

Spotlight: CSTEP

FEBRUARY 27, 2018

The Center for Study of Science, Technology and Policy (CSTEP (<http://www.cstep.in>)) is an Indian not-for-profit research organisation incorporated in 2005 u/s 25 of The Companies Act, 1956. As one of the largest think tanks in South-East Asia, its mission is to enrich policy-making with innovative approaches, using science and technology for a sustainable, secure and inclusive society. CSTEP has grown to become a multi-disciplinary policy research organisation in the areas of Energy, Infrastructure, Materials, Climate and Security Studies. Recently, they have started work on air pollution in Bengaluru, Karnataka and are in the process of developing new projects.



Anirban Banerjee, Dr. Pratima Singh , and Arijit Chanda (from left)

A short Q and A with Dr. Pratima Singh, a research scientist CSTEP who is leading the AQ work:

Can you tell us what CSTEP is?

The Ministry of Science and Technology, Government of India, has recognised CSTEP as a Scientific and Industrial Research Organisation. CSTEP has emerged to be one of India's well-regarded think tanks, over the last ten years. Our approach to policy research is quantitative, objective and computation intensive. In a short period, CSTEP has established robust research groups in Energy and Climate Studies, Urban Infrastructure, Water Studies, Materials Research and Governance. In addition to this, CSTEP has built multi-disciplinary research capacity including economists, policy specialists, social scientists, IT experts, etc., to ensure that research incorporates social and economic perspectives to scientific solutions, in order to have meaningful outcomes and lasting impact.

CSTEP's research aims at and explores science and technology enabled policy options, for inclusive and equitable economic growth. It looks at using newly emerging technologies for social and economic development. The Government of Karnataka has recognised CSTEP as a Technical Resource Institution.

How (and why) did the organization decide to work on air pollution?

Ambient air quality of Bangalore city has changed over the last few decades with increasing population and rapid growth in transportation, industry and commercial sectors. The number of activities related to construction, waste management and vehicular traffic has also increased. These changes are reflected in Bengaluru's air quality levels. Recent Central Pollution Control Board's (CPCB (<http://cpcb.nic.in>)) Air Quality (AQ) data shows that the city's AQ index has exceeded the threshold limit at various locations in the city. While there is a need for stronger policy to combat air pollution, the first step is to estimate various sources of pollutants and their contribution to ambient AQ.

Studying air pollution is especially important considering that the last comprehensive air pollution study for Bengaluru was in 2008. This has resulted in a knowledge gap which, in turn, is reflected in the inadequate measures put in place to tackle the city's air pollution. CSTEP, through this study, hopes to bridge this gap by building an up-to-date, high resolution emission inventory for the city, developing AQ modelling and doing relevant policy analysis.

Measuring air pollution levels is the first step towards designing effective policy interventions at the city, state and national levels, towards achieving "Clean Air for All". A comprehensive air pollution measurement study is crucial for formulating laws and policies to reduce air pollution levels. It will also help in planning for a future that aligns with the Sustainable Development Goals that India has committed to.

We hear you are running a pilot project in Bengaluru. What does this project focus on?

The focus of the pilot project is on mobile monitoring for PM_{2.5}, PM₁₀, black carbon (BC), and particle count of the pollutant in a 5 sq. km area of Bangalore city. Using air quality measuring instruments (DustTrak, Aethalometer, Condensation Particle Counter (CPC)) in chosen areas of the city, mobile measurements will be taken during peak and off-peak hours, weekdays and weekends and from different modes of transportation (auto rickshaw, bike and car). This pilot study will also help us to examine the air quality, and assess exposure levels.

In order to understand dispersion of pollutants in the city, we will also be using dispersion models (computational simulation of how air pollutants disperse in the ambient atmosphere). The models will also allow us to estimate the trans-boundary pollution share.

Personally, how do you view the air quality in Delhi vs. Bengaluru?

Air quality levels in Bangalore city have not reached critical levels, yet. However, considering the city's growth in the last decade, scientific, evidence-based policy measures are required to reduce the level of pollution in the city. Taking into consideration that Bangalore's public transport system is not as widespread as the capital city's, it is only a matter of time before Bangalore's air quality levels deteriorate.

What is the biggest challenge in the field from your perspective?

The most pressing challenge is the lack of data from continuous monitoring stations. This has resulted in lack of sufficient evidence, and in turn formulation of adequate policies for reducing air pollution. Hence, there is a need to improve data generation and evidence-based analysis for making a change in our air quality.

Lack of capacity and resources for air pollution studies at the institutional level (measurement and modelling) is also a pressing challenge hindering air quality studies. This calls for multi-sectoral collaborations at different levels (research and science, policy and governance, industries and local groups). This will not only enable filling of data gaps, but will also ensure that the public are well aware of and contribute to policy measures.

Public awareness is another missing component that is crucial to influencing changes in the present air pollution scenario. We need to educate the residents and promote measures that can reduce air pollution. This will help to change people's perspective and behavioural patterns when it comes to air pollution. These are small, but important steps that can address the bigger challenge of air pollution.

Is CSTEP likely to hire air quality professionals in the near future?

Yes!

Spotlight

[A WORDPRESS.COM WEBSITE.](#)