
▪ Launch action plan for switching over to natural gas by industries, wherever feasible	120 days
Control of air pollution from construction and demolition activities	
▪ Control dust pollution at construction sites through appropriate cover	Immediate
▪ Undertake control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units	30 days
▪ Ensure carriage of construction material in closed/covered vessels	30 days
Other steps to control air pollution	
▪ Set-up helpline in States/UT for taking action against reported non-compliance	Immediate
▪ Establish standard operating procedure to provide quick and effective response to complaints	30 days
▪ Take steps for maximizing coverage of LPG / PNG for domestic cooking purposes with intention of achieving 100%	90 days
▪ Undertake satellite based monitoring for tracking and enforcing agriculture waste burning	90 days
▪ Take steps for setting up of bio-mass based power generation units to avoid bio-mass burning.	One year

Air quality in Delhi on December 31 crossed limits. An analysis carried out by TERI said that air pollution levels violated the prescribed limits on the last day of the year and air quality was very “poor” exposing people to high risks of respiratory and cardiovascular problems. The trend analysis at four locations of

the city found concentrations "higher" with respect to the 24-hourly average standards for PM 10, PM2.5 and NOx respectively. TERI is carrying out an analysis on three main air pollutants PM 10, PM 2.5 and NO2 at four locations in Delhi based on the data from government's monitoring network. The objective is to analyse the effect of odd-even cars scheme on air pollutant concentrations in different parts of the city. This exercise will be done till 20 January 2016 to assess pre- and post-air quality scenarios.

IIT-Kanpur study says trucks and road dust are bigger pollutants than cars in Delhi. A study by the Indian Institute of Technology, Kanpur shows that cars and jeeps contribute less than 10% of particulate matter while trucks are bigger culprits. A big contributor to Delhi's air pollution is road dust that accounts for about 35% of tiny particles known as PM 2.5 in the air, followed by vehicles, according to the recent study. The other big contributors include domestic cooking, power plants and industries. Vehicle emissions account for an average of 25% PM 2.5 levels, going up to 36% in the winters.

Source. The Economic Times, 10 December 2015

Trucks and two-wheelers account for larger chunks of PM 2.5 pollution than passenger cars' contribution of 14-15% to overall vehicle emissions.

Study begins on air quality and disease. As the Delhi government gets ready to implement a series of measures to tackle air pollution, the All India Institute of Medical Sciences (AIIMS) is set to lead the first large-scale study in nearly 18 years on links between respiratory and cardiovascular conditions, and air quality in the capital. Following up on a landmark study conducted by its former medicine department chief Dr J N Pandey from 1997-98, AIIMS will be part of a three-centre initiative funded by the Indian Council of Medical Research (ICMR) to find how changes in the Air Quality Index (AQI) impacts admission of patients with respiratory and cardiovascular complaints. This study will cover adult and paediatric population and look at admissions in respiratory and cardiovascular diseases, which are increasingly being associated with air pollution. Lady Hardinge Medical College's paediatrics department and Vallabhbhai Patel Chest Institute will be the other two centres participating in the ICMR study.

Air pollution is the fifth leading cause of death. Air pollution is the fifth leading cause of death in India, 37.7 million Indians are affected by water-borne diseases annually and approximately 1.5 million children die due to diarrhoea alone. Worse because of climate change India has seen an increase in vector-borne diseases such as dengue and malaria. The Centre for Science and Environment's recent publication, Body Burden 2015: State of India's Health, examines and dissects linkage between environment and health.

Not just Delhi. According to a recent Greenpeace (India) study, other than Delhi pollution levels in many Indian cities, including Delhi, Ahmedabad, Varanasi, Patna, Agra and Kanpur, exceed the toxic levels in Beijing and other Chinese cities, over the period covered by the National Air Quality Index (NAQI). The monitoring data shows that high pollution levels are truly a subcontinent-wide problem. With most of the pollution measured in cities typically caused by emissions from outside the city, national and regional level action is needed alongside local measures in cities.

The Economic Times, 10 De ember 2015 | The Hindu,… 16 December 2015 | Indian Express, 23 December 2015 | Hindustan Times, 26 December 2015 | The Times of India, 31 December 2015 | Business Standard, 31 December 2015 | Indian Express; 1 January 2016

Government plans to prioritise projects for conservation of water resources. The Centre has proposed to give a new push to managing the country's water resources by prioritizing its activities for 2016 when it will look beyond Ganga to initiate new projects and complete the ongoing ones.

Setting up of the National Bureau of Water Use Efficiency, modernization\expansion of flood forecasting network of the Central Water Commission, completion of the contentious Polavaram project in Andhra Pradesh and launching Yamuna rejuvenation plan are some of the key proposals which are to be taken up by the water resources ministry in a big way in 2016.

Andhra government to introduce e-Water system. The state government in collaboration with its Australian counterparts has decided to launch the e-Water project on a pilot basis as part of its efforts

to strengthen the state's water basins. Named the 'Integrated Water Resources Management for River Basins in Andhra Pradesh', the project aims to strengthen the water resource management and improve water use efficiency in all sectors like irrigation, urban drinking water and industrial needs in the state.

An Australian non-profit organisation -- e-Water Ltd -- and the state government will take up the six-month pilot study in Kurnool Cuddappah Canal popularly known as KC Canal irrigation system in Kurnool district at an estimated cost of Rs 3 crore to demonstrate the benefits of the using e-Water source modelling in the irrigation system. After analysing the study results, the government may implement the same in other irrigation systems like Vamsadhara in Srikakulam district, Thotapalli in Vizianagaram district, Godavari delta system in both Godavari districts, Krishna delta in Krishna district, Penna and Telugu Ganga projects.

Water crisis in Bengaluru. According to the former Additional Chief Secretary of Karnataka, Mr V Balasubramanian, the government of Karnataka will have to evacuate half of the city of Bengaluru in 10 years considering the water crisis in the city. The average annual rainfall in Karnataka is 1248 millimetres and it is very obvious that such low level rainfall has resulted in the decline of groundwater levels.

Facts on the water crisis in Bengaluru

- Bengaluru is situated at a height of 3000 feet above the sea level
- The water coming to Bengaluru has to be pumped up by 100 kilometres
- The cost of water in the city is Rs 82 per kilolitre. This makes Bengaluru's water the costliest available water in India and Asia
- Due to bad and irregular distribution system, nearly 509 million litres of this water goes waste every day. An estimated 35% of water meant for the city is wasted in leakages
- Bengaluru district has no major rivers flowing
- Bengaluru had over 159 lakes; most of them have dried up now

More frothing Bellandurs in the making. Study by experts from the Centre of Ecological Sciences, Indian Institute of Science (IISc), gives a clear and pathetic picture of Bengaluru's lakes. Of the 105 lakes studied, 97% of them have been encroached upon while 90% have been fed with sewage on a daily basis.

Over the past few months, the team of researchers went on field trips and gathered samples from 105 lakes, of which 25 are seasonal lakes. They came across very few water bodies where sewage isn't let in and are considerably less polluted. The team had conducted a similar research and field survey in 2007 and found out that 54% of the lakes were encroached upon for illegal buildings and nearly 66% of the lakes were sewage fed.

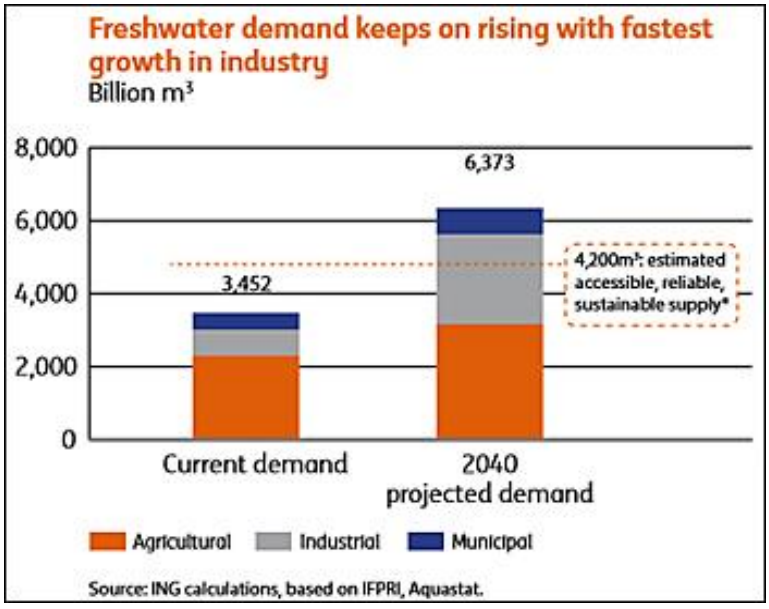
Gasping for life
Kodigehalli in Yeshwanthpur
Sarakki lake near JP Nagar
Puttenahalli lake
Agara lake
Varahasandra lake near Kengeri
Karihobanahalli lake in Peenya
Shivapura-Nalakadarenahalli lake in Peenya

Not so polluted
Sankey Tank
Jakkur
Ranchenahalli

Presently the numbers stand at 97% and 90% respectively.

Sewage treatment plants to come up in four Bengaluru lakes. The Bangalore Water Supply and Sewerage Board will set up sewage treatment plants in four lakes in the City, under the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme. The move would help in releasing treated water into the lakes. The four lakes are located in Sarakki, Chikka Begur, Hulimavu and Agara, where the BWSSB proposes to set up the STPs to treat at least 5.5 MLD (millions of litres per day) of sewage water. Dirty water accumulated in the four lakes were connected to Bellandur lake. The frothy Sarakki lake indicates high contamination of water. By setting up the STPs, the board plans to reduce the amount of dirty water entering the 800-acre Bellandur lake.

Demand for water set to outstrip supply by 50 per cent by 2040. By 2040 the gap between the global demand for freshwater and its supply will hit 50 per cent, intensifying the competition for global water resources in a way that will impact businesses across a range of sectors. The findings, published by economists at ING Bank, are the latest indication that the world's current level of freshwater consumption is not sustainable. The report cites estimates from the Water Resources Group, which puts the world's accessible, reliable, and sustainable freshwater supply at 4200b n m3. Current global water usage totals about 3452 bn m3 of water, but this is expected to increase to 6373 bn m3 by 2040 as the world's population continues to grow and developing nations consume more and more water for industrial purposes. At the same time, businesses face growing risks from flooding, the report said. The US, China, India, and Indonesia are all countries with a high risk of both water stress and flooding, giving firms in these countries the dual challenge of sourcing enough water for their operations and ensuring they have adequate flood defenses in place.



Source. ING. 2015

Business Green, 7 December 2015 | Deccan Herald, 17 December 2015 | The Times of India, 21 December 2015 The Times of India, 22 December 2015 | The Times of India, 27 December 2015 | India Today, 29 December 2015

India to have 8 new observatories to study climate change. India has announced a programme to open eight more long-term ecological observatories to study the effects of climate change. The new facilities under the Indian Long Term Ecological Observatories (I-LTEO) would assess the health of eight different biomes (types of habitat) and come up with long-term research findings on the changes there that were happening due to climate change. It will cover the Western Himalayas to Western Ghats, Eastern Himalayas to Andaman and Nicobar islands, central India to the Sundarbans, and from Jammu and Kashmir to Rajasthan and Gujarat.

Climate change fund: NSCCC approves four projects. The National Steering Committee on Climate Change (NSCCC) under the Environment Ministry approved four projects including management and rehabilitation of coastal habitats for climate change adaptation in the Gulf of Mannar in Tamil Nadu. The NSCCC approved four projects from Tamil Nadu, Kerala and Punjab and considered one project submitted by Madhya Pradesh.

Industries to get German aid to combat climate change in 2016. Industries in Telangana and Andhra Pradesh are gearing up to combat climate change with assistance from Germany. Formulisation of a strategy to help industries adapt, will begin soon. The report, published as part of the ongoing Climate Change Adaptation Project in both the states, prominently notes that many inappropriately planned, poorly managed and unorganised industries are at risk. Describing the changes to climate witnessed in the two states, the report mentions heat waves, droughts, floods due to heavy rains and cyclones as major hazards. Referring to Indian Meteorological Department's data, it points out that temperatures in former Andhra Pradesh increased 0.6 degree Celsius over the past 60 years while annual rainfall has increased 1.31 mm per year during the same period.

Outcomes of the UN Climate Change Conference in Paris. Parties to the UN Framework Convention on Climate Change (UNFCCC) reached a landmark agreement at the 21st session of the UNFCCC Conference of the Parties, or COP 21, charting a fundamentally new course in the two-decade-old global climate effort. Culminating a four-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen them in the years ahead. The agreement and a companion decision by parties were the key outcomes of the Paris conference. The measures in the agreement include:

- To peak greenhouse gas emissions as soon as possible and achieve a balance between sources and sinks of greenhouse gases in the second half of this century
- To keep global temperature increase "well below" 2C (3.6F) and to pursue efforts to limit it to 1.5C
- To review progress every five years
- $100 billion a year in climate finance for developing countries by 2020, with a commitment to further finance in the future.

The Hindu, 8 December 2015 | BBC, 13 December 2015 | The Economic Times, 28 December 2015 | The Hindu, 31 December 2015 | Center for Climate and Energy Solutions, 2015

Forest Survey of India: Behind net gain, a loss of 2500 sq km of best forests in two years. The Forest Survey of India's biennial report showcases that while the total forest cover of the country has increased by 3775 sq km, the tree cover has gone up by 1306 sq km. The total carbon stock in the country's forest is estimated to be 7044 million tones, an increase of 103 million tonnes, which is an increase of 1.48 in percentage terms over the previous assessments. The report also reported an increase of 2402 sq km in the very dense forest category that had remained static since 2007. Behind these happy figures, the report recorded a loss of 2511 sq km of very dense and mid-dense forests that have been completely wiped out, and become non-forest areas since 2013. While an area of at least 1 hectare (0.01 sq km) with a canopy density of 10% is considered forest, prime forests are classified as very dense and mid-dense with canopy densities of at least 70% and 40% respectively.

Loss of Prime Forests: 2013-2015 *(in sq km)*

Very dense forest to non-forest	257
Non-forest to very dense forest	157
Net loss of very dense forest	100
Mid-dense to non-forest	2254
Non-forest to mid-dense forest	978
Net loss of mid-dense forest	1276
Total loss of prime forest	1376

The states of Jammu & Kashmir, Uttarakhand, Meghalaya, Kerala, Arunachal Pradesh, Karnataka, Uttar Pradesh, Telangana and Manipur, and the Andaman & Nicobar Islands took major hits. On the other hand, the overall gain of 2402 sq km of very dense forests since 2013 is largely due to positive results from the Andaman and Nicobar Islands, Uttar Pradesh and Tamil Nadu. The archipelago has gained 1932 sq km of very dense forests, putting 5686 sq km — or 84% — of its entire forest cover of 6751 sq km under the top category. Uttar Pradesh added 572 sq km of very dense forest — a jump of 35% since 2013. Tamil Nadu reported a net gain of 100 sq km of very dense forest.

Maharashtra sees a decrease in the forest cover to 50,628 sq km out of a total geographical area of 3,07,713 sq km. In 2013 its forest cover was 50,632 sq km, which was also a decrease from the 2011 data. Both reports attributed the decrease to encroachment on forest lands, with the 2015 report adding rotational felling and diversion of forest area for non-forestry purposes as reasons.

Three Gujarat districts lost forest cover, six gained. Industrialization has led to loss of forest cover not only in Ahmedabad and nearby areas but even in Kutch. Of the 25 districts inspected by the Forest Survey of India, decline in forest cover was noted in only three districts in the state — Ahmedabad, Kutch and Junagadh. According to the report, Ahmedabad district which has forest cover over just 1.71% of its 8707 sq km area, saw forest cover shrink by 2 sq km in two years. In 2015, the total forest cover was 149 sq km while in 2013 it was 151 sq km, says the report. According to the survey, there are six districts in the state which had registered an increase in forest cover. Dang had a forest cover of 77.64% of its geographical area which is 1762 sq km. This district was followed by Narmada (37.17%) and Valsad (30.87% of its geographical area).

36-sq-km growth in mangrove cover in 2 years. Maharashtra has seen the highest rise in mangrove cover across the country in the last two years, recording a phenomenal growth of 36 square kilometres, according to a Forest Survey of India (FSI) report. Considering that Maharashtra has only 4 per cent of the total mangrove cover in India, this is a huge growth as the state alone contributes 32 per cent growth to the Indian mangrove forests.

Press Information Bureau, 4 December 2015 | DNA, 5 December 2015 | Indian Express, 6 December 2015 | Indian Express, 13 December 2015 | The Times of India, 16 December 2015

Mumbai's smart city prototype gets go-ahead. Bhendi Bazaar Redevelopment Project, a Rs 4000-crore smart city prototype around Mumbai's popular shopping destination, has got all the clearances to start construction. The 16.5 acre project is estimated to take 10 years to complete, according to officials of Saifee Burhani Upliftment Trust (SBUT) working on the redevelopment plan. SBUT, a community-led organisation, is behind this project to give a makeover to Bhendi Bazaar, which lacks adequate infrastructure. It is being used as a pilot for the government's city rejuvenation plan. The project will cover 3200 residential units and 1250 commercial tenants. In the first phase, about 4 acres of area will be redeveloped over a period of three years.

Chennai, Madurai, Coimbatore, Tiruppur in Tamil Nadu's smart city plan. Tamil Nadu government has submitted its list of 12 cities under the Smart City project. The list, submitted on 28 December, includes Tiruchirapalli, Tirunelveli, Dindigul, Thanjavur, Tiruppur, Salem, Vellore, Coimbatore, Madurai, Erode, Thoothukudi and Chennai. The overall list now has 97 cities; while Telangana wants to replace Hyderabad with another city, Uttar Pradesh and Jammu & Kashmir are yet to submit one city each for inclusion under the Smart City Mission.

> The total submission under the Smart City Mission has risen to 97 cities

Nagpur: Two-third of Smart City funds to come from citizens. Beneficiaries will have to pay for Smart City as Nagpur Municipal Corporation (NMC) has decided to recover over two-third of the project's cost from citizens. The NMC will levy development charges of 120 per soft and more up to 80 per sq mt, along with 40% of total land, from around 8 lakh citizens to be covered under the project. Thus, the NMC will manage to collect funds of 2574.77 crore of the 3574.77 crore from the beneficiaries itself. The remaining cost of 1000 crore will be contributed by the Centre (500 crore), and 250 crore each from state and Nagpur Improvement Trust

MoU with US firm for smart cities approved. The Union Cabinet has given its approval for signing of a memorandum of understanding between the ministry of urban development and Bloomberg Philanthropies, New York, to support the government’s ambitious project of developing smart cities. The proposal entails Bloomberg Philanthropies to work as knowledge partner and support the development and execution of a cities challenge under the Smart Cities Mission.

Plans and their vision statements. In January 2016, 20 cities will be chosen for priority funding. The vision statements submitted by some of the cities capture the main thrust of their plans. The crux of most of these plans revolves around the same buzzwords: clean, green, economic hub, eco-tourism etc .

NDMC	Become a global benchmark capital city
Chandigarh	Innovative, economically vibrant, accessible.
Aligarh	Economically vibrant, environment-friendly city that conserves heritage
Dahod	Multi-functional activity hub for tribals
Ludhiana	Stress on promoting bicycles as transportation mode
Biharshariff	Tourism gateway
Bilaspur	To emerge as the cultural capital
Gandhinagar	An institutional hub with a diversified economic base that provides an equitable setting for all to live
Rajkot	Sustainable, affordable, resilient and technology driven
Surat	Equal access to best quality physical and social infrastructure and efficient mobility through state-of-the-art technology.
Dharamshala	To be a smart, sustainable and resilient city with a global imprint and enhanced quality of life for its residents
Ranchi	To develop as an industrial centre through inclusive growth
Mangaluru	To be a clean and green port city
Hubbali-Dharwad	To be the growth engine of North Karnataka
Kalyan –Dombivili	Facilitate a convenient living habitat for its citizens with excellent transit facilities
Bhubaneswar	Promote responsible governance through participatory decision-making and open access to information and technology
Oulgaret (Puducherry)	Focus on tourism and green industry and the concept of 'work-live-learn-play' environment.
Udaipur	Has coined the concept of 'Eternal Udaipur' wherein it will build further on its status as a lakeside heritage city
Tiruppur	To be a textile and apparel smart city
Dehradun	To establish the city as eco-friendly knowledge hub of the region
Agra	To further consolidate as a world class heritage city with increased economic opportunities for all citizens
Saharanpur	Promoting and developing local arts and skills

International Business Times, 29 December 2015 | Business Standard, 30 December 2015 | The Times of India, 30 December 2015 | The Asian Age, 31 December 2015 | Indian Express, 2 January 2016