



# KOLKATA'S AIR QUALITY

## NAVIGATING SOLUTIONS

**Summary of outputs from engagement  
session on Thursday, September 15, 2016**

**Collated by :**  
**banglanatak dot com**  
**Global Change Programme**

**Hosted by :**  
**U.S. Consulate General, Kolkata**  
**at American Center, Kolkata**



## **Background**

Kolkata is among the very few cities that have fought protracted legal battles to build support for pollution control measures. Strong civil society movements, strictures from the court and executive action have led to a strong anti-pollution lobby. In 2009, the city succeeded in phasing out very old commercial vehicles including three-wheelers, taxis and many old buses. These were replaced with cleaner LPG models. The city also moved to the next rung of emissions standards of Bharat Stage IV in 2010.

According to a Union government report, more people died in Bengal from acute respiratory infection than in any other state every year from 2009 to 2014. Experts associate the deaths with rising air pollution in Kolkata and surrounding areas. – Times of India reported.

A study by a prominent cancer institute (Chittaranjan National Cancer Institute – CNCI - [cnci.org.in](http://cnci.org.in)) in India has concluded that around 70% of Kolkata residents suffer from respiratory disorders caused by air pollution. – The Telegraph reported.

Despite the results from research reports and available hard data highlighting the adverse impact of air pollution on human health, there is a lack of awareness among Kolkata's citizens on this issue. There is a need to widely disseminate this information to raise public awareness and coordinate efforts to build consensus among the city stakeholders to address the problem.

In recent years the Government of West Bengal, businesses, civil society, and academics have taken important steps to address poor air quality and its impacts. The debate on air quality issues has also changed paradigm from pointing to the problems to identifying solutions. Multi-pronged action by multiple actors is needed to bring the desired change.

To create a platform for navigating the solutions and participatory planning of the way forward, a workshop was organized on Thursday, September 15, 2016, by the U.S. Consulate General Kolkata, in partnership with [banglanatak dot com](http://banglanatak.com), a social enterprise specializing in communication for development and the Global Change Program at Jadavpur University.

Working sessions provided all the workshop participants opportunity to express views and offer solutions. The following sections provide the summary of outputs from these sessions.

## **Answer to Question 1**

### **What is the desired scenario (outcome and timeline) in relation to Kolkata's current air quality indicators?**

#### **Desired Scenario and Timeline.**

There was unanimity among participants that they wish to live in the city in five year's time run with good air quality or at least in short run may be in moderately clean air. The participants in general identified the current situation as bad with variation in perception of how bad for many indicators and some indicators still show sage and moderate level. However, everybody was aware about seasonality in Kolkata's air quality level and variation across winter and monsoon seasons.

All felt that the expected improvement in air quality can definitely be achieved through strategic actions in phased manner. However, expectation is visible improvement might be observed in two (2yrs.) –five (5yrs) years' time period with strategic steps implemented. Scores assigned in five point scale (0- unbreathable; 1- worst; 2-very bad; 3-bad; 4-moderate; 5- good) did reflect the expectations.

#### **Participants were engaged in working sessions by diving in four mixed disciplinary groups to elicit the knowledge they have on three major questions:**

1. Why Air quality is bad?
2. What can be done?
3. Who can do what?

Answers we got are very rich shows the preliminary information that they have and also some knowledge gaps have been identified. Very interestingly very focused knowledge could be collated through the engagement session.

#### **Q.1 Why?**

##### **Air quality Indicators and what is the cause behind bad air quality in Kolkata?**

The participants identified two kinds of indicators :

Indicators –type 1 and cause	Lack of green cover, bare land,	Biomass Cook stoves/ coal burning	Domestic Generator Exhaust	Cigarette Smoke	Industrial Emission	Industrial Process	Emission from diesel and petrol	Waste/ refuse burning	Construction dust and waste	Agriculture
Suspended Particulate Matter (SPM)	✓	✓		✓	✓		✓	✓	✓	
Particulate Matter 10 (PM10)	✓	✓		✓	✓	✓	✓	✓	✓	
Particulate Matter 2.5 (PM 2.5)	✓	✓		✓	✓	✓	✓	✓	✓	
Nitrogen Oxide (NOx)		✓	✓	✓		✓	✓			
Carbon Mono Oxide (CO)		✓					✓			
Sulphur Oxide (SOx)			✓		✓	✓	✓			
Arsenic (As)						✓				
Lead (Pb)							✓			
Nickel (Ni)							✓			
Furan						✓		✓		
Dioxin						✓		✓		
Persistent Organic Pollutants (POPs)										✓
Benzo(a)pyrene (BAP)						✓		✓		
Ammonia (NH3)						✓	✓	✓		
Volatile Organic Compounds (VOCs)						✓	✓	✓		
Polycyclic Aromatic Hydrocarbons (PAH)						✓	✓	✓		
Benzene		✓								

**Indicators type 2: Symptomatic Health indicators**

**Human Health & Well being**– Respiratory problems like asthma, shortness of breath, reduced lung capacity, allergy, headache, eye and skin irritation, cough, Chronic Obstructive Pulmonary Disease (COPD), Loss of productivity due to lack of quality sleep and lack of fresh air

**Property health indicator** – Black dust accumulation

## Answer to Question 2

### What can be done to improve the city's air quality?

Participants came up with very useful alternatives which shows many things can be done which can bring in new investment, new economic activity, employment generation.

Cause	Lack of green cover, bare land, road dust	Biomass Cook stoves/ coal burning	Domestic Generator Exhaust	Cigarette Smoke	Industrial emission	Industrial Process	Emission from diesel and petrol vehicle	Waste/ refuse burning	Construction dust and waste	Agriculture
<b>AQ Indicators</b>	PM	PM, Nox, CO, Benzene	NOx, SOx	PM, NOx	PM, SOx	PM, SOx, As, Furan, Dioxin, BAP, NH3, VOC, PAH	PM, NOx, SOx, CO, Ni, Pb, NH3, VOC, PAH	PM, Dioxin, Furan, BAP, NH3, VOC	PM	POP
<b>Solution space</b>										
<b>Increase of green cover</b>	✓				✓	✓	✓	✓	✓	
<b>Improvement of vehicle fuel quality</b>			✓		✓		✓			
<b>Replacement of diesel with CNG</b>			✓		✓		✓			

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<b>Maintenance of vehicle</b>							✓			
<b>Reduction in road congestion</b>							✓			
<b>Phasing out of non BS4 vehicle</b>							✓			
<b>Fast introduction of BS6 vehicle</b>							✓			
<b>Restricted use of private car</b>							✓			
<b>Promoting use of public transport &amp; improving quality of public transport</b>							✓			
<b>Increase no. of PUC through enhanced enforcement</b>							✓			
<b>Electric &amp; hybrid vehicle</b>							✓			
<b>Dust screen</b>									✓	
<b>Water Sprinkler</b>	✓	✓			✓	✓			✓	
<b>Regulation on construction material handling on road side</b>	✓								✓	

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<b>Awareness raising in construction sector</b>									✓	
<b>Improved building construction process with pre-fabricated and mechanicals means of construction</b>									✓	
<b>Change of road construction process through regulation- “no ‘in-situ’ tar preparation”, more asphaltting, concrete road</b>	✓								✓	
<b>Maintenance of roads, construct long lasting roads</b>									✓	
<b>Road binders</b>	✓								✓	
<b>Integrated solid waste management, waste segregation, reduce refuse burning, introduction of VAM</b>							✓			



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<b>Strict check on emission/ emission certificates</b>					✓	✓	✓			
<b>Replacement of coal with solar cook stove</b>		✓								
<b>Regulation and enforcement on unplanned urbanization with more open space</b>	✓	✓						✓		
<b>Non road emission reduction (port, marine, residential)</b>										
<b>Restoration of polluted canals</b>	✓							✓		

### Answer to Question 3

#### Who should do long listed actions?

Very interestingly participants used logic of rights and responsibilities and identified various actors who can take up actions at own initiative, collective initiative and create a positive movement in next couple of years through five years to restore Kolkata’s air quality.

	Individuals / citizens	House owners/housing society	Local clubs	Informal eateries, settlements	TV channels	News papers	Bloggers group	Social media	Doctors / health organizations	Academic institutions	Research community	Corporates	Urban planners	Environment practitioners	Financial Institutions	Environmental engineers / technology developers	NGOs e.g Green Rhino	Private vehicle user	Transport corporation	Road transport corporation	Builders and construction company	industries	CPCB	WBPCB	KMC	KMDA	PWD	WBPDCL	CESC	Power Department	Industry Department	Education Department	transport Department	Health Department	Judiciary		
Increase of green cover	√	√	√							√		√	√	√			√								√	√											
Improvement of vehicle fuel quality					√	√	√	√			√			√		√		√	√	√			√	√										√			
Replacement of diesel with CNG	√																						√	√										√		√	

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Dust screen																					√				√	√									
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Non road emission reduction (port, marine, residential)	√	√																																
Restoration of polluted canals								√																										√
Develop awareness and understanding on Air Quality Indicators and data					√	√		√																										
Reduce cigarette smoking	√							√																										



## Participants List

1	Amit Datta	Department of Civil Engineering, Jadavpur University
2	Anandi	94.3 Radio FM
3	Ananya Bhattacharya	banglanatak dot com
4	Andrew Posner	U.S. Consulate General Kolkata
5	Andrew Ryan	U.S. Consulate General Kolkata
6	Anjan Roy	West Bengal Power Development Corporation
7	Anupam Debsarkar	Department of Civil Engineering, Jadavpur University
8	Arindam Dutta	IISWBM
9	Arup Mitra	U.S. Consulate General Kolkata
10	Avijit Hazra,	Dy. General Manager, Generation Division, CESC Ltd.
11	B.Chattopadhyaya	Coal India Limited
12	Craig Hall	U.S. Consulate General Kolkata
13	Deepa Datta	U.S. Consulate General Kolkata
14	Deepanjan Majumdar	NEERI
15	Devdyuti Basu	Global Change Program
16	Dharitri	94.3 Radio FM
17	Dipanajana Maulik	Environment Department, GoWB
18	Diti Mookherjee	Association for Social & Environmental Development
19	Duke Ghosh	Global Climate Change Program
20	Greg Pardo	U.S. Consulate General Kolkata
21	Haimanti Poddar	Climate Change and Energy, BDHC
22	Himadri Guha	Mas Construction Pvt. Ltd. & Visiting Faculty, JU Civil Engg, Architecture & Construction Engg, Department
23	Himadri Sarkar	Ei Somoy
24	Jayanta Basu	The Telegraph
25	Jayanta Roy Chowdhury	Emami Group of Companies
26	Jhumoor Biswas	IISWBM
27	Jonathan Ward	U.S. Consulate General Kolkata
28	Joyashree Roy	Global Change Program, Jadavpur University
29	Kuntak Chatterjee	Anandabazar Patrika
30	Mitali Dasgupta	Surendranath college/Manidramohon college
31	Mrittika Mukherjee	FICCI West Bengal State Council
32	Namit Shah	Consulate of the Netherlands
33	Nandini Das	Global Change Programme, Jadavpur University
34	Nicola Wong	U.S. Consulate General Kolkata
35	Pallavi Paul	BSR & Co. LLP
36	Partha Pratim Roy	Calcutta Medical College

37	Poulomi Satpati	Ecodia Projects Control Pvt.Ltd
38	Pradeep Kumar	Symbio Greentech Pvt. Ltd
39	Prasenjit Gupta	U.S. Consulate General Kolkata
40	Prof. Alope Gopal Ghosal	Indian Chest Society/ National Allergy Asthma Bronchitis Institute
41	Rajeev Sharma	U.S. Embassy, New Delhi
42	Reema Banerjee	Centre for Environment Education
43	Rita Saha	Central Pollution Control Board
44	Sahana Ghosh	IANS
45	Saibal Saha	En Simulated Solutions LLP.
46	Saibal Thakurata	Urban Development Department, Govt of West Bengal
47	Sameek Ghosh	U.S. Consulate General Kolkata
48	Samirendu Dutt	Esspee Commerce
49	Samsun Nabi	Symbio Greentech Pvt. Ltd
50	Sangita Deychanda	U.S. Consulate General Kolkata
51	Sayantani Raychaudhuri	banglanatak dot com
52	Shakti Saha	NEWS
53	Shalini Majumdar	banglanatak dot com
54	Subham Chakroborty	Hindustan Times
55	Subhro Niyogi	The Times of India
56	Sudip Chatterjee	Yes Bank
57	Sudipto Chowdhury	PTI
58	Tapan Bhattacharyya	ASSOCHAM
59	Tapan Gooptu	Concern for Kolkata
60	Tarun Guha	Energy India
61	Vid Nukala	Office of Global Affairs, U.S. Department of Health and Human Services, U.S. Embassy, New Delhi
62	Vidisha Basu	Energy India
63	Vikash Jain	Yes Bank