



Office of the Principal Scientific Adviser  
to the Government of India

Science & Technology Cluster



## Project **SAMEER**

### Solutions for **Air-Pollution Mitigation** through **Engagement, Engineering & Research**

#### Sustainable Air Quality Workshop:

Towards Enhancing Understanding of the Educators on Air Pollution and Mitigation Measures



7-8th November 2022



9:30 AM to 5:00 PM



Senate Room, IIT Delhi, Hauz Khas

#### Coordinators

**Mr. Hemant Kaushal**

CERCA, IITD

**Ms. Priyanka Saini**

CERCA, IITD

**Dr. Rajni Kaushik**

Deep-C, DRIIV

**Mr. Anurag**

Deep-C, DRIIV

**Dr. Vijeta**

Deep-C, DRIIV

**Ms. Anugraha Arun**

Ashoka University

**Attendees: School Teachers (Grade 7-12)**

A journey to **"de-smog"** The National Capital Region



## About the Workshop

This workshop is part of project SAMEER (Solutions for Air-pollution Mitigation through Engagement, Engineering, and Research). SAMEER is a pilot to address the air pollution problem of Delhi NCR through multi stakeholder collaboration across industry, academia and government bodies and technology interventions (<https://www.driiv.co.in/air-pollution-pilot/>).

This initiative is being led by **DRIIV, Delhi Research Implementation and Innovation** (an initiative of the Principal Scientific Adviser to the Government of India) and **Arun Duggal Centre of Excellence for Research in Climate change and Air Pollution (CERCA)**. The workshop is being conducted by DEEP-C (Delhi Effective Education Pedagogy Cluster), the Effective Education vertical of DRIIV.

This workshop on "**Sustainable Air Quality**" is the second workshop in this series for teachers of 7-12 grade students who teach air quality. In order to gain a better understanding of air quality and related issues, educators teaching grades 7-12 are invited to participate in the workshop, which will involve:

- ✓ **Hands-on activities to provide insight into air quality**
- ✓ **Group discussions on air pollution's health effects**
- ✓ **Interactive sessions to build lesson plans to contribute and enhance educator's classroom preparation**
- ✓ **Fun with Gamification and other innovative pedagogical tools for effective integration of sustainability education in mainstream curriculum.**

A key motivation of this initiative is to connect educators with air quality experts, technology partners, regulators, and scientists. Consequently, they will benefit by

- ✓ **Establishing a network of their own for information and awareness pertaining to air quality to build inclusive resources accessible to all**
- ✓ **Gaining skills in gamification and carbon footprint calculators to cater for different learning styles and learning needs**
- ✓ **Developing creative lesson plans for the curriculum mapped to topics to meet teaching requirements**
- ✓ **Learning about sustainable solutions to control air pollution & assessing the implementation strategies towards reduction in air pollution.**





## Agenda

### ✓ Day 1: 7th Nov 2022; Location - Senate Room

**9:30 – 09:35 am** Welcome Note **by Hemant Kaushal, CERCA, IITD**

**9:35 – 09:45 am** Opening Remarks **by Shipra Misra, CEO & MD, DRIIV**

**9:45 – 10:30 am** Introduction on how schools/ educators/ Students can participate and influence policies on air quality/citizen responsibilities by students.

Followed by: Interactive Session on role of Schools and Educators in integration of sustainability education in mainstream curriculum – specific case studies on Air Quality **by Mr. Shriyans Chaturvedi** and **Mr. Mahesh Kumar, Earthwatch Institute India**

**10:30 – 10:45 am** Tea/Coffee Break

**10:45 – 11:00 am** Sustainable Solutions towards Air quality Management **by Prof. Vikram Singh, IITD**

**11:00 – 11:15 am** Air Quality components and its measurements **by Dr. Pratima Gupta, IITD**

**11:15 – 11:30 am** Air Quality measurement devices and data Dashboards **by Namita Gupta, Airveda**

**11:30 – 12:30 am** Is Air Pollution Shortening Our Lives? **by Mr. Ashirbad S Raha, EPIC India**

**12:30 – 1:00 am** Q & A/ Discussion

**1:00 – 2:00 am** Lunch

**2:00 – 2:30 am** **Hands-on** Carbon Footprint Calculation **by Mr. Jagmohan, IITD**

**2:30 – 3:00 am** Microbial Risks in Indoor Air Quality Systems **by Dr. Nimish Shah, IAPMO India**

**3:00 – 3:15 am** Tea/Coffee Break

**3:15 – 5:00 am** **Group activities** on H.A.W.A (Health and Air Pollution Widespread Awareness) through educators **by Tulika and Dr. Mitali, Lungcare Foundation**



## ✓ Day 2: 8th Nov 2022; Location - Senate Room

Welcome note by **Mr. Hemant Kaushal**

**09:30 – 10:00 am** Opportunities for CERCA and Schools for collaborative planning and participation towards improved air Quality **by Prof. Sagnik Dey, IITD Delhi**

**10:00 – 10:30 am** Social & Behaviour Change: Nudging to Action **by Dr. Sunaina Dua, Lady Irwin College**

**10:30 – 10:45 am** Tea/Coffee Break

**10:45 – 12:35 pm** **Group Discussion:** Tool kits/lesson plan/creative ways of teaching with focus on topics (annexed) followed by: Interactive session on the topics from mapped curriculum.  
**by Dr. Anuradha Shukla, Mr. Shriyans Chaturvedi and Mr. Mahesh Kumar, Earthwatch Institute India**

**12:35 – 12:45 pm** International collaborations/school programs opportunities for school teacher/ students projects in air quality **by Dr. Anuradha Shukla, Earthwatch Institute India**

**12:45 – 1:00 am** Influence of air quality on Water Quality **by Dr. Rajni Kaushik**

**1:00 – 2:00 pm** Lunch

**2:00 – 2:30 pm** **Hands-on:** Air pollution best practices using mixed reality (Augmented Reality) **by Karan Rao, Swachh io**

**2:30 – 3:00 pm** Startups or Tech providers in air quality **by Karan Rao and Ravi Kaushik**

**3:00 – 3:15 pm** Tea/ Coffee Break

**3:15 – 3:25 pm** Recap the 2 days (Reading of Report/ Summary) **by Mr. Anurag Saini & Ms. Anugraha Arun**

**3:25 – 3:35 am** Concluding Remarks & Way forward **by Prof Jyoti Sharma, DEEP-C**

**3:35 – 4:05 am** Feedback sharing session **by Participants/ Filling Feedback forms**

**4:05 – 4:10 am** Vote of Thanks **by Dr. Rajni Kaushik**

**4:10 – 4:30 am** **Give away:** Providing Toolkit/ Token of Appreciation/ Group Photographs





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## Annexure

1. Meaning of air pollution
2. How does air get polluted?
3. Effects of air pollution
4. Case study on Taj Mahal
5. Greenhouse Effect
6. Measures to control air pollution

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1. Process of obtaining different gases from air

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1. Breath of Life (Air)
  2. Role of atmosphere in climate change
  3. Air Pollution (reasons, Smog, etc)
  4. Degradation of air quality
  5. Human activities for air pollution

1. Ozone Layer
2. Management of garbage we produces

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1. Solar Radiations
  2. Insolation at the Surface of the Earth
  3. Heating & Cooling of Atmosphere
  4. Budget Heat of Earth

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1. Environmental Pollution
  2. Atmospheric Pollution (Gaseous air pollutants, Particulate pollutants, Stratospheric pollution)
  3. Global Warming
  4. Greenhouse Gas effect

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1. Air pollution and its control
  2. Electrostatic precipitator
  3. Controlling Vehicular Air Pollution (A case study of Delhi)

Project

# SAMEER

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