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Solution for air pollution not implemented

Recommendations of IIT-K 10 months ago were ignored, informs **Alison Saldanha**

Ten months after the Delhi government accepted an Indian Institute of Technology Kanpur (IIT-K) studies that it had commissioned on air pollution, the main recommendations remain unimplemented. Instead, a government minister has put out a social-media petition requesting suggestions from citizens.

In a 334-page report, submitted to the Delhi government in January 2016, IIT-K recommended 28 measures over the next seven years to contain and reduce from source various pollutants fouling the Capital's air; 17 measures could begin immediately. The report should also be useful to the Centre, which has been given two days by the Supreme Court to suggest how the air quality crisis can be addressed, according to a Mint report.

If all the 28 recommendations are implemented, air quality will improve by anywhere between 30 percent to 100 percent, the study estimated. At least 19 of the 28 steps are not new to the Delhi government, found an *IndiaSpend* analysis of available government data sets on action taken to curb air pollution in Delhi since 2015, indicating that solutions were either ignored or not implemented.

These recommendations include:

▸ Prohibiting the burning of domestic waste
▸ Ensuring electric *tandoors* for restaurants with seating capacities of over ten persons;
▸ Stopping the burning of crop residue
▸ Careful handling and transportation of construction materials and debris
▸ Minimising the release of particulate matter into the air at concrete plants and regularly checking vehicular pollution.

The study, which did not recommend a restriction on

Delhi experiences the worst smog in 17 years

cars based on odd-even registration numbers, put forth a slew of longer-term measures to curb emissions from vehicles and industries -- some of which may begin in 2017.

Through the year, there was no debate and little action over the IIT-K recommendations and Delhi's Aam Aadmi Party (AAP) government only took emergency measures -- including closing down schools, shutting down a power plant, banning garden-waste burning and banning construction activity and diesel generators for 10 days except in hospitals and emergency situations -- when the air quality deteriorated in Delhi last week.

Instead, AAP Minister for Water and Tourism Kapil Mishra put out a social media petition on November 7, 2016, on Change.org, a social-media platform. "Pollution in Delhi has reached a point of being a Public Health Emergency. I have seen multiple petitions and appeals on Change.org to address Delhi's pollution crisis... I am keen to hear from you," read the petition. "Take two minutes to let me know your opinion -- What steps should the Delhi Government

take?" The petition came following reports that Delhi is experiencing the worst smog in 17 years, as mentioned in an *Indian Express* report. On November 2 and 5, the daily average levels of PM 2.5 pollutants in Delhi (fine particulate matter less than 2.5 microns in size) hovered over $700\mu g/m^3$ with some areas registering a 24-hour average of over $950\mu g/m^3$-nearly 40 times above the safe levels set by World Health Organization (WHO) --show data from our #Breathe network of sensors.

PM 2.5 is about 30 times finer than a human hair and poses the greatest risk to people. The particles can be inhaled deep into the lungs, causing heart attacks, strokes, lung cancer, and respiratory diseases. Their measurement is considered to be the best indicator of the level of health risks from air pollution, according to the WHO. Delhi Environment Minister Imran Hussain also urged Union Environment Minister Anil Madhav Dave the same day for a large-scale apportionment study -- identifying sources of pollution -- for the national capital region (NCR), by the Central Pollu-

tion Control Board (CPCB), to design anti-air pollution measures, a *Mint* report said.

This apportionment study, Comprehensive Study on Air Pollution and Green House Gases (GHGs) in Delhi, is -- as we stated -- already available with the Delhi government, its details reported by *IndiaSpend* in October 2016.

In winter, Delhi's primary sources of PM 2.5 pollutants, as identified by IIT-K, are: industries, especially thermal power plants, emitting secondary particles (25-30 percent of pollution), vehicles (20-25 percent), crop fires (17-26 percent), solid waste burning (7-8 percent), and, to a lesser extent, soil and road dust, as we reported.

New pollution-control measures: Old wine in a new bottle

Our analysis of Lok Sabha responses and websites of the Delhi Government show that the Central and state governments were already supposed to have carried out some of the measures that IIT-K suggested in its report, an indication of poor implementation.

While the CPCB banned the used of coal in restaurants and hotels in Decem-

ber 2015, burning garbage has been banned for more than a decade under the Municipal Solid Waste Management Rules of 2000. Construction dust, previously governed by the same law, is now addressed in the Construction and Demolition Waste Management Rules, 2016.

Meanwhile, a 2006 Environment Impact Assessment Notification regulates pollution from building activities and concrete plants, with laws for prevention, abatement, and air pollution, as a response to the Lok Sabha in December 2015 revealed. Similarly, efforts to check vehicular pollutants have been underway at Pollution Under Control (PUC) centres under a 2004 programme.

Among the new measures recommended in the report, the government has yet to buy machines that can vacuum major roads and spray water to settle the dust. Meanwhile, minister Mishra says 5,000 responses from citizens "In a single day Change.org received 600 petitions with respect to the Delhi smog," AAP Minister Mishra told *IndiaSpend*. "We felt that aside from the policy decisions the Government will take on this issue, it was time to reach out to the people and find out what are their thoughts on how to tackle this problem and what they can commit to individually." In less than one hour, his petition elicited more than 5,000 responses, said Mishra.

In the petition, Mishra said he and Hussain would personally look into the recommendations offered: "My commitment to you is that we will start working on the solutions being provided immediately." IANS

(In an arrangement with IndiaSpend.org, a data-driven, non-profit, public interest journalism platform, with whom Alison Saldanha is Assistant Editor. The views expressed are strictly those of IndiaSpend.)

Pollution: NGT puts in place emergency

The four-member NGT Principal Bench passed a detailed order, which is applicable in the NCR and the neighbouring states of Punjab, Haryana, Rajasthan and Uttar Pradesh

The National Green Tribunal (NGT) has put in place an emergency response system, to be called upon when pollution crosses critical levels. This emergency mechanism will include measures such as sprinkling of water over high pollution areas, and shutting down of construction and demolition activities, till the pollution levels dip.

The four-member NGT Principal Bench, headed by Justice Swatanter Kumar, passed a detailed order in this regard on Thursday, while hearing the Vardhaman Kaushik air pollution case. The order is applicable in the National Capital Region (NCR) and the neighbouring states of Punjab, Haryana, Rajasthan and Uttar Pradesh (UP).

The emergency response system will kick in when PM10 and PM2.5 (particulate matter smaller than 10 and 2.5 micrometers in diameter, respectively) cross the 431µg/m3 and 251µg/m3 marks, respectively. During such "emergency" periods, even thermal power plants, hot mix plants and brick kilns will have to be shut down temporarily, if their emissions are above the safe limits.

The NGT Bench stressed that the slew of orders it has passed in this matter will apply to all five states. These include preventing burning of paddy straw, curbing vehicular pollution from old diesel and petrol-run cars, checking burning of solid waste and dust pollution.

While passing the order, NGT Chairperson Justice Kumar said: "The Supreme Court of India had declared a decade ago that Article 21 of the Constitution has to be expanded to include the right to clean environment as a fundamental right. The state has a constitutional duty to protect the public health and to provide, at least, clean air to its citizens. The children of today have a right to breathe clean air and play in playgrounds."

Besides these short-term measures, the states also need to immediately kick off the process of managing paddy straw in the long term, said the NGT Bench. "States shall provide happy seeders or other machines for removal of agricultural residue and incentives should be provided to farmers to sell this residue to biomass plants and industries," the Bench added. Happy seeders are machines that can sow Rabi crop seeds without needing to take out the earlier crop's residue.

To enforce its various orders, the NGT also ordered constitution of a Central committee and state committees. The Central committee will comprise Union Environment Ministry Secretary as its Chairman, Chief Secretaries of Delhi, Punjab, Haryana, Uttar Pradesh and Rajasthan, Member Secretary of the Central Pollution Control Board (CPCB) and state pollution boards, Professor Mukesh Khare of IIT-Delhi and Additional Director General of Health Services as its members. This committee will supervise implementation of NGT's directions, especially with respect to burning of agricultural residue.

Under this Central committee, state-level committees comprising State Chief Secretary and Environment and Urban Development Secretary, will be formed to enforce the NGT directives.

IIT-Bombay to set up centres for teacher-training programme nationwide

http://indianexpress.com/article/education/iit-bombay-to-set-up-centres-for-teacher-training-programme-nationwide-4368842/

The proposal to build a 'Centre of Excellence for Online and Blended Learning and Educational Outreach' was tabled in an alumni meet held last month to invite financial contributions.

THE INDIAN Institute of Technology, Bombay, (IIT-B) is planning to set up a first-of-its-kind centre of excellence to train teachers across the nation on how to integrate technology in their teaching. Through a combination of online and offline learning methodologies, the institute plans to extend its existing teacher training programmes to over hundred million teachers.

The institute, which has already trained around 1.5 lakh engineering college teachers through its 'Train 10,000 Teachers (T10KT)' programme, now aims to extend the training to teachers from schools, colleges and vocational training institutes.

The proposal to build a 'Centre of Excellence for Online and Blended Learning and Educational Outreach' was tabled in an alumni meet held last month to invite financial contributions. The estimated budget to establish the centre is around Rs 100 crore.

While the other teacher training models of the institute are funded by the MHRD, the IIT-B has sought financial aid from its alumni association to set up the centre. The proposed centre will have three wings. While the research wing will conduct research in the field of education technology, the innovation wing will implement the research findings through projects.

The outreach wing will conduct massive teacher training programmes through a combination of methodologies.

"We have been providing training to teachers of engineering colleges since 2009. With our experience, we feel there is scope to extend the training to teachers from schools, high schools, and Industrial Training Institutes," said Deepak Phatak, professor in the computer science and engineering department.

He said the centre will mimic the T10KT — a four-week model where teachers are taught through pre-recorded videos, live-streamed lectures from the IIT-B, Massive Open Online Courses (MOOCs) and workshops. Phatak, who has been spearheading the T10KT and other projects launched under the MHRD's National Mission on Education Technology through ICT, said there was an urgent need to improve the skills and teaching methodologies of teachers, particularly in remote locations.

"The teachers don't have to physically come to Mumbai for the training, they can complete part of the training at home and part of it at the nearest remote centre," said Phatak.

The teachers will also be evaluated throughout the training process. The centre will be beneficial for teachers in rural areas, said Sandeep Gund, a primary school teacher in Pashtepada in Thane district. He, however, pointed out that many teachers in rural India do not have access to internet or gadgets. "Such a training course will be beneficial only if access to technology increases," said Gund.

IIT-Madras faculty members welcome govt's war on black money

http://timesofindia.indiatimes.com/city/chennai/IIT-Madras-faculty-members-welcome-govts-war-on-black-money/articleshow/55347728.cms

CHENNAI: A group of IIT-Madras faculty members have welcomed demonetisation of Rs 1,000 and Rs 500 currency notes, saying the move will lead to reduction in creation of new black money and go a great distance in freeing the nation from corruption.

A statement issued by IIT-M faculty members on Friday said black money, which is believed to be as much as 25% of nation's GDP, has even affected the education sector "with college seats being sold left and right."

"Many citizens, including many amongst us, who earn money legally and pay taxes, face the brunt of its impact. Bank notes in circulation have been increasing rapidly over the last five years, growing as much as 40% and contributing to inflation. We, therefore, welcome the government's war on black money by making the existing currency notes of Rs 500 and Rs 1,000 invalid," the statement said.

It the total cash in circulation in the form of these two sets of notes is believed to be around Rs 14 lakh crore. Even if 20% of this amount (Rs 2.8 lakh crore) is not deposited in banks over the next two months, the Reserve bank of India could write this off. The nation would have a much stronger economy, it said.

"The move will also push the nation towards a cashless society with electronic money, which would be traceable, and lead to reduction in creation of new black money," it said.

All those who have earned money through legal means would lose nothing even though they might face some hardships for a few days, the statement said.

Scientists working on solution to deal with Drones Threats

http://timesofindia.indiatimes.com/home/science/Scientists-working-on-solution-to-deal-with-Drones-Threats/articleshow/55357740.cms

BENGALURU: The threat perception is real. Late in 2015, the Intelligence Bureau (IB) had issued alerts of drone attacks in Delhi. Last month, Mumbai airport was put on high alert after a pilot spotted an unmanned aerial vehicle (UAV), popularly called drone.

But agencies in India don't have a concrete solution. Unlike shooting down an enemy fighter aircraft over no man's land, bringing down a drone using fire power in cities isn't an option. Also, that there can be no 'hot pursuit' (where a missile follows a target emitting carbon or thermal energy) with these vehicles not emitting any carbon, poses a challenge.

A technological solution, thereby, is the only option and scientists from the Indian institute of Science (IISc) and the National Institute for Advanced Studies (NIAS) in Bengaluru, including noted scientist and former member of the Scientific Advisory Council to Prime Minister, Prof Baldev Raj, are trying to develop the same.

From ways of trying to intercept the drones and bring them down using, what one scientist termed "anti-drone" drones, to building a system that can remotely identify these objects, a host of ideas are on the drawing board.

The scientists are keen on developing a system using that could remotely identify the flying objects using electromagnetic waves—UAVs piloted remotely use radio waves (invisible electromagnetic waves) for control— and then either disabling them or, safe-land them.

Confirming the developments at IISc and NIAS, Additional Director General Police (crime and technical services) Bhaskar Rao, said: "Drones are increasing in numbers, becoming a serious concern across India. Therefore, we thought that an early solution needs to be available with us given the growing threat perception. The scientists, have committed to finding us a solution after a two-day meet."

The DGCA's draft regulation on UAVs has remained on paper for more than two years now, with the local police still dealing with the issue in an ad hoc manner. Rao said, the punishment for flying a drone without permission now is only a negligible fine.

A senior intelligence officer said: "The issue is that you can assemble a drone using materials available in the open market here. And mounting of payloads (sensors used for surveillance or something that could strike) is also not too difficult. We need to know how to ground these things without collateral damage."

He also pointed out that these objects are still classified as toys that can be checked in and brought into the country. "A lot of these things are brought in from China and southeast Asia. As long as it is in the right hands, the concern is only of

them flying in areas they shouldn't by mistake. But there is almost no certain way of knowing who is flying this and from where (immediately)."

One scientist, who did not want to be named said: "In the future, once drone usage is regulated, we could even insist that all manufacturers need to use a Radio-frequency identification (RFID) chip and register them with security agencies."

Problems:

* No. of Drones are increasing
* Threat alerts have already been issued more than once in India
* Unorganised manufacturing market, easy import pose challenges
* No regulation to deal with operations

Way Ahead:

* Scientists in Bengaluru are working on a technological solution

* Use of electromagnetic waves to intercept

* Using 'anti-drone' drones to bring down objects

* A system that could remotely detect & safe-land rogue drones

* RFID chips in a post-regulation scenario

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■ A board meeting in progress

SHUTTERSTOCK

New chapter in the boardroom battle: B-school textbooks

Himani Chandna

■ himani.chandna@hindustantimes.com

NEW DELHI: India's biggest boardroom battle has now found its way into the textbooks for management graduates.

The unexpected removal of the company's first non-Tata chairman, Cyrus Mistry, last month took everyone by surprise. Following Mistry's ouster, Tata Sons has become a part of the programme under the branch of family businesses and organisational complexities for leading business schools in India, including Indian Institute of Management (Bangalore and Calcutta), Indian School of Business, MDI Gurgaon and SP Jain Institute of Management and Research(SPJIMR).

"Not just industry watchers, but business schools are also trying to decode the complexities involved behind such crucial organisational decisions," said Lata Dhir, professor for organisational behaviour and leadership, SPJIMR. The institute will inaugurate a session on a case study—Decoding of Organisational Complexities: The Unfolding of the TATA Saga—at its college campus on Friday. "We have introduced the case study on Tatas as a part of subject called organisational behaviour," Dhir said.

While it is a normal practice for colleges to update textbooks with live case studies, popular corporate events such as the Satyam Computers scam, the division of the Reliance group between Mukesh and Anil Ambani, and the Vijay Mallya case, have been the big examples.

In the Tata-Mistry scuffle, the lesson will be on 'how strong governance principles and processes could be when some of the key stakeholders have fundamental differences on one or more areas'.

"Power and politics in the boardroom is another possibility. Succession management is a big challenge in both family and non-family businesses and Tata Sons seems to provide a great discussion platform," said Kavil Ramachandran, executive director, family enterprise, Indian School of Business. "There could also be a chapter on limits in roles of owners and managers in a multi-generational family controlled business."

MDI Gurgaon plans to incorporate the learnings from the Tata-Mistry row in its classroom teachings at both levels — post graduate programme and executive education. "These will be covered under strategy area, dealing with issues of corporate governance, leadership, organisational vision and mission, succession planning, mergers, acquisitions and restructuring," said Veeresh Sharma, chairperson, strategic management area.

According to colleges, the teaching methodology will be divided into two parts. "Initially it would consist of vignette analysis and discussion, informed commentary and critique. After some time once enough material is available, the same would be developed in a case, which can be used for classroom discussions," Sharma said.