SEASON'S GREETINGS

CENTER FOR STUDY OF SCIENCE, TECHNOLOGY AND POLICY (CSTEP)

Dear Friends and Patrons,

Wishing you a happy New Year! May this year bring happiness, joy and new inspirations to your life.

Looking back at 2018, here at CSTEP, we had a great year with new initiatives and exciting new studies within our existing areas.

We have worked hard on developing our broader domains (listed alongside here) with domain leads establishing strategies for future work in respective areas. Our work in Air Pollution and Artificial Intelligence (AI) for Development has taken root, with each of them obtaining grants to continue work.

Our establishment of the Noida office has resulted in deeper and more frequent engagements with various central government ministries as well as with departments in other states of India. We feel that this will be a major activity going into 2019.

In this missive, we would like to highlight some of our work in 2018, where we not only explored interesting research questions but also made an impact (however small) in policy circles. These epitomise the commitment to our mission and our resolve to fulfil our vision.

We look forward to working with you in the coming year and hope to meet you soon!

Sincerely,

Anshu Bharadwaj
Executive Director, CSTEP

AI FOR DEVELOPMENT

AIR POLLUTION

CLIMATE AND ENERGY POLICY

POWER

RENEWABLES & ENERGY EFFICIENCY

RESEARCH TOOLS

MATERIALS & STORAGE

URBAN DEVELOPMENT

TRANSPORT

USING DATA FOR LIVEABLE CITIES

How can we use data to build liveable, smart cities? CSTEP has built an Urban Observatory (UO) Platform to answer this question. The platform will enable urban planners to analyse the implications of a city's built-growth on service delivery, natural resources, urban disaster management, etc. It collects, curates and catalogues geospatial and non-spatial data from multiple sources to address urban planning challenges. In 2018, we began collecting, integrating, analysing and visualising data from multiple sources, to build a data story on noise pollution in Bengaluru, as a Proof of Concept. We also developed an Android mobile application named 'Shabda' to crowdsource noise pollution data.


AIR POLLUTION

The lack of disaggregated data on the sources of pollution is a hindrance to improving air quality. Thus, CSTEP has initiated studies to identify the sectoral contribution to air pollution in Bengaluru. We have also initiated studies towards developing clean air action plans for some of the most polluted cities in India (Patna, Gaya and Muzaffarpur). In 2019, we hope to expand our programme to assist other consistently polluting cities, as identified by the Central Pollution Control Board (CPCB), and help them meet the National Clean Air Programme's (N-CAP) targets. CSTEP aims to be a centre of excellence for providing evidence-based measures towards improving air quality.

MATERIALS & STORAGE

CSTEP developed mid-, short- and long-term implementation plans for the Bengaluru Metropolitan Transport Corporation (BMTC) to deploy electric buses. These included identifying suitable routes for installing electric vehicle supply equipment (EVSE), a GIS-based integrated planning and visualisation tool, and cost-benefit framework for analysing e-bus variants. In 2019, CSTEP will continue its engagement with BMTC to plan charging infrastructure, anticipating a high-volume electric bus fleet and considering the constraints and opportunities associated with the existing transportation and power distribution systems.
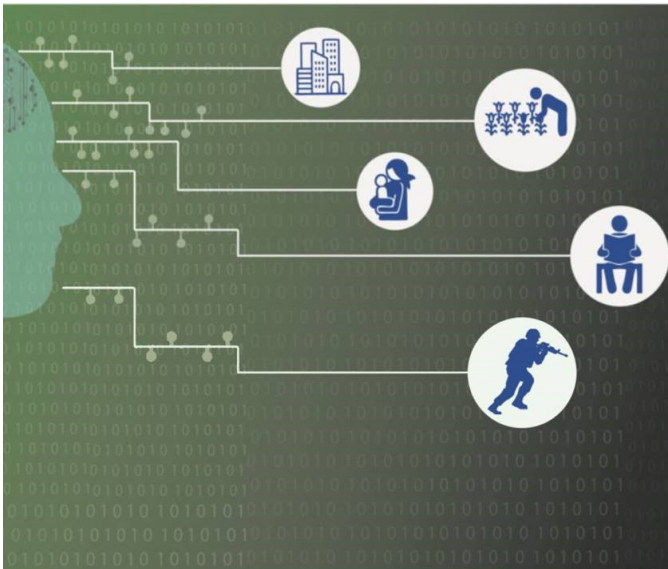
AI FOR DEVELOPMENT

We, at CSTEP, are pursuing Artificial Intelligence (AI) for impact. In 2018, we focussed on health and nutrition. Our platform SNEHA, aimed at management of health and nutrition of women and children, is suitably armed with AI for a variety of purposes. Detection of early malnutrition in children is critical, and an image-based algorithm captures the height of the child through a photograph, thereby increasing the accuracy of measurement and at the same time providing evidence of record. We are continuing to work on the development of machine learning models in SNEHA, for health-risk prediction at the community, family, and individual levels to facilitate targeted and proactive interventions. In 2019, CSTEP plans to give shape to path-breaking AI applications in agriculture, education and early childhood cognitive development.

RENEWABLES & ENERGY EFFICIENCY

Bengaluru Electricity Supply Company Ltd. (BESCOM) aims to achieve a target of 1GW of RTPV (Rooftop Photovoltaic) by 2021-22. CSTEP, as a technical partner, is enabling this by building a tool that can help identify most suitable rooftops to install RTPV. We used the innovative aerial Light Detection and Ranging (LiDAR) technology to develop high-resolution 3D maps of Bengaluru. This first-of-its-kind tool can accurately assess the potential of rooftop solar in the city and the associated business case for all consumer categories. In 2019, this tool will be launched and made freely accessible by all BESCOM consumers to help them make investment decisions. These efforts are aimed at a larger objective of enabling adoption of an integrated power-sector planning framework. We are also engaging with the Bihar government to understand the scalability of such an approach for strategic RTPV deployment.
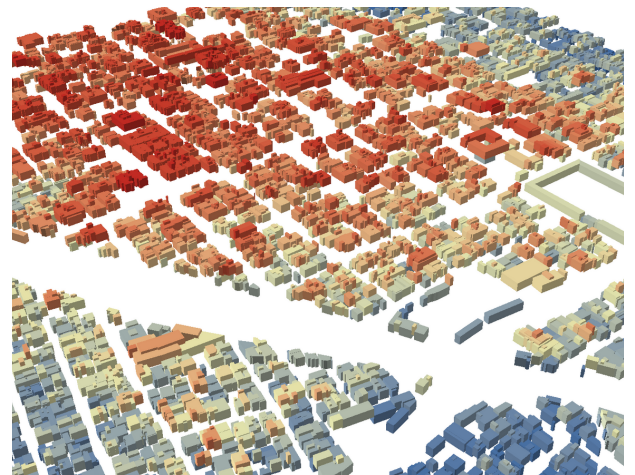
SCI-TECH NEWS: OUR THOUGHTS, OPINIONS, AND MORE

In 2018, we revamped our blog, Sci-Tech News, where our researchers share their views and ideas. The weekly blog also focuses on issues we're working on to solve and includes views from sector experts. We've recently published a series of articles discussing India's policy conundrum with respect to climate change: meeting our developmental goals in a sustainable manner. Navroz Dubash, Chapter Lead at the Intergovernmental Panel on Climate Change and Prof. J Srinivasan, Distinguished Scientist at the Divecha Centre for Climate Change, have shared their views too. Upcoming articles will look at data and its roles in urban planning. Follow Sci-Tech News and stay tuned!