

## Cleaning the Air: Multilevel Action for Change

In his opening remarks, Dr. Ajay Mathur, Director-General, TERI, described his deep concern over air pollution and how it bothers each one of us and how we could pursue it with diligence and in a scientific manner. He elaborated the air pollution scenario of Delhi/NCR and discussed, in brief, the statistical knowledge of various sources of air pollution in this region. He stressed upon the urgent need of the hour to mitigate air pollution, as our lives depend upon it. He shared that 35% of the pollution in Delhi/NCR is from the outside sources. The biomass used in chulhas to cook in rural areas is the major source of trans-boundary pollution.

The introductory session was made by Dr. Sumit Sharma, Director, Centre for Environmental Studies, TERI, who welcomed the participants and briefed them about the air quality scenario, major pollution contributing sources and activities. He stated that air pollution is a complex regional problem that is also subject to hemispheric and even global influences. Particulate Matter (PM) concentration has increased in many cities and they do not follow the prescribed standards. These cities mainly represent the Indo-Gangetic plain. Among all these cities, Delhi is leading the pace. PM pollution has deteriorating impacts which involve loss of agricultural productivity, premature deaths, impact on cultural heritage, changing regional climate which all leads to economic loss and briefed them about the air quality scenarios, major pollution contributing sources and activities.

Dr. Prashant Gargava, Member Secretary, Central Pollution Control Board (CPCB), spoke on the recently launched NCAP report, which said that there are still many challenges which need to be faced, like – inadequate monitoring network, difficulty in securing stakeholder's support etc. He pointed out the inefficiency of different measuring techniques and instruments, which give varying results on ambient concentration in the same location – primarily because of incorrect flow measurement and calibration. He emphasized the need to develop our own indigenous based model for source apportionment studies. Moreover, inconsistent power supply and voltage fluctuation affect monitoring. He further underscored the need for augmenting air quality networks, their implementation approaches and revisiting and revamping our monitoring requirements along with assessment of the regional air quality. Besides, he stressed that we need to separately address the regional and trans-boundary aspects of air pollution, along with a focus on the required evolution of the present air pollution interventions and plans. It was also pointed out that there is a need to develop a mechanism on how localities should address the impact of international pollutant transport in air quality planning.

Frank Kelly, Professor, Kings College, London, described how in 1952, the disaster of London Smog took place because of technological development which was totally dependent on coal. He described how geographical and topographical configuration of a region plays a major role in determining the pollution scenarios. Increase in private vehicles became a major source of Nitrous Oxide emissions, which was also one of the major reasons for air pollution in London. Source Apportionment studies show that two-thirds of the city's pollution is created by vehicles alone, which are still running on conventional fuels. To curb

the issue of pollution in London, various mitigation strategies were incorporated. There was emphasis on the need of assessment of network optimization and short term reduction targets implemented at a local level. Some of the policies focused in London are Congestion Charging Scheme, London Low Emission Zones and London Ultra Low emission Zones which helped the authorities in controlling air pollution and conferred immense economic benefits on the government.

There was some preliminary retaliation from the citizens against the increased taxes but later they understood the need for the tough measures and supported the cause.

Other such initiatives include – double decker buses which will be hybrid, hydrogen based or electric from 2018 onwards, zero emission capable licensing for taxis i.e. issuing license to only those taxis which are run on non-conventional fuels. These major step towards abating pollution from the transport sector have been beneficial.

He Kabin, Prof, Environmental Engineering, Tsinghua University, China, opined that evidence-based decision making and prioritizing actions towards majorly contributing sectors is the need of the current scenario. He emphasised on the scientific studies which are required for identification of major sources of air pollution, and their contribution to the ambient air quality of a region - which were adopted as sector specific strategies to control the pollution in China. He gave statistical analyses of the various measures taken to control air pollution in China. He mentioned how the shift from conventional to non-conventional fuels helped them control Sox & NOx (Sulphur and Nitrogen Oxides) and PM10 emissions for the last 10 years.

Earlier, China adopted three strategies for devising air pollution policies – which included energy structure adjustments, industrial structure developments with major focus on emissions reduction projects. Unfortunately, there has only been a slight improvement in the air pollution scenario of China, and a lot of work is still required to be done in this aspect.

Ailun Yang, Director of Global Air Pollution, Environment Program, Bloomberg Philanthropies, shared her ideas on the need for drawing on international experiences. Awareness of country specific international experiences, together with government and institutional initiatives on public awareness will go a long way in mitigating air pollution.