Enviro Monitor
February 2016

Union Budget: Highlights

- Clean Environment Cess
- National Clean Energy Fund
- Infrastructure cess
- Organic farming and manure
- Ground water management.
- Swachh Bharat Abhiyan
- Soil Health Card scheme

Climate change

- As sea levels rise, economic damage piles up Study reveals strong connection between extreme rainfall and local temperature
- Kolkata Municipal Corporation to launch app for climate and disaster alerts
- Draft plan eyes more focus on climate change

Forestry & Biodiversity

- Western Ghats lost 35% of forest in 90 years
- India to follow Gujarat conservation model.
- Chhattisgarh government cancels tribal rights over forest lands
- Tribals help regain forest
- Forest fires destroy 300 acres in Bandipur, Nagarahole

Air quality

- India overtakes Chinas air pollution levels in 2015
- Mumbai's air quality worse than Delhi's
- Air pollution claims 5.5m lives annually
- ISRO orbiter to scan India's air for pollutants

Water stress

- 80% of India's population faces severe water scarcity
- CIMFR to make water potable in 25 mines
- Jammu: Five wetlands vanished in 30 years

Water pollution

- Eight central ministries join hands for the ambitious clean Ganga mission
- Online river water test demo begins
- DJB shuts 4 plants due to high ammonia levels.
- Polluting units along Hindon shut

Waste management

- 6 towns initiate waste segregation to handle daily garbage
- Tamil Nadu, West Bengal invests on waste management projects
- East Delhi gets waste plant
- Goverment plans SPV on PPP mode for creation of sewage plant
- 70% of urban India's sewage is untreated
- Visakhapatnam, Surat, Rajkot and Gangtok improve ranks to break into top 10

Union Budget Highlights

Budget allocation for Environment Ministry. A total of Rs 2250 crore has been allocated to the Environment Ministry in this year's budget, an increase of around Rs 600 crore

According to the budget, the total plan allocation for Externally Aided Project is Rs 290.99 crore, which includes

- ✓ Rs 15 crore for capacity building of forestry personnel,
- ✓ Rs 15 crore for hazardous substances management,
- ✓ Rs 223.98 crore for National Coastal Management Projects
- ✓ Rs 0.01 crore for Green India Mission: National Afforestation Programme
- ✓ Rs 12 crore for Biodiversity Conservation and Rural Livelihood Improvement
- ✓ Rs 25 crore for National River Conservation of Plan (NRCP) on Mula Mutha River in Pune

Out of Rs 1000 crore of National Clean Energy Fund, allocation of

- ✓ Rs 30 crore has been made for climate change action plan,
- ✓ Rs 100 crore for National Adaptation Fund for Climate Change
- ✓ Rs 50 crore for National Mission on Himalayan Studies
- ✓ Rs 185 crore for Green India Mission: National Afforestation Programme
- ✓ Rs 50 crore Intensification of Forest Management
- ✓ Rs 295 crore for Project Tiger
- ✓ Rs 25 crore for Project Elephant

Clean Environment Cess. Finance Minister announced that the clean energy cess which is levied on coal, lignite and peat will now be called "Clean Environment Cess" and has been doubled from the present Rs 200 per tonne to Rs 400 per tonne

National Clean Energy Fund. Out of Rs 1000 crore of National Clean Energy Fund (NCEF), allocation of Rs 30 crore has been made for climate change action plan, Rs 100 crore for National Adaption Fund for Climate Change, Rs 50 crore for National Mission on Himalayan Studies, Rs 185 crore for Green India Mission: National Afforestation Programme, Rs 50 crore Intensification of Forest Management, Rs 295 crore for Project Tiger and Rs 25 crore for Project Elephant

Infrastructure cess . Finance Minister proposed to levy an infrastructure cess of 1 per cent on small petrol, LPG, CNG cars, 2.5 per cent on diesel cars of certain capacity and 4 per cent on other higher engine capacity vehicles and SUVs

Organic farming. Budget has allocated Rs 412 crore for organic farming schemes, including the Paramparagat Krishi Vikas Yojana that will bring 500,000 acres under organic farming and the Organic Value Chain Development in the north-east region.

Organic manure. At least 5 lakh farm ponds and dug wells in rain fed areas and 10 lakh compost pits for production of organic manure will be taken up by making productive use of the allocations under MGNREGA.

Irrigation fund. A dedicated long-term irrigation fund will be created in National Bank for Agriculture and Rural Development, with an initial corpus of Rs 20,000 crore. The Budget has promised 89 irrigation projects will be fast-tracked. These need Rs 17,000 crore in the next financial year and Rs 86,500 crore in five years.

Ground water management. A major programme for sustainable management of ground water resources has been prepared with an estimated cost of Rs 6000 crore and proposed for multilateral funding.

Swachh Bharat Abhiyan. Rs 9000 crore has been provided for the Swachh Bharat Abhiyan, the drive to improve sanitation and cleanliness, especially in rural India. To promote it, priority allocations from centrally sponsored schemes will be made to reward villages that have become free from open defecation

Soil Health Card scheme. The Budget has provided for coverage of all 140 million farm holdings in the Soil Health Card scheme. Under the scheme, farmers get information about nutrient levels in the soil and can make judicious use of fertilisers. The National Project on Soil Health and Fertility gets a sum of Rs 368 crore
The Times of India, 29 February 2016 | Business Standard, 29 February 2016 | Business Standard, 1 March 2016

Climate change

As sea levels rise, economic damage piles up even faster. As sea levels rise, threatening cities from New York to Shanghai, the economic damage will increase even faster. Extreme floods whipped up by storms will become ever more costly for cities as ocean levels edge up around the world's coasts in coming decades, they wrote in a study that could help guide governments budgeting to protect everything from buildings and basements to metro systems. The study was published in Natural Hazards and Earth System Sciences.

The damage from sea level rise rises faster than sea level rise itself, says co-author Juergen Kropp, Potsdam Institute for Climate Impact Research.

Study reveals strong connection between extreme rainfall and local temperature. A study done by Indian Institute of Science (IISc), Bengaluru, says that extreme rainfall in India are more influenced by changes in local conditions than by changes in global conditions. To arrive at the conclusion, scientists have analyzed thirty five year climate related data collected from near 2000 locations spread across the country. Using closely related branches of statistics called the 'extreme value theory' and 'generalized linear models', the researchers have analyzed the maze of historically observed rainfall, and land and sea surface temperatures for the period 1969 and 2005, a span of 35 years. If El Nino can affect one year's rainfall, global climate change can influence the very seasonality of the rainfall. When it comes to intensity and frequency of extreme rainfall, local conditions have a stronger influence than the other two global factors, said Dr Arpita Mondal, who conducted the study as a research scholar at IISc.

Kolkata Municipal Corporation to launch app for climate and disaster alerts. India's first ever integrated climate cell at Kolkata Municipal Corporation is in the process of activating a mobile app for citizens that will give them alerts during natural disasters. This first-of-its-kind app in the country is intended to give information to citizens on various eco-friendly measures and alerts during disasters as part of preparedness planning, a release said. The climate change cell consists of a rooftop solar feasibility calculator, a first of its kind in the country. The initiative is expected to help people take steps at individual and collective levels to make a difference to the city. The set-up of the climate change cell has been supported by the UK under a two-year UK-Kolkata Municipal Corporation Programme of 1 million pound technical assistance on low carbon and climate-resilient Kolkata.

Draft plan eyes more focus on climate change. Integrating climate change into wildlife planning, mitigation of human-wildlife conflict, coastal and marine ecosystem conservation and a focus on wildlife health are among the key areas of the draft National Wildlife Action Plan 2017-31 unveiled by the Environment Ministry. The first NWAP was adopted in 1983, while the second was adopted in 2002, which is drawing to an end this year. The draft National Wildlife Action Plan envisages 17 focus areas, including the new area linking wildlife planning to climate change.

Mint, 5 February 2016 | Indian Express, 11 February 2016 | The Times of India, 23 February 2015 | Reuters, 28 February 2016

Forests & biodiversity

India to follow Gujarat conservation model.
The success of Gujarat's community-based wildlife conservation model will soon be replicated across the country. The Union Ministry of Forest And Environment has proposed employing the 'Van Praani Mitra' model in sanctuary areas and adjoining localities across the country.

Western Ghats lost 35% of forest in 90 years. Western Ghats, considered one of the global biodiversity hotspots, has lost forest cover to the tune of 33,579 square km, or 35.3 per cent, of the total forest over the last nine decades, indicating that it represents a vulnerable ecosystem, reveals the latest findings by the Indian Space Research Organisation's (ISRO's) National Remote Sensing Centre in Hyderabad.

Among the hotspots under India, the Western Ghats account for 64.95 per cent; Indo-Burma, 5.13 per cent; Himalayas, 44.37 per cent; and Sundaland, 1.28 per cent.

Chhattisgarh government cancels tribal rights over forest lands. Forest rights of tribals over their traditional lands in Ghatbarra village of Surguja district have been taken away by the Chhattisgarh government to facilitate coal mining of Prasa East and Kete Besan coal block. The block has been allocated to Rajasthan Vidyut Utpadan Nigam Limited (RVUNL) and Adani Minerals Private Limited.

In an order passed on January 8, the government had cancelled the community land rights of the tribals in the village, given under the Forest Rights Act (FRA). The government, in the order, stated that the villagers had been using their legal rights over the forest land to stop work of mining in their village, which falls in the Parsa East and Kete Besan coal block. It is the first such order to come to light in India, where community rights of tribals have been cancelled after being granted through the process laid down in the FRA.

Tribals help regain forest. A group of tribal villagers in Chhota Udepur have pulled off the forestation effort that has brought back green cover that was lost few years ago. Bhilpur, a far flung hamlet in n Chhota Udaipur, Vadodara, Gujarat, was only surrounded by dry hillocks after miscreants mercilessly chopped down large number of trees planted years ago and green cover was on the verge of extinction. However, due to the efforts and care of these villages, the village is lush with nearly seven lakh trees. With the help of forest department, the villagers have added three lakh trees to the existing cover of four lakh trees.

Forest fires destroy 300 acres in Bandipur, Nagarahole reserve. Two separate forest fires destroyed at least 300 acres of wooded area in Bandipur and Nagarahole tiger reserves. In both cases, the forest department suspects sabotage but no arrests have been made. It registered cases against unknown persons even as it focuses on tackling forest fires ahead of summer. Undergrowth in at least 250 acres has been destroyed in the Moleyur range in Bandipur.

The Times of India, 10 February 2016 | The Times of India, 15 February 2016 | Business Standard, 18 February 2016 | Bangalore Mirror, 18 February 2016 | The Times of India, 21 February 2016

Air quality

India overtakes Chinas air pollution levels in 2015. For the first time this century, the average particulate matter exposure was higher for Indian citizens than that of Chinese people, a [Greenpeace analysis](#) of NASA satellite data on particulate matter has shown. China's strong measures to curb pollution have contributed to the biggest year-on-year air quality improvement on record; while in contrast, India's pollution levels continued a decade-long increase to reach the highest level on record. Greenpeace analyzed NASA's satellite data on particulate matter from 2003 to 2015 in India and China, and found that pollution levels in China peaked in 2011 and then started to gradually reduce. India, however, saw a spike over the past decade, the last year being the worst on record. The study looked at the aerosol optical depth (AOD), which is the amount of fine solid particles and liquid droplets in air.

After a public outcry, China implemented a national air pollution action plan in 2013 that included stricter emission norms for coal-based power plants and industries, and greater enforcement of standards. The results of these measures show in the satellite data — there is a slight reduction in pollution in Central and Eastern China. The levels in India have increased over the years, with north India being the most polluted part of the country. The biggest jump was seen in West Bengal, Bihar, Uttar Pradesh and the National Capital Region. With a population-weighted analysis, the report found that the average citizen in India was exposed to more pollution in 2015 than his or her Chinese counterpart.

Mumbai's air quality worse than Delhi's. Pollution levels in Mumbai fell on 1 February but the city's Air Quality Index (AQI) was still in the 'very poor' category and, worse than that of Delhi. The AQI for Mumbai in the morning was 308; it reduced only marginally by evening, to 304, according to the System for Air Quality Weather Forecasting and Research (SAFAR). The AQI for Delhi, on the other hand, was pegged at 208 in the morning, and it improved to 169 in the evening. Experts at SAFAR said the national capital's improved air quality could be temporary due to a change in wind patterns. Most suburbs continued to record 'very poor' AQI. Among the most polluted were Chembur (363), which is close to Deonar, Andheri (355).

Air pollution claims 5.5m lives annually. Taking a deadly toll on us, poor air quality claims 5.5 million lives worldwide annually, with more than half of the deaths occurring in two of the world's fastest growing economies, China and India. Power plants, industrial manufacturing, vehicle exhaust and burning coal and wood all release small particles into the air that are dangerous to a person's health. The University of British Columbia research found that despite efforts to limit future emissions, the number of premature deaths linked to air pollution will climb over the next two decades unless more aggressive targets are set.

In India, a major contributor to poor air quality is the practice of burning wood, dung and similar sources of biomass for cooking and heating. Millions of families, among the poorest in India, are regularly exposed to high levels of particulate matter in their own homes. The study has been presented at the 2016 annual meeting of the American Association for the Advancement of Science.

ISRO orbiter to scan India's air for pollutants. The Space Applications Centre of ISRO and Space Flight Laboratory of University of Toronto Institute for Aerospace Studies are collaborating on developing the 'Next Generation Earth Monitoring and Observation and Aerosol Monitoring' (NEMO-AM) satellite. This is among IISRO's most important high-performance nano-satellite missions for the country. The nano-satellite will monitor suspended particles and aerosols that have made the air of major Indian cities like Delhi, Ahmedabad, Lucknow, Amritsar and Allahabad among the most polluted in the world.

The Times of India, 2 February 2016 | DNA, 15 February 2016 | The Times of India, 18 February 2016 | The Hindu, 23 February 2016

Water stress

80% of India's population faces severe water scarcity. About four billion people, or 66% of the global population, face severe water scarcity for at least one month of the year. And, of those people, nearly a billion are in India, according to recent study. If the number of people living under conditions of "moderate to severe water scarcity" for at least a month of the year is taken into account, then the number rises to 4.3 billion people, which is about 71% of the global population. The study published in international journal Science Advances is authored by Mesfin M. Mekonnen and Arjen Y. Hoekstra.

The study shows water shortages, one of the most dangerous challenges the world faces, is far worse previously than thought. The new research also reveals that 500m people live in places where water consumption is double the amount replenished by rain for the entire year, leaving them extremely vulnerable as underground aquifers run down. Many of those living with fragile water resources are in India and China, but other regions highlighted are the central and western US, Australia and even the city of London.

Number of months in which water scarcity > 100%

- 0
- 1
- 2 - 3
- 4 - 5
- 6 - 7
- 8 - 9
- 10 - 11
- 12
- No data
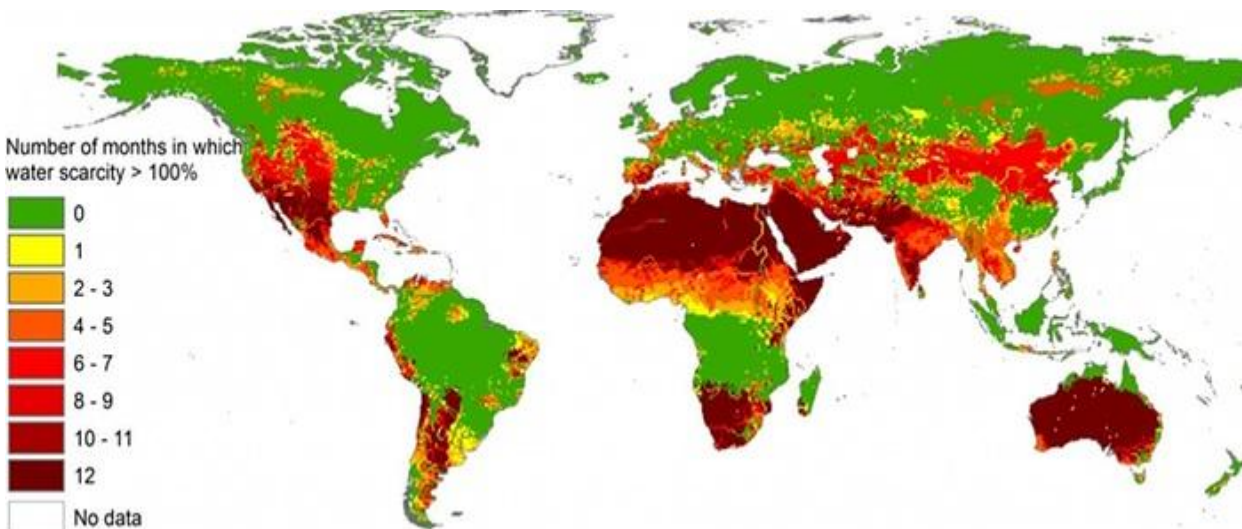
Source. The Guardian, 8 February 2016

It highlights that of the four billion people, one billion live in India and 0.9 billion in China—which means every second person in the world facing severe water scarcity for at least a month a year is from India and China.

CIMFR to make water potable in 25 mines. Extending its project on 'Development of cost effective mine water reclamation technology for providing drinking water' the Central Institute of Mining and Fuel Research (CIMFR) will be converting the mine water into potable or drinking water in 25 mines of various subsidiaries of Coal India Ltd. These include two mines of Western Coalfields Ltd headquartered in city. The institute had a technology to convert 4000 litres mine water per hour into potable water on continuous basis.

Jammu: Five wetlands vanished in 30 years. Five wetlands in the Jammu region have vanished in the last three decades, courtesy the failure of the Revenue Department and the wildlife authorities to demarcate wetlands of the region. Except a small patch at Gharana, close to the international border in RS Pura, some 22 km from the winter capital, water bodies at Pargwal (Akhnoor), once spread over 49.27 sq km, Kokerian (Gho-Manhasa), 27 sq km, Sangra, l0.68 sq km (RS Pura), and Nanga, 1.28 sq km (Ramgarh), have vanished without a trace. Due to the delay in demarcation, villagers have encroached upon the wetlands and filled them while the authorities have taken no action. At the Gharana wetland, still existent due to some efforts taken in the last one decade, villagers have constructed houses close to the wetland and use the water body for dumping sewage and other waste.

The Tribune, 3 February 2016 | The Guardian, 8 February 2016 | The Times of India, 12 February 2016

Water pollution

Eight central ministries join hands for the ambitious clean Ganga mission. The Union water resources ministry has signed a joint memorandum of understanding (MoU) with seven ministries to carry forward multi-sectoral activities for minimum three years to rejuvenate the river. Under the MoU, which was signed recently, the Ministry of Human Resource Development will facilitate IITs for developing and undertake pilot projects for implementing Zero Liquid Discharge (ZLD) system for four types of industrial pollution covering tanneries, chemical, pharma and textile industries. The Ministry of Ayush will take up promotion of medicinal plants in the Ganga catchment areas and ministry of youth affairs will involve sports persons to form young group to take up activities related to Ganga cleaning. Ministries of shipping, tourism, drinking water and rural development are also part of the joint MoU that will take up various Ganga cleaning activities around 21 identified action plans under the Namami Gange programme -- an integrated Ganga conservation mission -- which was allocated Rs 20,000 crore by the Centre for five years (2015-2020).

Online river water test demo begins. The Maharashtra Pollution Control Board (MPCB) has begun the demonstration project for the online water checking in the Godavari to check the river water pollution. The demonstration project is expected to give the board an idea of the problems they are dealing with and fill any gaps in the implementation.

DJB shuts 4 plants due to high ammonia levels. Water crisis in the city took a turn for the worse after Delhi Jal Board on 27 February shut operations in three treatment plants due to rising ammonia levels in Yamuna.

By 28 February night, four plants were non-functional, including the one at Dwarka, and the city was being supplied only 600 million gallons per day (mgd) against a normal supply of 900mgd.

Polluting units along Hindon shut. 42 industrial units have been closed down in six districts of Uttar Pradesh for polluting the Hindon, according to a report of an inter-departmental committee set up to rejuvenate the river. In fact, a total of 265 polluting industries— primarily dealing in fabrics, tannery, paper, sugar and distillery — have been identified by the committee. While 42 were asked to shut down, 218 others have been ordered to install effluent treatment plants to curb pollution, says the internal report.

The Times of India, 1 February 2016 | The Times of India, 15 February 2016 | The Times of India, 17 February 2016 | The Times of India, 29 February 2016

Urban growth & Waste management

6 towns work towards Swachh Bharat, initiate waste segregation to handle daily garbage. Six towns in Maharashtra, with a population ranging between 30,000 to 60,000, have shown that segregating dry and wet waste at source and constant counseling and vigilance can go a long way in maintaining a clean environment. The six towns— Lonavala, Shirur in Pune district, Sangola in Solapur, Deolali Pravara in Ahmednagar, Umred in Nagpur and Vengurla in Sindhudurg —will now be felicitated by the Directorate of Municipal Administration for showing progress in waste management. Three towns — Deolali Pravara, Vengurla and recently shortlisted Panchgani, in Satara — have also been shortlisted as successful models for 100 per cent solid waste management in the Swachh Bharat Abhiyaan from Maharashtra. The rest of the towns are in the process of achieving 100 per cent processing and transportation of waste.

Tamil Nadu, West Bengal invests on waste management projects. Tamil Nadu and West Bengal have utilized close to Rs 150 crore of the funds allocated to the states for setting up different waste management projects under the Swachh Bharat Mission.

Tamil Nadu has launched a waste-to-energy plant at Venkatamangalam, 20 km from Tambaram, Chennai. With an intake capacity of 300 metric tonnes per day, the Venkatamangalam plant can produce up to 20 MT of refuse-derived fuel per day, which they plan to sell to cement plants in the state. West Bengal, on the other hand, has allocated Rs 92 crore for setting up over 200 compactors across the state. State representatives confirmed that over 6000 MT per day of waste would be compacted through the compactors being set up.

East Delhi gets waste plant. Waste from construction sites will now be reused to make tiles and other building materials with East Delhi getting its first such recycling plant. Spread over 2.5 acres, the plant is a public private partnership between the East Delhi Municipal Corporation and Infrastructure Leasing and Financial Services (IL&FS).

Goverment plans SPV on PPP mode for creation of sewage plant. In a step for cleaning the Ganga, the Government is to set up the Special Purpose Vehicle (SPV) for Hybrid-Annuity

There will be a separate cell in the Department of Science and Technology to verify technology used by waste-to-energy plants before cities decide to handover waste management job to them.

based Public Private Partnership model for creation of Sewage Treatment Infrastructure under Namami Gange Programme shortly.

70% of urban India's sewage is untreated. In urban India, no more than 30% of sewage generated by 377 million people flows through treatment plants. The rest is randomly dumped in rivers, seas, lakes and wells, polluting three-fourths of the country's water bodies, according to an IndiaSpend analysis of various data sources. An estimated 62,000 million litres per day (MLD) sewage is generated in urban areas, while the treatment capacity across India is only 23,277 MLD, or 37% of sewage generated, according to data released by the government in December 2015. Of 816 municipal sewage treatment plants (STPs) listed across India, 522 work. So, of 62,000 MLD, the listed capacity is 23,277 MLD but no more than 18,883 MLD of sewage is actually treated. That means 70% of sewage generated in urban India is not treated. While 79 STPs don't work, 145 are under construction and 70 are proposed, according to the CPCB report Inventorization of Sewage Treatment Plants.

Visakhapatnam, Surat, Rajkot and Gangtok improve ranks to break into top 10. Mysuru, Chandigarh and Tiruchirappalli are the cleanest cities in India, according to a 73-city survey conducted to gauge the impact of Swachh Bharat Mission. The survey called *Swachh Survekshna* was conducted in cities with a population of 10 lakh and above. It has revealed that cities in the south and east have taken better to the Swachh Bharat Mission than cities in the north and west. The first survey was conducted in 2014, before the Mission was launched in October 2014.

TOP 10 CLEAN CITIES

CITY / AREA (STATE)
MYSURU (KARNATAKA)
CHANDIGARH (UNION TERRITORY)
TIRUCHIRAPALLI (TAMIL NADU)
NDMC (NCT OF DELHI)
VISAKHAPATNAM (ANDHRA PRADESH)
SURAT (GUJARAT)
RAJKOT (GUJARAT)
GANGTOK (SIKKIM)
PIMPRI CHINDWAD (MAHARASHTRA)
GREATER MUMBAI (MAHARASHTRA)

INDIA'S FILTHIEST CITIES

CITY / AREA (STATE)
DHANBAD (JHARKHAND)
ASANSOL (WEST BENGAL)
ITANAGAR (ARUNACHAL PRADESH)
PATNA (BIHAR)
MEERUT (UTTAR PRADESH)
RAIPUR (CHHATTISGARH)
GHAZIABAD (UTTAR PRADESH)
JAMSHEDPUR (JHARKHAND)
VARANASI (UTTAR PRADESH)
KALYAN DOMBIVILI (MAHARASHTRA)

Source. Hindustan Times, 16 February 2016

The Wire, 27 January 2016 | Indian Express, 15 February 2016 | The Economic Times, 16 February 2016 | Hindustan Times, 16 February 2016 | The Economic Times, 18 February 2016 | The Pioneer, 25 February 2016 | The Hindu, 29 February 2016 | The Times of India, 29 February 2016