CENTRE FOR SCIENCE
AND ENVIRONMENT

2020–21

ANNUAL REPORT

Knowledge-Based Activism

CONTENTS

DIRECTOR'S REPORT

Working through in the year of the virus to stay relevant and impactful

This past year has been perhaps the worst and most tragic time in our living memory. We have seen devastation of a scale unimagined before. It has also brought out sharply the need for renewed investment into public health, water and sanitation, and for building a greener and more secure future in the years to come. Covid-19 is a result of our dystopian relationship with nature—we have to reset the way we do food production to the way we manage our wild habitats.

It has also shown up the need to cooperate in an increasingly interdependent and interconnected world. There is no doubt that we are in the race against the virus, its variants and vaccination for all. It is also clear that nobody is safe, till all in the world are safely vaccinated—which needs a strategy for affordable and accessible health provisioning. Covid-19 has shown up the cracks and fissures in global action—and the desperate need to fix it.

And this in the past year, when climate change impacts are showing up and adding to the devastation caused by the virus. We are seeing intensification in cyclones. We are seeing extreme rain events, which are leading to increased challenges of water management—floods and then droughts. We know the aftermath of these events is worse because it takes away the development dividend and years of public investment into building infrastructure to improve the lives of people. It cripples local economies; makes communities poorer and more vulnerable. This year in parts of Africa and India there have also been attacks from locusts, again linked to variable rainfall in the region, because of climate change impacts. The attacks destroyed fields and livelihoods of farmers—multiplying and magnifying the human distress because of Covid-19.

Today it is that the poor of the world who are worst hit; they are victims of Covid-19 and they are victims of climate change—the poor who not responsible for the stock of emissions in the atmosphere, but are at the frontline of the devastation. We need to remember this. And, as we can see from the upheaval across the world—from India to the US—the poor have been disproportionately hit by the virus. They have suffered twice: they lost lives to the contagion and they lost livelihoods.

We need to remember this because Covid-19 has taught us that we are as strong as the strongest link, or as weak as the weakest. The poor are worst hit today, but if the disease survives we will all be in danger. It is the same with climate change. We need development strategies that are sustainable for all—low carbon growth to push the poor out of poverty. But we also know that sustainability is about affordable and inclusive growth. Therefore, the challenge is not about technology or finance; it is about the approaches to development that will secure the wellbeing of the poorest in the world.

But what is also clear is that the multiple crises happening together are making the world more insecure; it will make governments yearn to be more authoritarian and intolerant. There is also a fine line between what governments consider needless denouncement and what they consider unnecessary at the time of a national crisis—this then becomes the time when it is best to self-censor or otherwise it will weaken governmental resolve. But this will not do.

We need more information, not less. We need to know what is happening on the ground so that actions can be guided better; so that we do not make mistakes or repeat them. Let's always remember that Covid-19 is a global pandemic today because scientists in China or WHO did not have the courage

to speak truth to power. Making us all cheerleaders will not solve the problem. It will exacerbate the many crises that are here to stay. Therefore, we need more democracy, not less, in the way ahead.

All this has brought out the sheer imperative of the work we do. We need to research the new approaches, to amplify the message of the need for change and to push—cajole and advocate—for implementation with a difference in the post-Covid-19 world.

However, there is also no doubt that Covid-19 has put huge restraints on the work we do—we cannot travel, we cannot report and learn from the ground, we cannot meet partners and so meaningful collaboration is restricted. Worse, governments across the world are caught in fire-fighting the pandemic. Their engagement on issues that should and must matter is constricted.

But the fact is that we have to persist. We have to rework our method of working; and even the means we use to stay relevant and to stay impactful. The issues we care about are critical. The momentum of change must not be lost in the crisis of today. This is what we have learnt in the past year of the virus.

One, we have learnt to work remotely—this has definitely come at the cost of team collaborations and creativity—but it does allow us stay impactful and relevant.

Two, we have reworked our planning so that we can recalibrate—the uncertainty has meant that we have to be nimble, imaginative and innovative in terms of work. We now do assessment of tasks each quarter and this allows us to both stay on track, but also allows us to recalibrate our programme strategy, if needed.

Three, we have reworked the method of working so that we can engage online—we started with webinars and online trainings instead of on-site seminars and capacity building and have gone on to now doing online collaborations with partners in different parts of the world. There is no doubt that this method has limitations, but it has taught us how to much more with less—we will continue to use this 'hybrid' method once the world goes back to 'normal', I am sure.

Four, we have changed our 'means' to achieve the same ends —we are focused on amplifying our message through online media; multi-media and through engagement with different segments of society. This we find has huge resonance, as there is hunger for information, for knowledge and for news about what is working—best practices—that will show the way ahead.

This is not to say that we have been able to do everything that we had planned for this last year. There is no doubt that Covid-19 has taken a toll—in the second and deadly wave of the virus in April–May 2021—one-fourth of CSE staff have had the infection; there have been many who have suffered personal tragedies and loss. It has not been easy.

Survival today and rebuilding for tomorrow requires us to stay strong—to build the resilience for the future—and this is as much true for our development strategies as it is for institutions like CSE. Our effort, in this last year, and going forward, is to stay on course—we even greater determination—to make the difference.

We know today how much our work matters. It is about the post-Covid world's green and inclusive recovery. It is about health as a determinant for wellbeing, which requires new focus on access to a clean environment—from water and sanitation to pollution control. It is about investment in rural infrastructure, which will allow people to cope with increasing adversity in terms of weather and livelihoods. It is about building institutions—local, national and global—that can work to foster cooperation and independence and deepen democracy.

(Sunita Narain)

Institutional Report

Covid-19: Institutional response

Staff safety measures

In the early days of the pandemic, only limited domestic travel was allowed and that too for important and unavoidable reasons; international travel was immediately curtailed. Only *DTE* reporters were allowed to travel, but with extreme care and with the logistics organized by CSE. Staff members were strongly advised to adhere to health and safety norms being announced by government health agencies, and to immediately report any symptoms. Regular weekly/biweekly advisories on safety protocols, SOPs were sent to all CSE staff. Housekeeping routines were upscaled with regular cleaning of all touch-surface areas with disinfectants—including taps, flush buttons, doorknobs, phones, etc. CSE provided masks, sanitizers, as well as the option for staff to bathe and change clothes and shoes when reaching office. Quarantine rules were strictly followed.

Public meetings and events organized by the CSE programme teams were cancelled. Staff trainings on using video call software were initiated. Internet infrastructure was strengthened. The IT and Admin departments moved desktops, laptops, files and hard copies of important documents to the homes of employees. Within a month CSE staff members were ready to be working online.

CSE offices were only partially opened in early May 2020, but with a strict 33 per cent capacity cap, and on a rotational basis—programme teams were expected to attend office once or, at most, twice a week. Workspaces were reorganized to ensure appropriate distance between workstations, and rooms are kept well-ventilated.

CSE has invested time and money over the last five years to nurture its talent pool. It encouraged its staff to make good use of the lockdown and enroll in online courses for skill building.

A special note of gratitude is due for CSE administration personnel, who took the risk of visiting office to sanitize and fumigate the premises, and who played a vital role in keeping admin support functions, including providing logistical support to CSE staff that needed hospitalization and other form of medical support—oxygen support, liaising with hospitals and doctors, etc.

Even as the situation was limping back to normalcy, India has been engulfed with the second wave of the pandemic, starting late February–March 2021. All CSE staff was advised to work from home again from post March 2021—this remains the case as of June 2021.

Work from Home (WFH) policy

Working from home has been challenging, work-wise and mentally, because the pandemic left many separated from family and friends, and the thought of being locked down was traumatic in itself. Staff, both men and women, were over-tasked, having to take care of all household work and families and as well as managing office work.

In acknowledging these difficulties, CSE developed a work from home (WFH) policy along with work from office (WFO) policy. Both models were incorporated into the calendar and a roster was made, which included two days a week for all staff; three days a week for *DTE* staff; and five days a week for AAETI staff (as they stay on campus). These were modified with every easing of the lockdown'.

Annual planning to quarterly plans

The system of annual planning to assist in the continuing growth of the organization and its employees was converted to quarterly mode of planning with intermittent outcomes planned at shorter intervals. This was done largely to address the uncertainty built around the crisis and plan in an optimum manner to map the outcomes efficiently and effectively. Teams have rescheduled work to focus on desk-based research that can be done off-site, and have been convening online meetings and conducting online trainings during the lockdowns.

Throughout this period, CSE Management continues to meet at least once every week collectively to take stock on pandemic measures and staff welfare, as well as monitor progress and productivity and to discuss the wider impact the pandemic is having on the development sector. Weekly full-staff meetings on Zoom are conducted to keep staff apprised of measures; the meetings also serve a vital support function, and help keep staff motivated.

Enterprise Resource Planning (ERP)

CSE's custom-built ERP has helped plan, budget, coordinate, monitor and review every activity on one platform. The ERP has allowed management and staff to continue to work remotely during the many months of an extended lockdown.

The ERP was used to track attendance, allowed staff to file progress reports, apply for leave, and also make various requisitions. It consolidates office-wide software applications and databases for greater efficiencies in organizational resource planning, management and operations; human resources; as well as budgeting, activity and expenditure monitoring.

The system has enabled a host of automated functions ranging from HR and administration, including tracking attendance, facilitating staff travel, planning and tracking logistics for trainings, to budgeting and grants management, in addition to activity planning (down to every programme as well as individual's work plan for the year), reporting as well as monitoring progress of the work of various CSE programmes.

It also gives CSE Management the tools to generate MIS reports that facilitate analyses across several organizational functions. The system is synced with the core payroll and budgeting software of CSE for purposes such as monitoring activity-related expenses, attendance and staff assessment, among others. Information on Admin and HR policies and welfare measures are also made available on this platform; it is also used by Management to make important announcements. In this period, ERP-generated data were used by Management to make strategic decisions and to map the necessary changes as and when required. Likewise, teams could make the changes in their work plans as and when required, depending on the responsiveness of stakeholders during this difficult time.

Philanthropy

- CSE staff voluntarily contributed one day's salary towards the Covid relief fund. CSE contributed an equivalent amount and donated INR 10 lakh towards food for migrant workers.
- CSE had its presence in Uttar Pradesh for studies on wastewater and sanitation on the ground. The Centre felt the need to provide PPE kits, gloves and masks for sanitation workers to Nagar Palika Parishad in Bijnor and Chunar (UP).

SUPPORT TO CITIES IN UTTAR PRADESH ON COVID-19 RELIEF & RESPONSE

- Personal **Protective equipment** (PPEs) distributed to frontline sanitation workers in 13 cities in Uttar Pradesh **(2 masks, 2 pairs of gloves, 1 full body suit and 2 soaps).**
- Urban local bodies with **CSE intervention issued essential services** passes to desludgers to continue operations during lockdown.
- Municipal functionaries, including **sanitary inspectors and supervisors sensitised** on good practices to prevent COVID-19.
- Foot-operated **handwash stations** and **thermal scanners installed in 13 cities** for ULB staff and office visitors
- CSE's efforts were acknowledged by **city Mayors / Chairpersons, Municipal Commissioners and/or Executive Officers.** Activities were widely covered in local media

DIRECT BENEFICIARIES

1,850 sanitation workers **supported in 13 Cities**

INDIRECT BENEFICIARIES

400,000 pax. **(approx.)**





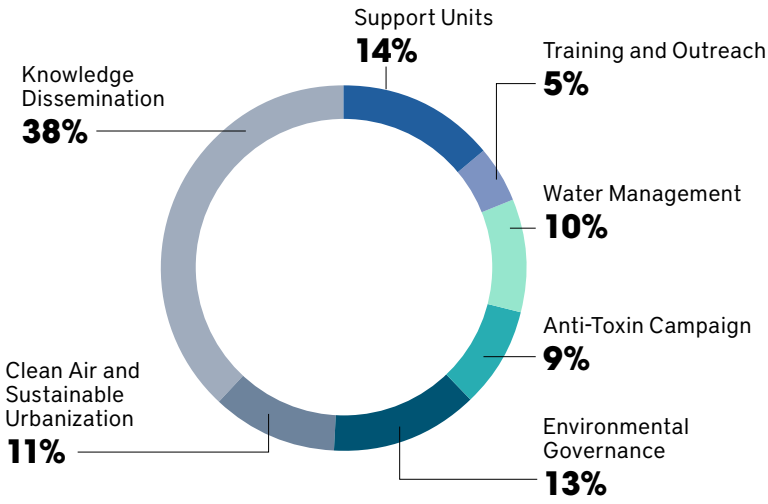




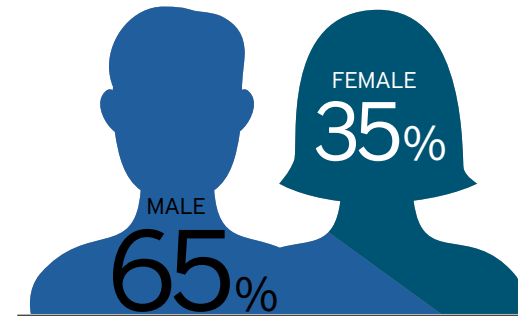
Human Resource Management 2020-21

When the severity of the pandemic became evident, and at the beginning of the first government-mandated 'lockdown', CSE quickly put in place measures, systems and routines to enhance safety protocols as also measures to remain productive.

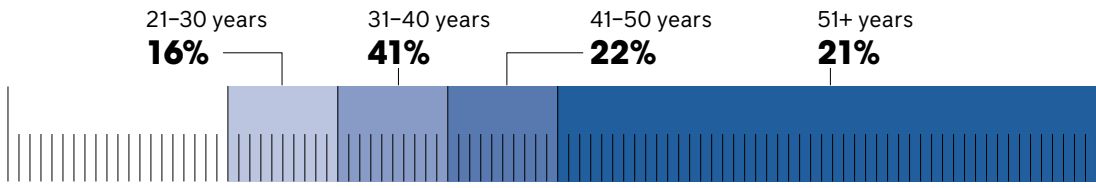
Support vs programme teams



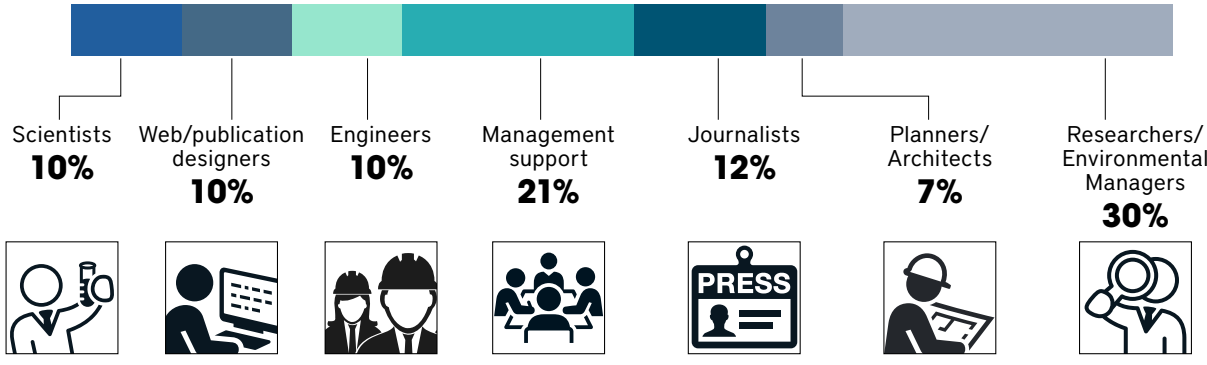
Gender ratio (2020–21)



Employee age



CSE talent pool



Staff Welfare

MEDICAL FACILITIES: Staff members are each provided with a Health Insurance cover of INR 5 lakh, and Life Insurance cover of INR 10–50 lakh. Both these policies were renewed this year, with the added cover for Covid-19-related illness.

- For Life Insurance, 50 per cent of the premium is shared by staff, while Health Insurance is covered fully by CSE
- Family members of staff are also included in this policy, premium of which is borne completely by staff.
- Staff members have been helped by the insurance schemes, especially to meet expenses of critical illnesses such as cancer and other treatments.
- CSE took care of staff who tested positive, arranged home care or hospitalization. Helped people to get themselves tested.

FACILITIES FOR STAFF: CSE's in-house, subsided, rooftop Canteen provides freshly prepared lunch and refreshments to staff members. The CSE canteen remained operational, with a scaled-down menu during the period when the office was open. All safety measures were taken while making and serving food. The CSE gym with a trainer remained closed in this period; however, online yoga and aerobic sessions for staff were organized in the lockdown periods.

Interns and Volunteers 2020–21

With the pandemic setting in at the beginning of 2020, CSE was able to offer virtual internships to 66 interested students in the year, drawn from several countries as well as from across India. This year we had received requests for association from colleges of repute like School of Planning and Architecture, IITs, National Institute of Technology, University of Queensland, University of Southampton, University of Hertfordshire and University of Bristol, among others. These students of environment, development and sustainability made significant contributions—research inputs as well as data collection—to several CSE programmes.

Programme Monitoring: Snapshot

Trainings

trainings in 2020-21

128

Online trainings

119

8,366 attended

Trainings conducted at AAETI

9

270 attended

There was a clear shift in the delivery of capacity-building efforts in the year, and programmes conducted a total of 128 trainings in 2020–21, of which an overwhelming percentage—92.5 per cent— were online trainings. Only nine trainings were conducted at AAETI in the year, which 270 people attended.

Meetings, seminars, webinars

127

total webinars, and online meetings conducted in the year

39,114
people attended directly

97,886
people viewed the event through Facebook, YouTube, etc

A total of 127 webinars, and online meetings were conducted in the year; 39,114 people attended these events directly, while an additional 97,886 people viewed the event proceedings using platforms such as Facebook, YouTube, etc.

Advocacy and research productivity

Total publications published this year

105

Downloaded

38,980 times

A total of 105 publications were published in the year, which were downloaded 38,980 times. Programmes produced a wide variety of publications, including 50 research reports; six manuals and handbooks; 10 factsheets; and 24 policy briefs and documents; while DTE produced a total of four publications in the year. A a range of collateral to support campaigns was also published—for e.g. outreach for Covid-19 in cities, or to support environment education campaigns, etc.

50 research reports

6 manuals and handbooks

10 factsheets

6 policy briefs and documents

4 publications *DTE* produced in the year

Online presence

CSE websites attracted a total of

1,349,973 visitors

with more than

3 million **page views**

Down To Earth website attracted a total of

12,431,820 users

with close to

28 million **page views in the year**

A total of

4,363

stories were published on ***DTE*** (Print, Web and Hindi editions) in the year

Investments and attention to strengthening CSE's online presence was useful in continuing engagement with stakeholders, sector specialists as well as with the general public. In the year, CSE websites attracted a total of 1,349,973 visitors, with more than 3 million (3,074,811) page views.

Down To Earth remained a popular dissemination channel for research and perspective—the site alone attracted 12,431,820 users, with close to 28 million (28,603,039) page views in the year. A total of 4363 stories were published on ***DTE*** (Print, Web and Hindi editions) in the year.

News media visibility

CSE remained very visible in the news – both print media s well as in the electronic media (TV) in the year. A total of 1136 articles and programme segments directly mentioned CSE research, or used CSE staff as sources for stories. Coverage included mainstream print and electronic media (national as well as regional, incl. vernacular language news media), as well as newspapers and TV news shows outside India (80 mentions), including in news media in Africa (23 mentions).

1136

total number of articles and programme segments directly mentioned CSE research, or used CSE staff as sources for stories

Industrial Pollution Programme

DESIGNED TO HELP INDUSTRY INTERNALIZE ENERGY AND RESOURCE EFFICIENCY, AND POINT IT TO THE PATH OF LOW-CARBON DEVELOPMENT

ONE PROGRAMME component pushes for resource efficiency improvements in the coal-based thermal power sector (TPP) in India, including supporting the implementation of TPP standards in select states.

Over the past six years, CSE has pushed for the implementation of the 2015 TPP emissions standards—which were to come into effect in 2022—by providing hand-holding support to select state pollution control boards (PCBs) of Madhya Pradesh, Rajasthan and Maharashtra, and by targeted research on barriers to implementation of these stringent norms.

However during the pandemic the Ministry of Environment, Forest and Climate Change (MoEFCC) extended the deadlines by three to four years for the sector to comply with the stringent emission norms (particularly for sulphur dioxide), with only a nominal penalty levied against non-complying plants. It is clear these amendments give coal-based thermal power stations a license to pollute. CSE research found that the amended notification favours operation of old, inefficient coal power stations, compromising India's climate goals. CSE did a press release. Efforts continue to push MoEFCC, Central Electricity Commission (CEA) and the Ministry of Power to ensure the new deadlines are implemented and on time.

Support for Madhya Pradesh, Rajasthan, Maharashtra PCBs

State pollution regulators are key stakeholders to drive the implementation as well as ensure compliance with the new emission norms, but need strengthened capacities and an appropriate governance framework to drive the change. The programme extensively engaged with central and state pollution control board (PCB) officials in Madhya Pradesh, Rajasthan, and Maharashtra—three states that show traction in implementing the norms—to push for the implementation.

These PCBs have asked power stations to produce action plans on implementation, which are periodically reviewed. There is also mounting pressure on individual power stations to demonstrate progress.

CSE's *Comprehensive report on the compliance status of coal-based thermal power plants in Rajasthan* will be used by the state PCB to monitor progress made by power stations and audit any delays and plan subsequent action. In a December 2020 CSE webinar, the Rajasthan State Pollution Control Board (RSPCB) acknowledged the need to meet PM and SOx norms for thermal power plants with current deadlines, especially for SOx, which is a precursor to particulate matter. This is significant, as the non-attainment cities in Rajasthan are in the airshed of these power plants. RSPCB asked all thermal power plants to prepare their individual action plans.

Meanwhile, real-time monitoring of pollution using **Continuous Emissions Monitoring Systems** (CEMS) is an important tool to improve compliance enforcement in the country. The Central Pollution Control Board (CPCB) had introduced CEMS for monitoring 17 categories of industries, including those in the 'red' category in the Delhi-NCR region. However, CEMS is poorly implemented and data is not used for enforcement, even though the instruments have been installed at great cost by industry. CSE's trainings help build capacities of a wide range of regulators, industry representatives, consultants, and researchers, and are critical to ensure a more efficient monitoring and enforcement regime using CEMS.

The programme's conducts a wide range of **technical research.** In 2020–21, a study analysed incentives for transition to clean power, for e.g. merit order dispatch, or 'first-run', which incentivizes cleaner power stations to run on priority, while another study centred on retirement strategies for old thermal power plants with consideration for just transition—labour, land and sustainability. New approaches were also studied—for instance, best available options for India's coal-based power sector to reduce the CO_2 footprint; or pushing for operating older coal power plants at higher biomass co-firing ratios as a first-step strategy to reduce greenhouse gas (GHG) emissions.

Research and a webinar on flyash utilization pointed out that one in every two power plants in India does not meet the 100 per cent fly ash utilization target, a full two decades after MoEFCC regulations on fly ash came in force, and despite several orders of the National Green Tribunal (NGT). As a result, 1.65 billion tonnes of legacy fly ash has piled up, which is a massive challenge for the sector. Urgent interventions and strategies are needed—such as its use in bricks and in road construction—which will also lead to considerable avoided GHG emissions reduction.

As part of its **capacity-building** effort, online trainings were conducted on a range of topics, including real-time monitoring; water audit and wastewater management in industries; orientation on Environmental Laws; CEMS, CEQMS and data interpretation; affordable monitoring; and air-quality management plan for industrial areas.

Support to regional clean air action plans in select states

In Maharashtra, CSE's comprehensive study, *Enhanced Strategic Plan towards Clean Air in Mumbai Metropolitan Region* , assessed the various sources of pollution in the Mumbai region. The study found that medium- and small-scale enterprises (MSMEs) are a major contributor, while pollution from bigger units such as Chembur, Dombivali and Navi Mumbai are controlled as the norms for large industrial sectors are more stringent.

The study found that the TTC industrial cluster is the most polluting of all, accounting for about 44 per cent of the total industrial pollution load of the four areas studied by CSE. Chemical industries in the area are also a major polluter. The comprehensive action plan specific to industrial pollution for the MMR included a ban on the use of coal; the need to move to clean fuels such as PNG and the reforms needed in pricing and supply; strengthened air quality monitoring; modifications in the siting criteria and need for buffer zones, among other measures. A sector-wide 10-point pollution mitigation strategy and agenda presented to officials at a public webinar.

In order to support hyper local action planning for non-attainment cities of Rajasthan, CSE's study of pollution hotspots with respect to emission sources, mitigation opportunities, and recommendations was conducted for 10 hotspots in and around the city of Jaipur. This included a review of pollution from industrial, waste management, fugitive dust, area-sources, among others, and also suggested remedial measures. The programme also studied and suggested measures for pollution control from industries in Vishwakarma Industrial Area, Jaipur.

Monitoring of hotspots: Pollution hotspots and industrial clusters in Delhi-NCR

The study to estimate the pollution and emissions load from industrial sources encompassed seven districts/regions: Bhiwadi and Alwar in Rajasthan, Gurugram, Faridabad, Panipat, Sonipat in Haryana and Ghaziabad in Uttar Pradesh. CSE engaged with Rajasthan State Pollution Control Board (RSPCB), Industrial Development Department of Rajasthan (RIICO), District Industries Centre (DIC), and with municipalities and industrial associations on the report.

MAJOR FINDINGS, RECOMMENDATIONS

- **Coal is the most consumed fuel in these districts. Need to switch fuels to PNG.**
- **The identified hotspots are responsible for almost 35–80 per cent of the industrial air pollution load in that district/region.**
- **Four sectors need to be prioritized in the air pollution action plans of NCR: Textile (largest consumer of coal and wood), Metal-based industries (largest consumer of liquid fuel and gas), food processing units (largest consumer of agro-based fuels); and the chemical sector contribute 73 per cent of the overall pollution load in these six districts.**
- **Need for common methodology for inventorization.**
- **Industry is taking forward CSE's recommendation to replace small, inefficient, individual boilers with common steam boilers in industrial sites. Industries in Panipat are in conversation with common boiler manufacturers**
- **RIICO and the Bhiwadi municipality have hired a concessionaire to manage the non-hazardous industrial waste in Bhiwadi; concessionaires are being hired in other industry hotspots of Rajasthan.**
- **The study found that a majority of industries have not switched to cleaner fuel, underscoring the prevailing high price of natural gas and electricity to the commercial sector. A separate study, *Analysing Industrial Fuel Policy in Delhi and NCR States* stressed the need to keep the price of natural gas low, and to bring natural gas under the GST slab.**

Global interventions

IN ETHIOPIA, despite preoccupations with Covid-19, the Environment, Forest and Climate Change Commission (EFCCC) (successor to the Ministry of Environment and Climate Change) has requested CSE's assistance in preparing the country's 10-year roadmap and action plan and policies on air quality, waste management and water pollution. The programme helped enhance monitoring mechanisms using smart and affordable monitoring systems, and assisted the country's regulators and river basin departments, including the Awash River Basin Authority, prepare action plans to clean polluted river stretches. EFCCC has requested CSE to expand the work that was done for the Awash Basin to other rivers of the country. More recently, the country's regulator has requested CSE's inputs in Ethiopia's national water quality policy.

IN SOUTHEAST ASIA, the programme engaged with a variety stakeholders to identify the outlook of coal consumption in the region, including with the Ministry of Energy and Mineral Resources in Indonesia; coal and nuclear minerals division in the Philippines; the electricity-generating authority in Thailand; and with JCOAL and ASEAN to push the advocacy.

IN GHANA, the team worked with the Environmental Protection Agency to prepare inspection and audit manuals that are now being reviewed by the Minister. The Ghana EPA has also asked for help in preparing an air quality action plan for Tema Industrial Area.

IN NAMIBIA, the Ministry of Environment, Forestry and Tourism (MET) is finalizing two documents submitted by CSE—'Project Categorization' and 'Environmental Management in the Mining Industry.' Also, the country's draft Environmental Protection Act, which includes many of CSE's recommendations, is with Parliament and is under final review.

Clean Air programme

TO ENABLE OUR CITIES TO SECURE THE RIGHT TO CLEAN AIR AND PUBLIC HEALTH

THE PROGRAMME has adapted its research targets to the immediate context of the pandemic, as for example leveraging the 'blue sky' experience of the lockdown period to influence public conversation on the roadmap for the new normal.

For instance, the Urban Analytics Lab's in-depth assessment of gaps in air quality data processing and reporting has been taken on board by the Central Pollution Control Board (CPCB). CSE is member of the official committee looking into improving air-quality data-handling and management. Real-time air-quality data was tracked to analyse winter air pollution and to build awareness (CSE report 'Air pollution and pandemic winter: Spread and scale of crisis') Data from several Indian cities was drawn from 22 states across every region in India. The study showed how, in addition to non-attainment cities, air quality is worsening across India. Analysis of real-time air quality across cities and regions through the lockdowns and the winter generated considerable media interest, with more than 250 articles published in mainstream news outlets. The lab has been assisting state governments of Rajasthan, West Bengal, Andhra Pradesh, Odisha, and Maharashtra via other initiatives of the Air Pollution Control (APC) programme to improve and standardize air-quality reporting and benchmarking, the impact of which can be seen in the Clean Air Action Plans prepared by their cities.

National level

AIR QUALITY ASSESSMENT: The team has taken forward its work on the framework for assessment of air quality trends and data reporting for compliance to contribute towards the National Air Quality Programme (NCAP). CSE is member of the official committee looking into improving air-quality data reporting and management.

VEHICLE SCRAPPAGE POLICY: A big win during this year has been the announcement of vehicle scrappage policy by the Government of India. The programme has consistently advocated for a scrappage policy—replacing old vehicles with BSVI vehicles—for enormous emission benefits and to leverage the implementation of Bharat Stage VI emissions standards. Also, this can enable safe dismantling and material recovery from end-of-life vehicles.

VEHICLE EMISSIONS AND ON-ROAD EMISSIONS MANAGEMENT: After the decision to leapfrog to BS-VI emissions standards in 2020, CSE influenced the policy decision to get a commitment from the automobile industry to commit to real-world emissions regulations. Discussion on this in the Supreme Court further catalysed the change. The Ministry of Road Transport and Highways (MORTH) is amending BS-VI rules to adopt real-world emissions and in-service compliance rules to be implemented from 2023 onwards. This work was taken forward to draw attention to the gaps in the current regulations.

Yet another positive outcome of the advocacy on improving on-road emissions monitoring the development of Automotive Indian Standards for implementation of remote sensing devices for monitoring of emissions by the Ministry of Road Transport and Highways. APC contributed to this process when the Supreme Court was examining this matter. The advocacy programme also drew attention to the need for upgrading on-road emissions management to prevent emissions fraud and use of defeat devices.

The programme published *Strategy for Inspection on On-road BS-VI Vehicles: New Challenges*; *BS-VI Leapfrog: What More to Do* and *What to Do with Scrappage Policy: Towards Scrappage Policy and Infrastructure*.

The programme is also focused on fuel economy standards, including labelling, transparent consumer information systems, and global experiences with labelling programs. It has also ramped up the work electric mobility to build advocacy programme on zero emissions mandate and state-level implementation.

State-level interventions

The programme continued engaging with state governments to provide knowledge support to take forward implementation of clean air plans under the National Clean Air Programme (NCAP).

HYPER-LOCAL ACTION PLAN FOR POLLUTION HOTSPOTS: As part of the compliance requirements under the NCAP, CSE in collaboration with the Rajasthan State Pollution Control Board (RSPCB) and with support from the Jaipur Municipal Corporation prepared a hyper-local action plan for Jaipur with special focus on 10 hotspots in Jaipur city. Mitigation action has been proposed for area sources, industry, waste management, and fugitive dust, among others. On request from the state regulator, CSE is in the process of preparing similar studies and hyper-local action plans for other non-attainment cities in the state—Jodhpur, Kota, Alwar and Udaipur.

SECTOR-WISE DEEP DIVE: CSE is also working on sector-specific strategies for industrial pollution control, waste management and construction and demolition waste management in consultation with local bodies, vehicular emissions and mobility strategies. For instance, CSE has studied and suggested measures for pollution control from industries in Vishwakarma Industrial Area, Jaipur, and in industrial hotspots of Alwar and Bhiwadi. CSE also assessed the emission-reduction measures in the power plant sector. For waste management, CSE engaged working with Jaipur Municipal Corporation on better management of construction and demolition waste as well as solid waste and has suggested remedial measures. These multi-sectoral assessments are expected to deepen engagement in Rajasthan.

For the **Maharashtra/Mumbai region,** the programme has put together a multi-sector comprehensive action plan for clean air in the Mumbai Metropolitan Region. The study assessed various pollution sources and identified action strategy for each sector—vehicles and transport, industry and power plants, waste and road dust, among others.

CSE in collaboration with the State Transport Department has carried out an assessment of the current on-road emissions management in Mumbai region and its recommendations have been taken on board by the department for the next steps. CSE conducted an audit of all pollution under control (PUC) centres in the Mumbai Metropolitan Region for the Maharashtra Transport Department. This audit helps to put in place a roadmap for next-generation emissions management system. CSE recommendations have been taken on board and the department has started engagement with PUC centres in preparing actions to address the gaps identified.

CSE has also contributed to the framing of the roadmap for reduction strategy in transport-sector pollution by the Transport Committee set up by the Maharashtra State Pollution Control Board. (The report and audit on ground.)

Detailed assessment of industrial clusters especially medium- and small-scale enterprises (MSMEs) and a sector-wide 10-point pollution mitigation strategy and agenda was presented to key stakeholders, including pollution regulators, at a public webinar.

Public communication continued on the challenges of air quality in Maharashtra. CSE's assessment showed how despite lower PM2.5 levels due to lockdowns and overall lower levels as compared with air pollution levels in the Indo-Gangetic Plains, winter air pollution in Maharashtra's Mumbai region had gone up with the unlocking of the economy, raising concern that the region was losing its advantage of being a coastal city. This was widely reported in media.

In **West Bengal,** CSE in collaboration with the State Environment Department contributed towards the framing of the Clean Air Action Plans for seven non-attainment cities. These have all been approved for implementation. The programme is now assisting state authorities in developing an intense compliance reporting protocol (quarterly reporting for each sector in every city) based on this multi-sector action plan. As part of this effort, CSE has engaged with relevant departments in Kolkata and Howrah on reporting against specific indicators in order to institutionalize this process, to understand existing gaps, as well as to inform the implementation on ground. CSE will help detail the strategy for each sector in the coming period.

Furthermore, in collaboration with the State Transport Department, CSE has carried out joint assessment of the on-road emissions management in Kolkata. This has been taken on board for implementation. Additionally, a deep dive assessment of bus transport operations has been carried out in Kolkata along with the transport department and West Bengal State Transport Corporation to develop a guidance framework.

As part of a broad engagement with **Andhra Pradesh** on air quality, CSE in collaboration with the State Pollution Control Board has prepared clean air action plans for non-attainment cities. In 2020, the second round of plans were prepared for eight cities—Anantapur, Chittoor, Eluru,

Kadapa, Ongole, Rajahmundry, Srikakulam, Vizianagaram. (The earlier plans were prepared for five cities—Vijayawada, Visakhapatnam, Nellore, Guntur, and Kurnool.) All these plans have been approved for implementation. A meeting in Vijayawada convened representatives from all 11 cities, and the city plans were finalized and sent to the Central Pollution Control Board (CPCB), which has now approved all city plans. This effort will be followed through in the coming year.

In addition, the engagement on clean air action plans have continued in Odisha as part of CSE's collaboration with the Department of Environment and State Pollution Control Board. CSE had helped to prepare plans for seven cities (Bhubaneswar, Cuttack, Balasore, Raurkela, Angul, Talcher and Kalinga Nagar). The on-going support slowed down during the pandemic.

Global interventions

In Ethiopia and Nigeria, CSE assists key ministries, agencies and departments to formulate and implement reforms in air quality management, source-wise emission control plans and urban mobility strategies.

In **Ethiopia** CSE has been working with the Environment, Forest and Climate Change Commission (EFCCC) on a Clean Air Action Plan for Addis Ababa, which was finalized in 2019–20. Consultations have been carried out with the EFCCC this year to identify the next steps.

EFCCC has also prepared a framework for the country. This has drawn up from the initial guidance framework that was prepared by CSE in collaboration with the EFCCC and in consultation with other stakeholders. On request CSE helped with the review of the national clean air action plan for the country with a roadmap for time-bound implementation.

CSE has made the first set of the recommendations to be incorporated in the draft National Air Quality Roadmap. This effort will continue this year.

CSE, in collaboration with the Federal Ministry of Environment has helped to prepare the guidance framework of **Nigeria's** clean air action plan, and a series of consultations were held to review, fine tune and to bring on board broad consensus on action. Research has started on a city-wise clean air action plan for different sectors and actions needed. This year, these plans will be finalized in consultation with agencies.

CSE is also working with the Federal Ministry of Transportation, to help finalize the National Urban Transport Policy (UTP), which has been presented to the Minister of Transportation.

As Nigeria is embarking on a CNG programme, CSE's experience and knowledge based on the efforts made in Delhi in the 1990s and 2000s will prove useful. This will be shared with the Ministry soon.

CSE formalized the Pan Africa 'Clean Air Solutions Network' to enable experience sharing and build knowledge and capacity of African regulators. This will also extend to non-state actors, especially knowledge support to media to build knowledge and perspective on clean air issues in Africa. An orientation, 'Challenge of mitigating toxic emissions from vehicles: Special focus on on-road emissions' was organized in June, drawing participation from India and from Africa and South Asia. On the challenging issue of the import of used vehicles, CSE was able to leverage pan-Africa forums to push and catalyse action. The learning from this is now getting integrated in all clean air action plans in Nigeria and Ethiopia.

Sustainable Mobility programme

TO REDUCE THE ENERGY INTENSITY FROM TRANSPORTATION AND TRAVEL PRACTICES, WITH CLIMATE, HEALTH AND EQUITY CO-BENEFITS

THE PROGRAMME has leveraged policy focus on economic recovery and stimulus package to get a post-Covid-19 green deal for public transport and electric mobility. As part of this, two detailed assessments—*Pandemic and Mobility: Lessons from Covid-19 Crisis for Building Solutions*, and *'Pandemic and a Case for Green Recovery: Lessons from the Transport Sector*—were conducted.

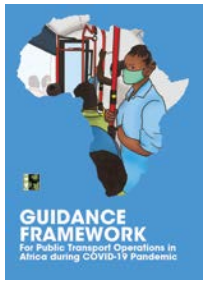
On **e-vehicles** for mobility transformation, CSE's ongoing study for a Zero Emission Vehicle Mandate in India benchmarks practices prevalent globally. It incorporates a range of strategies, including the subsidy and incentive programme, targets and mandate, city-level policy design, charging infrastructure, and battery

management among others to build the case for a higher level of ambition and a mandate. CSE has welcomed the Delhi government's notification of the Electric Vehicle Policy, which aims to achieve 25 per cent electrification of the new vehicle fleet by 2024. CSE is also leveraging clean air action in targeted cities to engage electric vehicle policy and roadmap and deployment strategy for electric buses and their operations.

The National Institute of Urban Affairs has invited CSE to prepare a white paper on **parking policy** for Delhi to be included in the Delhi Master Plan 2041. This is backed by CSE's work on crafting of parking rules as a demand management, and to support pilot projects in line with the notified Delhi parking rules that have been designed for demand management, pedestrianization and vehicle restraint measure. It also developed an enhanced action plan for the transport sector as part of the clean air action plan for Rajasthan.

In **Maharashtra,** the programme provided a comprehensive transport sector emission control strategy for the Mumbai Metropolitan Region (MMR). CSE is also supporting the transport department of Maharashtra on measures to implement the vehicle scrappage policy.

CSE also has a separate MoU with the **West Bengal** department of transport, to assist in the development of transport sector strategy. As part of this effort, the programme conducted a deep dive analysis of on-road emissions and has recommended specific measures that have been accepted. CSE has also engaged with the transport department of West Bengal and West Bengal Transport Corporation on an implementation framework for bus transport reforms. The programme has also anchored important reforms in the state's bus transport sector. Following the macro assessment conducted the previous year, CSE conducted a deep dive analysis for a guidance framework to improve the operational efficiency of bus services by improving fleet management practices. This has been submitted to the department to take decisions on the next steps. This effort will be taken forward in the coming year. The Kolkata Metropolitan Development Authority has included CSE in their oversight committee on parking policy.



At the **Pan Africa** stage, and in the face of the collapse of public transport systems, the team produced a guidance framework—*Restarting Public Transport in Africa*—to build awareness on how public transport can be reopened with safeguards in the new normal. A webinar drew the participation of top-level officials from the Federal Ministry of Transportation, Nigeria; the Lagos Metropolitan Area Transport Authority; the Ministry of Works and Transport, Uganda; and UNEP, Africa. In Nigeria, the programme works with the Federal Ministry of Transportation, to prepare the National Urban Transport Policy (UTP), which has been presented to the Minister of Transportation.

Food and Toxins programme

TO INFLUENCE THE FOOD BUSINESS TO ALIGN WITH SOCIETAL OBJECTIVES OF NUTRITION, LIVELIHOODS AND SAFETY

THE FOOD AND TOXINS programme responds to emerging issues such as junk foods and non-communicable diseases (NCDs); the growing crisis of heavy antibiotic use in food animals and the associated crisis of antimicrobial resistance in humans; pesticides and other toxins in food, and also connects organic food and food safety to livelihoods of food producers and nutrition for all.

Campaign on animal and environmental aspects of AMR

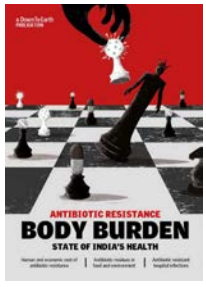
As a member of the Bureau of Indian Standards (BIS) committee, the programme pushed for changes in standards to phase out antibiotic growth promoters from poultry feeds. The draft standards aim for medically important antibiotics (as per the WHO) to be phased out while only three antibiotics will be allowed until 2023 in poultry feed. These voluntary standards, when adopted, will mark an important step, as they pave the way for a mandatory set of regulations/ policy framework on poultry feed.

Antimicrobial resistance (AMR) research also focused on practices of antibiotic misuse in the dairy sector and the problems in the surveillance of antibiotic residues in milk. It focused on the

non-chemical solutions such as ethnoveterinary medicines to bring down antibiotic misuse in the Indian dairy sector and early disease diagnosis and testing of antibiotic residues in milk.

There was also policy response to CSE's work on antibiotic misuse in crops. In May 2020, the Central Insecticides Board and Registration Committee of the Ministry of Agriculture, Government of India, recommended that use of antibiotics such as streptomycin and tetracycline (streptomycin is a critically important antibiotic used in tuberculosis) be completely banned with immediate effect on crops where other options were available for bacterial disease control.

In addition, through webinars (such as on One-Health approach and intensive food systems), workshops (Africa-Asia AMR workshop) and outreach (during world antimicrobial awareness week), the team raised the issue of intensive farming, need for a true One Health action and sustainable food systems and phasing out antibiotics for growth promotion, disease prevention and use of critically important antibiotics in the food-animal sector. The publication, *Body Burden: Antibiotic Resistance—State of India's Health*, was also released through a webinar.



The programme's intervention in helping states design appropriate AMR Action Plans saw some traction in the year. CSE members were invited to core implementation committee of the Delhi State AMR action plan (CSE had helped develop the action plan), and engagement with Madhya Pradesh and Kerala—with whom CSE had earlier worked—continued through meetings, webinars, workshops and through contribution to articles and videos during the world antimicrobial awareness week.

In 2020–21, CSE also formally engaged, in addition to Zambia, with Zimbabwe to support their national AMR action plan implementation.

The programme partnered with the national AMR core group of **Zimbabwe** (Ministry of Health and Child Care), and with the National Association of Freelance Journalists to raise awareness among regional media on AMR. CSE also helped Zimbabwe authorities develop their prioritized national AMR action plan for the next phase of action against AMR (2022 onwards). Key country stakeholders have also participated in several CSE knowledge and learning webinars and workshops, including in media briefing with regional journalists and an online workshop on the country's National Action Plan on AMR.

In collaboration with the **Zambian** AMRCC (Antimicrobial Resistance Coordination Committee), CSE assisted Zambia Environmental Management Agency (ZEMA) to develop a framework for 'Drug take-back and extended producer responsibility (EPR) in the country. Developed with inputs from multiple country and global stakeholders, the framework will help Zambia address the issue of improper disposal of unused/expired drugs from the household, a potential driver for AMR. Earlier in an article in a Zambian newspaper, the President and health minister of Zambia acknowledged CSE's efforts.

A focus in the year was to bring global attention on the importance of 'One-health' (containing AMR from animal and environmental routes; the need to transform food 'systems' in the global south. CSE convened 125 stakeholders and experts from Africa and Asia over a three-day virtual workshop, which helped explore ground realities, highlight issues, underscore needs and engage with a global AMR community.

As part of the Global Leaders Group (GLG) on AMR, CSE represented the voice of the global South at the United Nations High Level Dialogue on AMR (CSE's director general Sunita Narain is a member of the GLG).

The team is also pushing to fill the gap of a stronger action on disease prevention use of antibiotics, which otherwise the global agencies have not adequately addressed. In the process, the team has successfully highlighted the incoherence in how such use is defined and the position

HONEY: Based on inputs from beekeepers about their livelihood concerns despite the surge in honey demand during the Covid-19 pandemic in 2020, CSE conducted an investigation and exposed the business of adulteration with sugar syrups imported from China and produced in India. It was clear that apart from the health concerns, the honey adulteration was seriously impacting the livelihood of beekeepers as economics and an easy supply chain favoured syrups over pure honey.

It was also clear that this can impact food productivity and biodiversity. The investigation has created immediate and wide interest across the country, with encouraging support received from consumers as well as triggered wide discussions in society. CSE 'asks' were about regulating imports, greater enforcement, traceability and supporting beekeepers. Concerned departments in the government are considering action. There were reports that beekeepers have started getting the required price of about INR 120–130 per kg (double of what they were getting earlier). CSE also engaged with experts and created awareness about the issues of beekeepers and honey collectors from the forest/tribal communities and need for traceability through several webinars. Recently, the Supreme Court of India issued a notice to the Centre and 34 state and Union Territories on a petition seeking directions to check the authenticity of honey being sold in India. The notice was issued to the Union ministries of home affairs; health; commerce; information and broadcasting; the Food Safety and Standards Authority of India; along with states and UTs.

of tripartite agencies (WHO, FAO, OIE and Codex). In addition, the team is also pushing to preserve critically important antibiotic and the importance of preventive approach in containing AMR in the low- and middle-income countries of the global South. CSE is now part of a vocal global network actively engaged in outreach—30 global experts contributed more than 20 articles published on the *DTE* website and 10 video conversations on AMR containment efforts. CSE also helped set terms of reference for an independent panel on AMR evidence and is helping UNEP develop its report on AMR in the environment.

Improving pesticide management in India

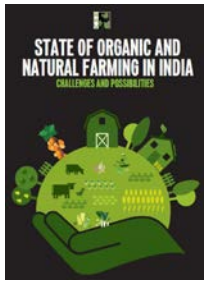
CSE continued its advocacy to push for a ban on hazardous pesticides, including three heavily used class-I pesticides. In May 2020, the ministry of agriculture proposed to ban 27 pesticides (May 2020) due to their toxicity and set up a committee. Similarly, the Pesticides Management Bill, 2020 was introduced in the Rajya Sabha; revised over many years it took on board some key CSE recommendations.

Restricting junk food for health and nutrition

A big win in the year was the December 2020 FSSAI decision to change back-of-pack labelling to include nutrition information as well as labelling on the menu/point of purchase and display regulations. Information on nutrients such as salt, sugar, fat, protein etc. are now to be mandatorily mentioned as per 100g/100 ml or per single consumption and also as their per serve percentage contribution to the daily Recommended Dietary Allowance (RDA). Serving size and number of servings in the package is also to be declared, while 'food service establishments' having Central license or outlets at 10 or more locations will now have to mention calorific value per serving and serving size against the food items displayed on the menu cards or boards has to

be mentioned. The earlier proposed 5 per cent threshold for labelling GM ingredients is excluded from this final notification. The programme is now aggressively pushing for visible, easy to understand 'front of pack labelling' on junk foods to also be mandated, and is part of an FSSAI committee.

Promotion of organic farming



CSE's report *State of Organic and Natural Farming in India: Challenges and Possibilities* (September 2020) contributed to agroecological practices getting national visibility. NITI Aayog invited CSE to a national consultation on the topic, while CSE's research and documentation was widely acknowledged by Andhra's large climate-resilient zero budget natural farming (CR-ZBNF) community, as it was based on detailed field research from 10 districts of Andhra Pradesh. Research interests include pushing for farmer-friendly Participatory Guarantee Systems of organic certification (PGS), particularly the issue of traceability, and on biofertilizers and organic manures.

Solid Waste Management programme

TO ADDRESS MANAGEMENT, TECHNOLOGIES AND REGULATIONS FOR DEALING WITH WASTE GENERATION TRIGGERED BY GROWING AFFLUENCE AND RESOURCE-INTENSIVE CONSUMPTION

THE PROGRAMME'S work in the pandemic period has been marked by a series of background studies conducted by the **School of Circular Economy,** which conducts research focused on contemporary challenges and policy analysis to complement all other programme verticals. These reports have laid a foundation for future work—source segregation, plastics, biomedical and electronic waste and dumpsite management.

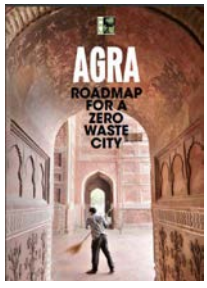
At a broad level, the programme's **'Forum of Cities that Segregate'** is designed to assist urban local bodies to manage waste in accordance with the concepts of circular economy. Despite the Covid-induced slowdown in the year, a total of 51 cities from 17 states are now part of the Forum (cities were identified for inclusion in the network based on Swachh Survekshan 2020 results). This initiative also involves an annual 'Assessment of Cities', in which a 'report card' is prepared for each city, based on the city's performance in dealing with the entire waste value chain. The report also helps identify the specific support that is needed in each participating city on waste management. The Forum report cards will be published in June 2021 and disseminated.

The programme is also documenting best practices adopted by cities on solid waste management for

Niti Aayog, Government of India. The study covers a wide gamut of practices, including source segregation, material processing, sanitary waste management, C&D waste management, compost management, co-processing, best economic model of SWM, community led initiatives, as well as technologies deployed for waste management, including waste to compost, waste to energy, collection, transportation, transfer, sorting etc.

A second objective of the programme is a 'deep dive' effort, in which CSE provides technical and hand-holding support to city authorities in Agra (Uttar Pradesh) and Gurugram (NCR/ Haryana) to help develop these as model cities on waste management.

In **Agra,** the programme signed an MoU in December 2020, which has secured the mandate for CSE to provide broad based policy and technical implementation support to city (and allied authorities) in better managing waste, with focus on the entire municipal solid waste and plastics management value chain. As part of this effort, the programme prepared an 'assessment report' as well as a *Roadmap for Zero Waste* for the city. Aligned with CSE recommendations, Agra authorities have initiated a pilot 'zero waste' initiative in Taj Trapezium Zone (TTZ) comprising six wards; CSE is supporting with communication strategy, IEC materials for source segregation and home composting.



On the specific request of city authorities, CSE initiated studies on strategies on leather and petha (a popular sweetmeat) waste in Agra; the studies will recommend both technology solutions and an implementation strategy. Similarly, an audit of plastics in storm-water drains is being commissioned as part of CSE"s overall efforts to reduce river plastic pollution.

In **Gurugram,** the programme has secured the mandate to work closely with city authorities on a broad range of initiatives on waste management. An assessment report and strategy recommendation for zero waste has been drafted and being reviewed, and a study is being commissioned for plastic audit in storm water drains and strategy for reducing river plastic pollution.

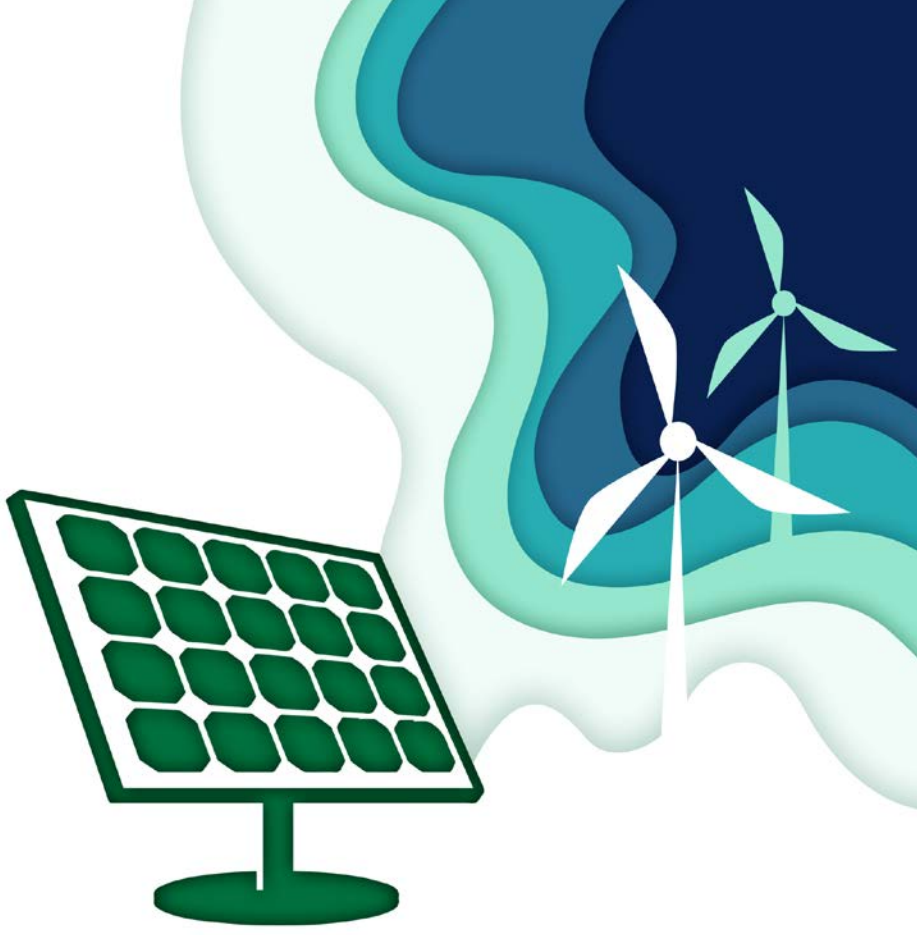
In CSE's engagement in **Africa,** a Memorandum of Understanding (MoU) was signed with the Ubungo Municipal Council, Dar es Salaam (Tanzania), and another with the National Disaster Management Agency, eSwatini (Swaziland).

In **Zanzibar,** as part of its work with the Zanzibar Environmental Management Authority to implement SWM regulation in different municipal councils, the programme completed a scoping study on current waste management practices and has identified key actions for engagement.

In mainland **Tanzania,** as part of its effort to create a regulatory framework to facilitate decentralized waste management, a status report on waste management in the country was prepared and discussed with Ubungo Municipal Council; capacity building and policy support plan has been finalized.

In **Swaziland** (e-Swatini), CSE supports a sector-wide approach integrating ecosystem-based disaster risk reduction measures within the context of waste management. A scoping study on current waste management was completed in the year; the programme will push for integrated SWM by-laws, which the programme had worked on, to be notified.

In the coming period, and learning from the Indian experience of engaging with a wide network of cities, CSE will ramp up efforts to create a global 'Forum of Cities that Segregate', and initiate a pan-Africa and pan-Asia dialogue on plastic waste management (research, and capacity building).



Renewable Energy programme

COMBINES THE ENERGY ACCESS AGENDA (TRADITIONALLY ASSOCIATED WITH CONVENTIONAL ENERGY) WITH THE RENEWABLE ENERGY AGENDA (THAT HAS ENVIRONMENTAL BENEFITS) TO HELP CATALYSE A TRANSITION TO CLEAN ENERGY

THE FOCUS of CSE's Renewable Energy programme on designing relevant policies especially for decentralized, off-grid clean power options. The programme plays a critical role acting as a watchdog on mainstream RE development in India; and highlights important issues towards energy security and sustainability.

Research (series of factsheets) centered on maximizing the potential in key RE sectors, including role of decentralized renewable energy (DRE) in livelihoods generation; repowering of the wind sector in India; energy storage (behind the meter and electric mobility); and on rooftop

solar (accelerating partnership between DISCOMs and the residential sector, and lessons from state performance and policies). A series of stakeholder consultations were conducted, with the participation of industry associations, technology consultants, project developers/IPPs, OEM companies, NGOs and researchers. A report on the status of mini-grids in India, including site inspection of a few projects in Uttar Pradesh, were initiated in the year.

A national-level training programme, Implementing India's Renewable Energy Programme, attracted diverse participation. The team has also published regular commentaries on various important relevant issues in the sector, through blogs, articles in *Down To Earth*; the team has published three specific articles in CSE's seminal publication, *State of India's Environment.*

The focus on mini-grids has given direction to our global work, wherein our efforts seek to build a strong coalition to develop a common framework on a global feed-in tariff regime. The programme is exploring current developments and the potential of **mini-grids in Africa** for affordable clean energy access for the poor. Scoping research has been initiated following CSE's early interventions, which were centered in Tanzania. It is also exploring the role of renewable energy (RE) in pushing the global energy transformation, in particular to see how nationally determined contributions (NDCs) can be used to push action. A factsheet on NDC and RE convergence was published, followed by a stakeholders' consultation.

Climate Change programme

PUSHES FOR LOW CARBON GROWTH PATHWAYS AND MAINSTREAMS CLIMATE CO-BENEFITS WITH THE GOAL TO BUILD A CLIMATE RESILIENT SOCIETY IN INDIA AND TO PUSH AN AMBITIOUS CLIMATE DEAL IN GLOBAL NEGOTIATIONS, BASED ON EQUITY, FAIRNESS AND HISTORICAL RESPONSIBILITY

As part of its engagement with global actions for equity and ambition on climate change, CSE's research on the role and design of the carbon market is focused on several pillars—ambition, net zero, sinks and carbon budget and equity.

CSE has engaged in deliberations on the review of India's next nationally determined contribution (NDC), with research centred on mapping and analysing the equitable distribution of commitment of major emitters such as the G20. Research synthesizes the science as well as the political dynamics of climate negotiations to underscore the need to understand Net Zero in the context of ambitions, use of sinks and negative emission technologies, carbon budget and equity.

Climate Change: Science and Politics

Climate change is real. CSE's seminal publication uses latest statistics, scientific information and data from sources across the world to cover every key aspect of climate change—emissions, negotiations, impacts, Net Zero, use of sinks, negative emission technologies, carbon budget and equity, among many other concepts.

The programme continued to play a key watchdog role and in communicating and building capacity on the science and urgency of climate change. Three training courses were organized in the year, and several articles and blogs were published, including contributions in CSE's seminal publication, *State of India's Environment* (SOE).

Environment Education programme

ENGAGES WITH SCHOOLS, COLLEGES AND GREEN EDUCATORS TO IMPART AN UNDERSTANDING OF ENVIRONMENT-DEVELOPMENT LINKAGES AND TO PROVIDE EASY-TO-USE TOOLS TO HELP PUT IN PRACTICE WHAT IS LEARNED

LOCKDOWN SCHOOLING has changed the education landscape dramatically and quickly, with classrooms shifting to homes, and technology taking centre stage in teaching. Several initiatives were rolled out early in the lockdown in April to engage with the school community.

Online Environmental Summer Camps and skill building E-camps attracted thousands of students. In August, the GSP Audit@Home, a fun online survey for young environmentalists,

was launched. CSE also formally engaged their families to assess their green practices. More than 40,000 students submitted their surveys. Given the success of the home audit survey, multiple versions were launched and the survey was also translated in Hindi.

The former Bihar Deputy CM, Sushil Kumar Modi, launched GSP initiatives in September for schools in the state. Webinars were conducted for schoolteachers and university faculty; online workshops were also conducted for close to 1000 teachers.

A four-week-long online course on environment was launched to help teachers and professionals in the education sector, to explore inter-linkages between environment, development and sustainability. Close to 200 teachers completed the certificate course, which was promoted by Kendriya Vidyalaya Sangathan. Course materials included online learning materials, articles, presentations, videos, real-world case studies, as well as quizzes and webinars.

Green Schools Programme Network

Despite the closure of schools, GSP added over 300 schools to the GSP network. Currently, more than 7000 schools are part of the network.

University programme

Pandemic-induced lockdowns presented challenges in how to maintain continuous engagement with college-level Green Educators' Network. Environmental teaching and learning collateral were sent to 400 educators to guide research and to complement their teaching; FB Live sessions as well as webinars were scheduled. Webinars, designed to be highly interactive, proved popular with the participation of more than 500 faculty and students. These were designed to also allow participants to understand the linkages and implications of the Covid-19 pandemic to environment, climate concerns, urbanization, industrialization, and reforms post-Covid recovery, among others.

Working with schools, remotely

With schools closed for Grades 8 and below, the programme took to online platforms to reach out.

MAJOR FINDINGS, RECOMMENDATIONS

- **Resource materials: Basket of learning and teaching materials developed for both on-site and online engagement with teachers and students**
- **Online community platform for young environmentalists launched for activity- and games-based virtual engagement with children—1,800 students from 115 schools reached.**
- **Green School Programme Audit @ Home: With schools closed, the GSP Audit has been designed and launched as a vehicle for children to understand and improve sustainability practices at home—1,359 students participated from around 194 schools**
- **In April 2020–March 2021, over 1,000 members of the teaching fraternity joined initiatives relevant for them. Considerable content and interactive features were added to the green schools interactive portal, including environment toolkits, quizzes, surveys, posters, photo gallery, and contests, among other engaging collateral.**

Focus on renewable energy in schools

This year, GSP identified renewable energy and waste management as two 'deep dive' themes. The programme worked closely with the education department of Himachal Pradesh—in particular with six schools and four colleges Shimla and Solan districts identified by the state government—to promote energy efficiency, increase the share of renewable energy (RE) in the energy mix, and reduce energy consumption by up to 20 per cent over a period of three years. The initiative provided a unique educational opportunity for students to be aware of the importance of RE, especially rooftop photovoltaics technologies. Detailed surveys and initial assessment report based on secondary research was completed, and with additional data collected in the coming period, CSE will help these institutions devise a comprehensive RE and energy reduction strategy. Site inspections will be determined by schools' opening; the programme will work with local NGOs to facilitate school visits to corroborate the data, wherever needed.

To continue engagement with children despite closure of schools, GSP conducted an online Science Fair on renewable energy for educational institutions in Himachal Pradesh. This included quizzes and a poster competition; a total of 59 schools participated and students from 39 schools submitted posters.

GSP Forum of Schools that Segregate is an exclusive community of 126 schools selected from over 800 schools. These schools from the GSP network had submitted action plans to make their schools zero-waste (when schools reopen), based on data on waste generated from 2019. The action plans calls for students to develop strategies to reduce waste generation, improve waste management for different streams, and also had indicators to assess the effectiveness of measures taken. Students were innovative—measures included incentivizing safai karamcharis to avoid mixing the waste segregated by the school; installing autoclavers for management of Covid-19 waste, etc. The action plans of 126 schools were launched in an online ceremony, where close to 400 participants (students and teachers) from 66 districts and 22 states took the GSP Waste Transformers' Pledge to become zero-waste over the years.

Rural Water—Waste Management programme

ESTABLISH POLICY PRINCIPLES, INNOVATIVE TECHNOLOGIES AND IMPLEMENTATION STRATEGIES FOR SUSTAINABLE WATER AND SANITATION, INCLUDING FAECAL SLUDGE MANAGEMENT (FSM) TO HELP LAY THE FOUNDATIONS FOR A WATER- AND WASTE- PRUDENT SOCIETY

PROGRAMME INTERVENTIONS range from trainings and technical assistance for demonstration projects on alternative, decentralized technologies to policy guidance.

Outreach and capacity building was the focus in the year—a total of six online and one on-site training were conducted for 489 participants on faecal sludge treatment, reuse and sustainable supply of water in toilets. Within the broad arena of rural sanitation, the programme focus is on toilet waste management, including faecal sludge management (FSM). Despite the pandemic slowdown and lockdowns, the programme actively engaged with 550 stakeholders through Webinars; a total of seven publications and regular articles in *Down To Earth*.

In Rajasthan, CSE worked with the departments of Rural Development and Panchayati Raj, to capacitate officials on FSM and the management of wastewater. A study on toilet designs and FSM in Alwar district, Rajasthan was conducted to scale up practices on safe and affordable sanitation. The programme is working with the departments of Rural

Development as well as Panchayati Raj to develop state level guidelines on FSM. Trainings were conducted for officials from Bihar, Rajasthan and Punjab that are planning to move towards the second phase of Swachh Bharat Mission (SBM), with focus on treatment and safe disposal and/or reuse of faecal sludge.

The programme has been designated a Key Resource Centre by the Department of Drinking Water and Sanitation, Ministry of Jal Shakti of the Government of India to build capacities of line officials across the states comprising the Hindi belt.

It is clear that there is much interest across the global south, and in particular **Africa,** for enhanced capacities on rural sanitation management, including FSM. The programme works in Nigeria and Uganda to build capacities of implementing departments, create appropriate policy frameworks, and also provide hand-holding support to implement projects on rural sanitation, including safe toilet technologies, wastewater management, FSM, and sustainable water supply in rural areas. A total of 263 officials of both the countries were trained in the year on these issues.

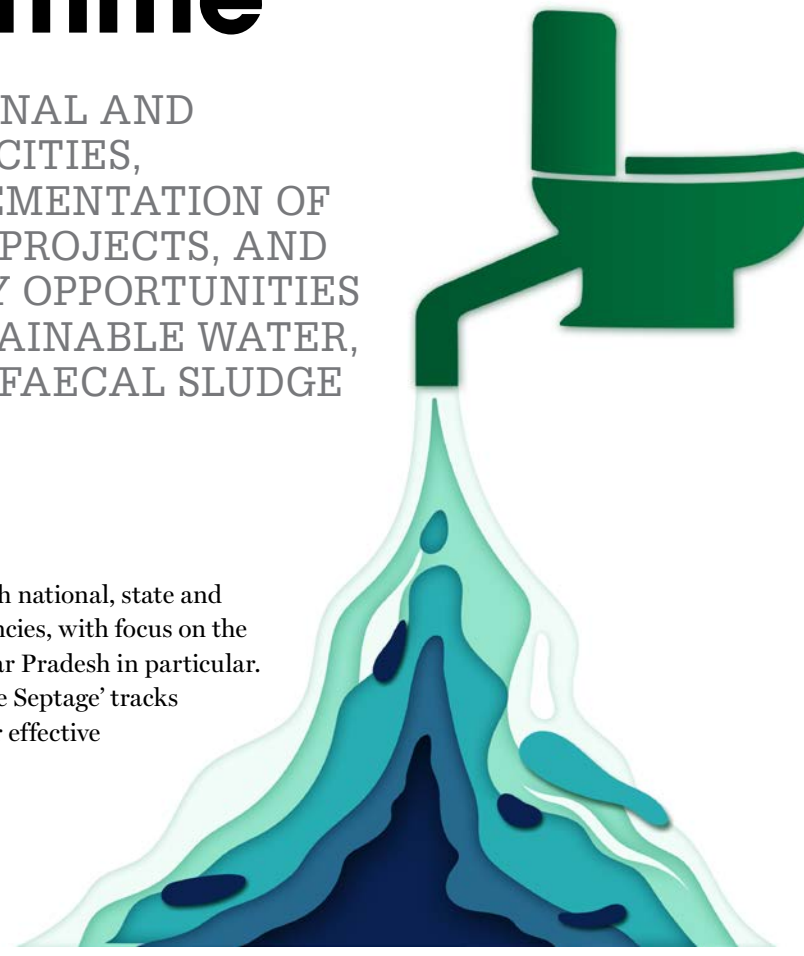
In **Nigeria,** CSE signed an MoU with the Federal Ministry of Environment to develop a strategy for faecal sludge management for rural areas in the country. Customized trainings have helped build a specialized team within the ministry with knowledge on rural sanitation strategies and technologies. An implementation checklist has been put together to guide the selection of sites for model projects on safe sanitation.

In **Uganda,** CSE signed an MoU with the Ministry of Water and Environment to develop a strategy for faecal sludge management in rural areas and on groundwater recharge methods. CSE has worked closely with the Ministry to put together a specialized team to work on the model site on groundwater recharge in the country. CSE has developed a checklist for selection and implementation of model sites on groundwater recharge. Two districts Kiboga and Luwero with water scarcity have been finalized for the implementation of model projects.

The Ministry of Health, Government of **Tanzania,** has expressed interest in collaborating with CSE on a broad range of environmental health and sanitation measures, with focus on rainwater harvesting, sanitation, hygiene, household water safety, and FSM, among other areas.

Urban Water—Waste Management programme

BUILD INSTITUTIONAL AND TECHNICAL CAPACITIES, HANDHOLD IMPLEMENTATION OF DEMONSTRATION PROJECTS, AND LEVERAGE POLICY OPPORTUNITIES TO UPSCALE SUSTAINABLE WATER, SANITATION AND FAECAL SLUDGE MANAGEMENT



THE PROGRAMME works closely with national, state and city-level water and sanitation agencies, with focus on the Ganga River Basin states, and Uttar Pradesh in particular. CSE's 'Forum of Cities that Manage Septage' tracks and handholds cities and towns for effective implementation of faecal sludge and septage management (FSSM) in the country.

In Uttar Pradesh, CSE has a direct presence in the Directorate of Local Bodies to provide hand-holding support to fast track the sanitation and FSSM work in the state. A key role is to build capacities on city sanitation planning for which 10 trainings were conducted for state functionaries. Here, the collaboration with Regional Centre for Urban and Environmental Studies (RCUES) of the University of Lucknow helped amplify the reach to 547 participants drawn from 304 ULBs. Two orientations were also conducted to support district level officers on FSSM.

CSE has set up an online dashboard to track the implementation of measures outlined in the state FSSM policy, which CSE had developed in close collaboration with state authorities.

COVID-19 support

The programme supported urban local bodies (ULBs) as part of the Covid-19 relief measures providing direct relief, through information, education and communication (IEC) initiatives, and by training frontline sanitation workers on dealing with hazardous wastes. A total of 13 trainings were conducted related to Covid-19 support, including orientations and master trainings for sanitation workers, sanitary inspectors and ULB officials on health and safety.

As part of direct relief measures, CSE supported more than 10 ULBs with distribution of PPE kits for sanitation workers and municipal staff, while six ULBs were supported with the provisioning of foot-operated hand-wash stations. A total of four Covid-19 awareness campaigns were rolled out in this period, including engagement with popular media such as popular radio channels, in addition to videos and audio messages.

- **Campaign with RED FM radio channel**
- **Campaign with Radio Mirchi radio channel**
- **Malasur Campaign in Chunar and Bijnor to raise awareness amongst the locals regarding containment, emptying, disposal of feaces and sludge. See also: https://www.cseindia.org/malasur-collaterals-10312**

More than 100 items of IEC and behaviourial change collateral, in Hindi and in English, were disseminated, including the *Pocket Book for Sanitary Inspectors: Health and Safety of Sanitation Workers during Covid-19*. Vacuum truck operators were helped in getting curfew/lockdown passes under the category of 'essential services' so as to ensure continuing sanitation services in the target cities.

Following CSE's engagement with state officials, Odisha, the first state to do so, issued an advisory to 114 urban local bodies to design and implement rainwater harvesting in parks and open spaces in 12 cities in 2020–21.

Working with cities on FSSM

In addition to state-level efforts, the programme works intensively with the cities of Bijnor and Chunar in UP to help scale up interventions across the sanitation value chain.

In **Bijnor,** a key development in the year was that the National Mission on Clean Ganga (NMCG) approved the first pilot for a faecal sludge and septage management (FSSM) co-treatment sewage treatment plant (STP) facility. This will act as model / pilot to provide ground level evidences top help scale up effective and sustainable treatment options for the state, which, as is the case with most urban centres in the Indo-Gangetic region, is overwhelmingly dependent on on-site sanitation. The programme also worked with city authorities in Bijnor to create a framework for the licensing of private de-sludgers in the city—a total of six were commissioned. CSE also created a policy template on FSSM by crating specific by-laws that were approved by the Bijnor city council.

In **Chunar,** the other 'deep dive' city for the programme, CSE had been working intensively with state and city authorities to plan, design and set the operational parameters of a faecal sludge treatment plant (FSTP). This FSTP was constructed and was soft-commissioned in March 2021 and will use evidence-based advocacy for support scale-up of such sustainable low-cost

sanitation technologies. In another pilot, GPS tracking and monitoring systems were installed in vacuum trucks in the city to help schedule, track and improve operational efficiencies of desludging in the city.

Both Chunar and Bijnor—towns supported by CSE—have been recognized in Swacch Survekshan 2020 as among the top three towns along the Ganga for improved urban sanitation.

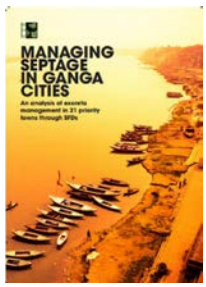
CSE Lab: Evaluating technologies for urban sanitation

The CSE Lab's in-depth study of 12 faecal sludge treatment plants (FSTPs) to evaluate impact of FSSM intervention on river water quality and urban sanitation was presented at a high-level national meeting organized by the Ministry of Jal Shakti. The meeting was chaired by the Secretary, and Chief Secretaries of all states and Pollution Control Boards participated. The Lab has plans to conduct an in-depth assessment of 100 FSTPs and co-processing sewage treatment plants (STPs) across the country to evaluate the efficacy of technologies and processes of faecal sludge management and resource recovery in the country.

SFDs to plan, map sanitation progress in cities

CSE has championed, and extensively used SFDs—'shit flow diagrams'—as a tool to understand, map, analyse and design and plan sanitation (sewage and septage) interventions across the country, and the global South. It is also proved useful to progress across the sanitation value chain. At the national level, key CSE recommendations on SFDs and city sanitation plans were incorporated into the on- and off-site sanitation advisories issued by the Ministry of Housing and Urban Affairs to cities across India to ULBs to sustain momentum built under the Swachh Bharat Mission and support cities' journey beyond open-defecation-free status.

The programme put together a total of 34 SFD reports for cities in India, of which six were prepared by alumni of the SFD online course/virtual training. In addition, three SFD reports were prepared for cities in Bangladesh and seven for cities in South Africa—again by alumni of CSE trainings.



A highlight in the year was the convening of more than 300 key stakeholders, including Chief Secretaries of states of the Ganga Basin and state pollution control boards, together with participants at a national-level webinar in July 2020. CSE's report, *Managing Septage in Ganga Cities: An Analysis of Excreta Management in 21 Priority Towns through SFDs* was released at the event by the director general, National Mission for Clean Ganga (NMCG), which also supports water and sanitation projects along the Ganga River Basin. The report estimated that 60 per cent of the excreta is dumped in the Ganga without any treatment. The report's findings were widely published in leading national news outlets.

School of Water and Waste at AAETI

The School was designed to be a collaborative knowledge and learning platform. In 2021, the programme's partners include Cooperative Research Centre For Water Sensitive Cities (CRCWSC) and Alluvium International, Australia; University of West England (UWE), Bristol;

Housing and Urban Development Department (HUDD) Government of Odisha; Faculty of Architecture and Ekistics at Jamia Millia Islamia; Asian Development Bank and WaterAid Bangladesh, on citywide inclusive sanitation, sanitation safety and SFDs; Department of Public Health Engineering Government of Bangladesh (FSM Cell) and ITN BUET Capacity Building Hub has invited CSE to scale up SFDs; and Emory university on Sanipath tool.

A total of 18 online training programmes were conducted in the year, reaching 1,122 participants, of whom 199 international participants. The programme was able to provide 850 scholarships for participants to attend various online and residential trainings (570 were for ULB officials alone).

Webinars proved popular during the extended lockdown period of the pandemic, attracting the participation of more than 10,000 people from 20 countries and 250 cities in the 14 webinars conducted by CSE and hosted close to 50 Indian and international experts. Topics ranged from water sensitive cities, green infrastructure, decentralized approaches to water and wastewater management, water and sanitation safety planning, digital tools in the sanitation sector, and SFDs, among others. An Alumni workshop brought together 170 alumni, and 17 inspiring cases on how the School's alumni contributed to change on the ground—ranging from individual initiatives to institutional-level impacts.

A total of five research-based publications were produced by the programme in the year, together with 30 blogs and articles with close to 100,000 page views, to support improvements across urban sanitation value chain, including:

1. Handbook for Operation and Maintenance of Decentralized Wastewater Treatment Systems
2. Managing Septage in Ganga Cities
3. Roadmap for Implementation of Water-Sensitive Urban Designing and Planning in Delhi
4. Roadmap for Implementation of Water-Sensitive Urban Designing and Planning in Odisha
5. A Pocket Book for Sanitary Inspectors: Health and Safety of Sanitation Workers during Covid-19 (English) for sanitation workers (Hindi and English)

Research, case studies and reports were uploaded on global learning platforms. A total of 15 case studies on nature-based decentralized wastewater treatment systems were uploaded on MOUNT 2.0, a global online aggregator platform for various sustainable technologies on wastewater. Case studies were also uploaded on the global platform C-GINS, a repository in support of green infrastructure.

Global interventions

Despite travel restrictions, programme partnerships with key partner countries in Africa have continued remotely, with workshops, knowledge sharing conclaves, e-courses, and webinars.

In **South Africa,** a 'deep dive' country, CSE worked with the Water Resource Commission (WRC is lead partner in the country) to support the country's push to mainstream Water Sensitive Design and Planning in its spatial planning practices, and institutionalize 'Shit Flow Diagrams' as a benchmarking tool for urban local bodies across country in all town/cities.

CSE and WRC engaged with master trainers to support eight ULBs to prepare City Sanitation Plans; SFDs will be used to benchmark progress. An international webinar, Mainstreaming SFDs into Practice in Africa' was conducted in this period. A feasibility study was by WRC

evaluated the potential of using water-sensitive design principles to strengthen water planning for the Waterberg industrial complex. WRC published a policy guideline/strategy—a report—*Countrywide shit flow diagram: Establishing Excreta Flows in South Africa* to institutionalize SFD preparation including capacity building of ULBs.

A highlight in this year of the pandemic was the online conclave on Green Infrastructure, organized in partnership with the University of West England (UWE), Bristol. It brought together 150 academicians, researchers and practitioners to discuss tools, approaches and knowledge sharing on how 'green infrastructure' and 'blue-green spaces' in cities affect health and wellbeing. More than 1,000 watched the event through live streaming on Facebook, YouTube and Linkedin.

As part of **pan-Africa** intervention, CSE, in partnership with country partner in Ghana, Council for Scientific and Industrial Research (CSIR), trained consultants to prepare SFDs for five cities. Two international courses on preparing SFDs were conducted in the year for water and sanitation practitioners and planners from the global South, Africa, South Asia and from at least five other countries. A help-desk was set up to support ULBs and other in Bangladesh, South Africa and Pan Africa for SFD and FSM.

Capacity building remains the focus of CSE's efforts in **Bangladesh**—three trainings on SFDs were conducted in the year with country partner WaterAid Bangladesh, which brings together government agencies, NGOs, and water and sanitation sector participants on citywide sanitation, including FSM and SFDs.

Media Resource Centre

MRC DISSEMINATES TOPICAL, RELEVANT ENVIRONMENTAL INFORMATION AND DATA OF PUBLIC INTEREST, CONVENES SECTOR EXPERTISE AND THOUGHT LEADERSHIP FOR INFORMED ENVIRONMENTAL ADVOCACY

IN 2020–21, CSE's Media programme organized a series of thematic workshops to build research, perspective and reporting skills of journalists writing for Hindi news outlets. The Manthan series, Manthan-1: Media workshop for Hindi journalists (28–29 November 2020), and Manthan-2: Media workshop for Hindi journalists (30 January 2021) focused on understanding and visualizing numbers and data, and using them to report and write more effectively, for e.g. on stories related to pollution in Indian rivers such as the Ganga.

Outreach, information dissemination

A total of 78 press releases were disseminated in the year, reaching out to national, international as well as regional and language news media—online as well as print editions. CSE's weekly newsletter goes out to 309,724 subscribers.

NEWS MEDIA VISIBILITY: CSE remained very visible in the news—both print media as well as in the electronic media (TV) in the year. A total of 1,136 articles and programme segments directly mentioned CSE research, or used CSE staff as sources for stories. Coverage included mainstream print and electronic media (national as well as regional, including vernacular language news media), as well as newspapers and TV news shows outside India (80 mentions), including in news media in Africa (23 mentions).

CSE's weekly newsletter goes out to **309,724 subscribers**

The programme also runs a **Hindi Language Feature Service,** wherein select articles from *DTE* are syndicated and sent to subscribers every fortnight. Prominent content partners include *Dainik Jagran* (Delhi and Chandigarh editions), *Hindustan*, *Amar Ujala*, *Dainik Bhaskar* (Bhopal and Nagpur editions), *Rajasthan Patrika*, *Daily Chhattisgarh*, *Nav Bharat Times*, *Jansatta*, *Prabhat Khabar*, *Naya Savera*, *Aaj*, *News Laundry*, *Dainik Tribune*, *Web Varta* and *Vishwavarta* newspaper.

1,136 articles and programme segments directly mentioned CSE research or used CSE staff as sources for stories

ONLINE PRESENCE: Investments and attention to strengthening CSE's online presence was useful in continuing engagement with stakeholders, sector specialists as well as with the general public. In the year, CSE websites attracted a total of 1,349,973 visitors, with more than 3 million (3,074,811) page views. *Down To Earth* remained a popular dissemination channel for research and perspective—the site alone attracted 12,431,820 users, with close to 28 million (28,603,039) page views in the year. A total of 4,363 stories were published on *DTE* (Print, Web and Hindi editions) in the year.

Down To Earth website attracted **12,431,820 users with close to 28 million pageviews in the year**

The Media programme was active online in conducting many initiatives to engage with media in the global South, especially in Africa. A highlight in the year was the Fourth African Conference of Science Journalists 2020 (17–20 November 2020).

CSE websites attracted **1,349,973 visitors with more than 3 million page views**

The Media programme together with *Down To Earth* (*DTE*), participated in the Fourth African Conference of Science Journalists, organized as a virtual event by MESHA-Kenya, the Nairobi-based media collective and a key media partner in Africa. Discussions focused on the 1,000-km Odyssey of the *DTE* correspondent Vivek Mishra with migrant labourers and

4363 stories published on DTE in the year

A highlight was the release of the Annual State of India's Environment 2021 (SOE-21), considered India's most credible annual collation of analysis, news and views on environment and development, backed by more than 30 years of research and reportage. SOE-21 covers subjects ranging from Forest, Climate Change, Covid and Biodiversity to Industry, Waste, Habitat, Water, Air Pollution, Renewable Energy and Rural Development, besides a comprehensive data-based analysis of how India's states are faring on sustainable development. The publication was released at a unique online launch event on 25 February 2021, by some of the leading environmental and civil society activists, writers, thinkers, journalists and academics from across the country.

Telling stories: Multimedia outreach

The pandemic forced everyone indoors, and CSE's activities went online—meetings, trainings, webinars and roundtables. CSE's multimedia team edited 145 online lectures and produced several training films in this period. Support was also provided to hosting webinars to release reports, convene stakeholders round a topical issue and for press conferences. Webinars were livestreamed onto different platforms, including YouTube and Facebook. An overwhelming majority of videos produced—close to 100—were on Covid-19. The team travelled with reporters to Dharavi to produce a special report on how Asia's largest slum was faring at the height of the pandemic. The team also produced on-ground reports on the locust attacks, and tracked the heartbreaking phenomenon of 'reverse migration', of those in the informal workforce trudging back to their villages to escape the pandemic and to find a modicum of security.

What we did

180 Videos for DTE

145 Videos for online training

60 Webinars

Figures compared to 2019–20

2020–21 2019–20

Total views	Total watch time	Subscribers added
9.6 million	524,100 hours	116,000
6.7 million	333,800 hours	97,200
40%	57%	19%

workers walking back to their homes.

As part of its wider outreach to African journalists on issues that have resonance across the global South, a webinar and online workshop, `Reporting on Climate Change' for African Journalists, (July 9, 2020), was organized in association with the Ghana Journalists for Environment, Science, Health and Agriculture (GJESHA). The event provided insights into current and critical concerns in climate change, with specific reference to Africa and offered skill-building sessions for the 40 reporters and development communicators drawn from across Africa, including Ghana, Uganda, Nigeria, Liberia, Kenya, Senegal, South Africa and Gambia.

Working with CSE's Food and Toxins programme, and in order to build policy and public understanding of an emerging issue that needs to be addressed, the Media programme organised an online Media Workshop on Antimicrobial Resistance in Africa (Aug 27-28, 2020) in partnership with the Ministry of Health and Child Care (MoHCC) of Zimbabwe and the National Association of Freelance Journalists (NAFJ) of Zimbabwe. The briefing workshop for 40 journalists focused on the rising global public health threat of Antimicrobial Resistance (AMR) that is known to impact healthcare, food safety, nutrition security, livelihood and attainment of several Sustainable Development Goals.

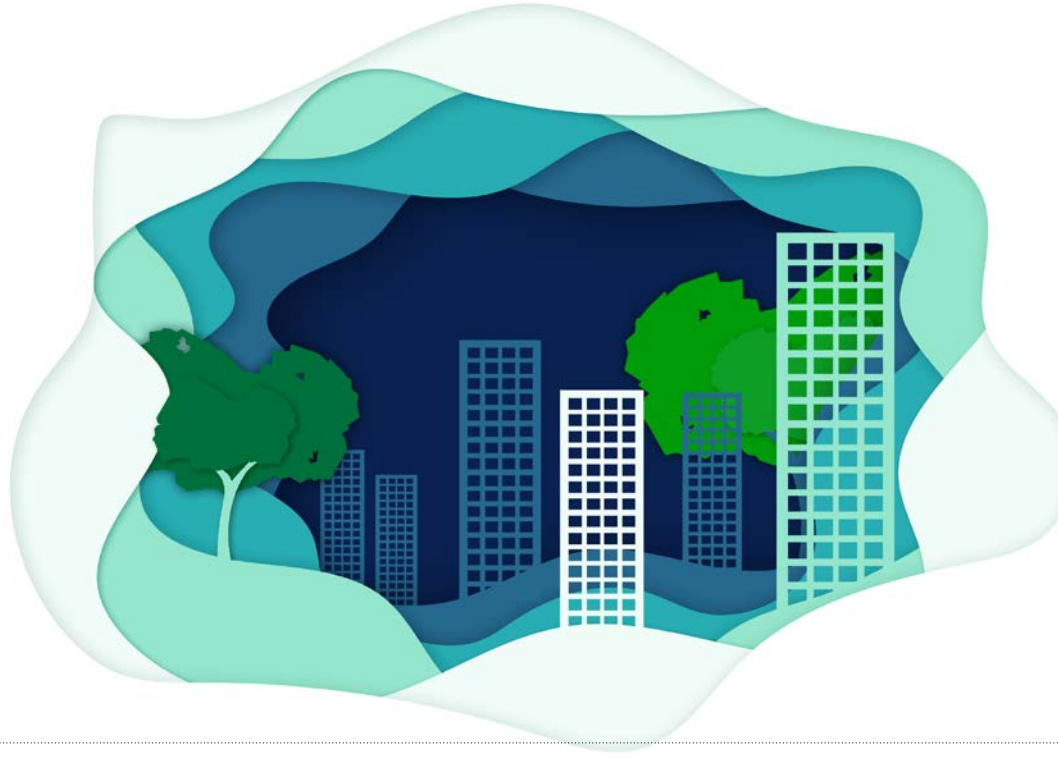
The programme trained journalists and development communicators. Two e-courses, Using data for effective communication on environment, climate and development (September 2020 and February 2021, 102 pax /44 female) focused on data sourcing, analysis and visualization for non-profits, NGOs, communication professionals and policymakers were hosted by CSE's data centre in the year, one in partnership with the Committee on Data of the International Science Council (CODATA), France, as the knowledge partner.

Sustainable Habitats programme

THE PROGRAMME CHAMPIONS RESOURCE EFFICIENCY IN THE BUILDING AND CONSTRUCTION SECTOR, AND PUSHES FOR POLICIES AND PRACTICES TO HELP TRANSITION URBAN HABITATS THAT ARE SUSTAINABLE AND AFFORDABLE FOR ALL

THE PROGRAMME connects with a wide network of institutions and sector professionals in states to mainstream policies on thermal comfort, equitable access to public services and liveability in the **affordable housing sector.** CSE studies show that current affordable housing schemes do not incorporate thermal comfort in their design or construction, which will lead to poor uptake.

The focus is on promoting convergence between the National Cooling Action Plan and energy efficiency requirements of the Energy Conservation Building Code (ECBC-R) in affordable housing. Measures are designed to influence the use of alternative building materials and walling



assembly, layout and building design to improve liveability, reduce heat load on buildings and improve thermal comfort to reduce air-conditioned hours. CSE pushes for the inclusion of thermal comfort in the ministry of urban development (MoUD) performance guidelines, and also in the building approval system. This effort has now expanded across typologies of housing such as rental and self-built housing.

CSE research contributed to the efforts of the Building Materials and Technology Promotion Council (BMTPC) for 'lighthouse projects' to serve as living laboratories for alternative materials and construction technologies. Webinars on thermal comfort in mass housing, and on low-income urban settlements engaged institutions such as ministry of housing, BMTPC, housing and urban development corporation (HUDCO) and the confederation of real estate developers (CREDAI). Four publications—*Beyond the Four Walls of PMAY*, *Optimizing the Third Skin*, *Fiscal Strategy for Affordable Housing* and *Guidelines for Affordable Housing in Telangana* were widely shared to push for thermal comfort, resource efficiency and liveability to be mainstreamed. CSE is also using the opportunity offered by BMTPC's Affordable Sustainable Housing Accelerators (ASHA) programme on future materials and construction technologies to integrate thermal comfort criteria into housing.

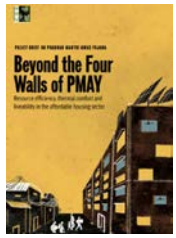
Telangana launched an Integrated Township Policy that requires all buildings to be ECBC-compliant (both residential and commercial). This move is the state's first step towards thermal comfort and demonstrates transition from voluntary to mandatory pursuits. CSE documented the alternate technologies implemented in housing schemes in select states, mapped performance characteristics and provided the results as part of a 'guidelines document' to authorities in Telangana. The guidelines will be notified post their official launch in Hyderabad. Following outreach and training, Telangana enhanced its codes and now performance characteristics are being incorporated by the technical designated nodal agency.

Affordable rental housing

Announced by the ministry of housing and urban affairs (MoHUA) amidst the lockdown and the massive 'reverse migration' of the urban poor trudging back to their villages, the affordable rental housing complex (ARHC) scheme seeks to provide decent rental housing at affordable rates to the urban poor near their work sites. The scheme also includes a technology innovation grant to promote the use of alternative materials and construction technologies.

This measure provides a strong framework to address the criteria of both thermal comfort as well as location-related housing affordability in the country. As part of the housing ministry's operational guidelines, the scheme is being adopted by states by allotting vacant dwelling units to beneficiaries. Chandigarh, Uttar Pradesh and Uttarakhand are the first states/UTs to allot rental housing units. CSE actively engages with Chandigarh authorities in the implementation of the ARHC scheme, with the added components of thermal comfort and liveability indices. Similarly, CSE has finalized a methodology for green recovery linked with enabling thermal comfort and skill development in the housing sector in the states of Odisha and West Bengal.

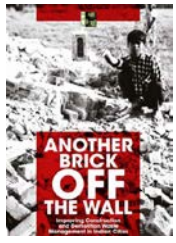
The **'Forum of Green Campuses'** helps universities evaluate and plan for green initiatives.



Beyond the Four Walls of PMAY stressed the need to revisit housing demand in India and its estimation methods. The mass exodus of migrant workers/poor in major towns has demonstrated the inequities that exist for shelter in our cities. This, together with the lack of granular data on incomes, city-level data on affordable housing options, and on locational and liveability characteristics only worsens decision making, leading to the phenomena of intense reverse migration. Incorporation of indicators such as price-to-income ratio to realistically estimate housing demand, have the potential to effectively address housing affordability.

Each member of the Forum, comprising more than 100 colleges and universities across India, has prepared baselines and plans for environmental action; CSE will provide knowledge support to implement and monitor these plans. These efforts have been acknowledged by the ministry of human resource development, MHRD, and the Mahatma Gandhi national council for rural education.

As part of its broad support to clean air action plans in cities and states, the programme builds capacities and provides technical inputs to select cities to better manage **construction & demolition (C&D) waste** and dust control practices. Focus cities include Gurugram in Haryana and four 'non attainment cities of Jaipur, Udaipur, Jodhpur and Kota in Rajasthan. Deep-dive assessments were conducted for these five cities and hyper-local action plans for Gurugram and Jaipur were submitted to city authorities, who were also trained on implementing these plans. Similar assessments and knowledge support are planned for Kolkata, Howrah in West Bengal, as well as Bhubaneswar and Cuttack in Odisha. CSE's publication *Another Brick off the Wall* reports the status of implementation of C&D rules in multiple cities.

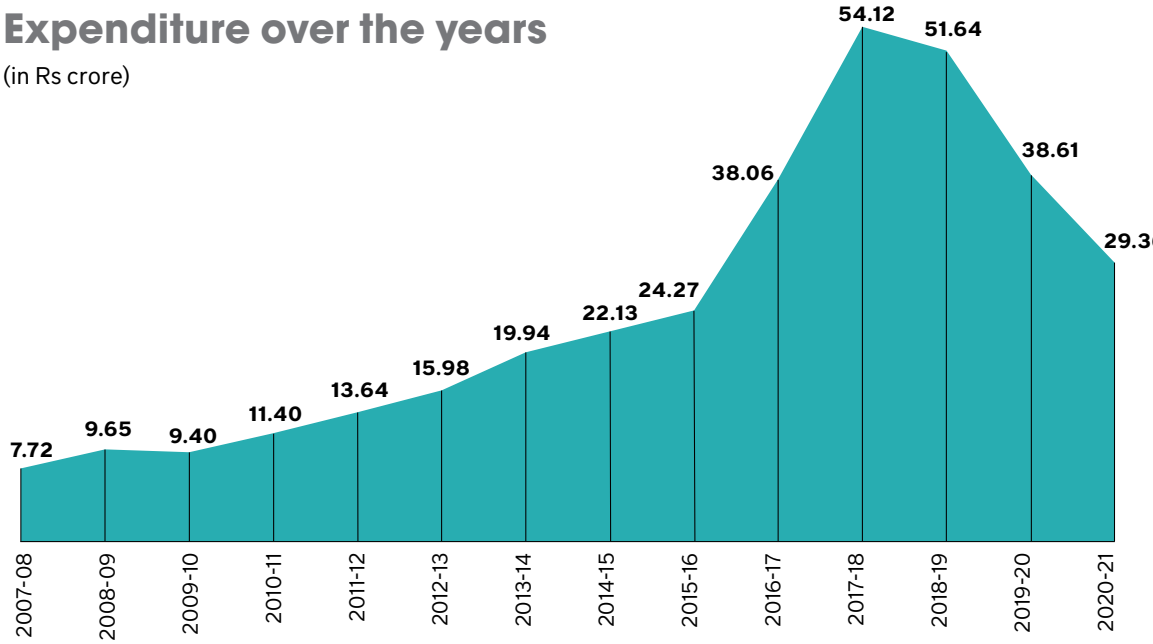


Financial report (2020–21)

Expenditures: 2007–08 to 2020–21

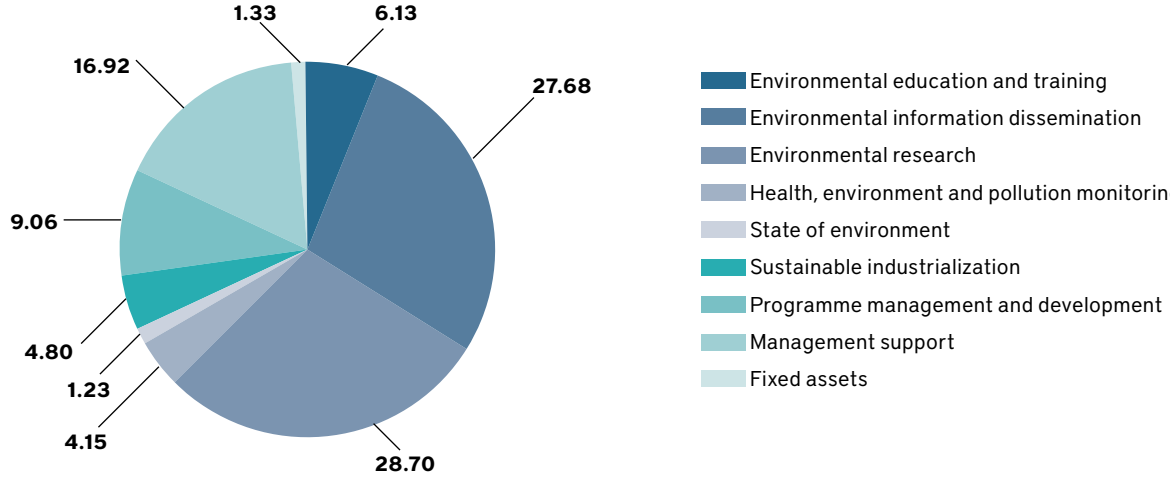
Expenditure over the years

(in Rs crore)



Project-wise expenditures

FY 2020–21 (% of total expenditure)



List of donors 2020-21

Swedish International Development Cooperation Agency (SIDA)
National Mission for Clean Ganga, Government of India
Bill and Melinda Gates Foundation
MacArthur Foundation
Childrens' Investment Fund Foundation
Heinrich Boll Foundation
Norwegian Ministry of Foreign Affairs
Shakti Sustainable Energy Foundation
Charity Aid Foundation
Misereor
GIZ, Germany
University of West England
Dr Kamla Chowdhury Endowment
United Way of Bengaluru
Ministry of Housing and Urban Affairs, Government of India

Individual donors 2020–21

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ANNEXURES
KEY OUTPUTS

Clean Air programme

Key outputs

PUBLICATIONS

- Report on Audit of Pollution Under Control (PUC) Programme in Mumbai Metropolitan Region
- Report on Audit of Pollution Under Control (PUC) Programme in Kolkata
- Enhanced CAP paper for Jaipur region
- Mumbai region: Enhanced clean air action plan
- Policy brief on fiscal stimulus in light of Covid-19—Green Recovery Path for air pollution mitigation and strategy for finance commission
- *Review of Covid response in African countries for operating public transport and Guidance framework (223 downloads)*
- *Policy Brief: Summer Air pollution and pandemic (1579 downloads)*
- Restructuring of air quality action plans for 6 cities (Asansol, Barrackpore, Durgapur, Haldia, Howrah, Raniganj) in West Bengal
- *Policy Brief: Electricity and pandemic (2545 downloads)*
- *Report: What to do with old vehicles? Towards effective scrappage policy and infrastructure (1516 downloads)*
- Policy Brief: Strategy for Inspection of On-Road BS-VI Vehicles New Challenges
- Ethiopia: Finalize clean air action plan for Addis
- *Winter pollution analysis—Delhi NCR (348 downloads)*
- *Winter pollution analysis—Kolkata and West Bengal cities (360 downloads)*
- *Winter pollution analysis—Mumbai and Maharashtra cities (250 downloads)*
- *Winter pollution analysis—Jaipur and Rajasthan cities (547 downloads)*
- *Air pollution analysis—Southern metro cities (351 downloads)*
- *Winter pollution analysis—IGP cities (327 downloads)*
- Delhi-NCR report card: action taken and agenda going forward
- *Review of 2020 Winter Air Pollution in 115 Indian cities and five regions (North, East, Central & West, South, and Northeast) (455 downloads)*
- *Air pollution analysis—Delhi NCR update (125 downloads)*
- Mumbai Metropolitan Region: Strategy for enforcement of clean air action plan in the transport sector

TRAINING PROGRAMMES

- *Orientation Workshop: Challenge of mitigating toxic emissions from vehicles: Special focus on on-road emissions (New Delhi, 26 June 2021) 380 pax /90 female*
- Online Training of PUC operators —in collaboration with the Maharashtra Transport Department (New Delhi) 83 pax / 3 female
- *Strategies to Reduce Emissions from Transport (SRET)—Online Course (New Delhi, 5–18 September 2020) 38 pax /14 female*
- *Multi-sector Strategies for Clean Air Action in Cities of India (New Delhi, 27 November –12 December 2020) 31 pax/18 female*
- *Strategies to reduce emissions from transport (New Delhi, 13–26 February 2021) 21 pax/8 female*
- *Understanding Traffic Impact Assessment (New Delhi, March 15-18, 2021) 13 pax / 7 female*

MEETINGS, SEMINARS, WEBINARS

- *An Environmental Agenda for the Future (Online, 5 June 2020) 2268 pax /927 female /1,341 viewed through streaming service*
- *Restarting Public Transport in Africa (Online, 30 June 2020) 515 pax /215 female /4,000 viewed through streaming service*
- *Online Round Table: Another brick off the Wall* (Online, 25 August 2020) 809 pax /219 female /3,562 viewed through streaming service
- *Vehicle Scrappage and End-of-Life: A programme for 'green' recovery* (Online, 28 September 2020) 411 pax / 95 female/2,744 viewed through streaming service
- *Online Pan-Africa Network Dialogue on clean vehicles and fuel quality roadmap* (Online, Nairobi, 30 November 2020) 25 pax /5
- *Webinar: Decarbonizing Transport* (Online, 17 December 2020) 170 pax / 50 female
- *Enhanced Strategies for Clean Air Action in Jaipur Region* (Online, 23 December 2020) 105 pax /18 female /916 viewed through streaming service
- Meeting with transport department on on-road emission management in Maharashtra (Jan. 2021) 60 pax
- Workshop on Clean air action plan for 8 cities of Andhra Pradesh (Anantapur, Chittoor, Elluru, Kadapa, Ongole, Rajahmundry, Srikakulam, Vizianagaram) (February 2021) 60 pax /3 female

Sustainable Mobility programme

Key outputs

PUBLICATIONS

- *Policy brief on Future of Public Transport in the context of Covid-19 challenges* (852 downloads)
- *Economic stimulus/ packages for Public transport and push for mobility reforms with special focus on bus transport post lockdown* (321 downloads)
- Assessment of implications of the Pandemic disruption for EV mobility program with focus on EV bus and para-transit and suggest ways to integrate Electric mobility with Pandemic recovery
- Study to improve bus services in Kolkata: Guidelines for modernizing city bus operations and maintenance for higher efficiency and service quality
- Comprehensive performance assessment of FAME–II programme along with its alignment with State level electric vehicle initiatives
- Assessment of electric city bus programs under FAME II and identify the strategies for post Covid expansion
- Mobility Clean Air Action plan for 8 cities of Andhra Pradesh
- Status of action in Delhi NCR and focus on priority strategies for the new normal: mobility strategies
- Policy Pathways for ZEV Policy Mandate
- Nigeria paper on National Urban Transport Policy (NUTP)
- Policy brief on green recovery for public transport
- Mobility strategy for Mumbai Region, Transport Department, Government of Maharashtra

MEETINGS, SEMINARS, WEBINARS

- *Reinventing Public Transport and Mobility in the 'New Normal'* (Online,25 May 2020) 875 pax /311 female /3712 viewed through streaming service
- Stakeholder Meeting on 'Accessibility of Settlements' to create a network on grass root groups in cities for study dissemination (online, 239 pax)

Food and toxins programme

Key outputs

PUBLICATIONS

- Framework for a drug take-back programme and EPR in Zambia
- Zimbabwe Prioritized One Health AMR NAP
- *State of organic and natural farming in India: Challenges and Possibilities*
- *Body Burden: Antibiotic Resistance - State of India's Health* (DTE)

MEETINGS, SEMINARS, WEBINARS

- *Pandemics and Industrial Food Animal Farming* (Online, 10 June 2020) 966 pax / 331 female
- *Antibiotic use in the Indian dairy sector* (Online, 29 July 2020) 38 pax / 7 female
- *Online Media Workshop ANTIMICROBIAL RESISTANCE (AMR) IN AFRICA: A GROWING SCOURGE* (No Data)
- *State of Organic and Natural Farming in India Challenges and Possibilities* (3250 registrations)
- *Online Workshop on Implementation Status and Reprioritization of Zimbabwe's One Health Antimicrobial Resistance National Action Plan* (Online, 29 September 2020) 37 pax /21 female
- *One-Health Action to Preserve Antibiotics* (Online, 20 November 2020) 187 pax / 85 female
- *FOOD FRAUD* (Online, 3 December 2020) 60 pax / 15 female
- *The Honey Trap* (Online, 4 December 2020) 455 pax / 200 female
- *Under Threat - The bee-keeping industry in India* (Online, 10 December 2020) 212 pax / 90 female
- *Webinar: Honey: The Other Source* (Online, 23 December 2020) 278 pax / 115 female / 2860 viewed through streaming service
- *Webinar on food traceability -Where Does Our Food Come From?* (Online, 29 January 2021) 230 pax / 83 female / 1209
- Online meeting on PGS certification for organic food (Online, 25 February 2021) 53 pax /3 female
- *Front-of-Pack (FOP) Labelling on Packaged Foods* (Online, 4 March 2021) 280 pax / 120 female
- *Containing the Silent Pandemic - AMR* (Online, 24 March 2021) 132 pax /61 female /1,850 viewed through streaming service
- Zambia: Online meeting with stakeholders on draft report on EPR in drugs/antibiotics in Zambia (small meeting) (5 pax /2 female)
- Zambia: Stakeholder workshop to finalize drug take-back and Extended Producer Responsibility in Zambia (18 pax /5 female)

Solid Waste Management programme

Key outputs

RESEARCH REPORTS, STUDIES

- Segregate, Segregate, segregate (2020): How to make it work for solid waste management (Book release by Mr Durga Shanker Mishra, Secretary, MoHUA)
- Managing plastic waste in India (2020): Challenges and agenda
- Managing biomedical waste in India (2020): Covid-19 and beyond
- E-waste management in India (2020): challenges and agenda
- Another brick off the wall (2020): Improving construction and demolition waste management in Indian cities
- Clean it right (2020): Dumpsite management in India

MEETINGS, SEMINARS, WEBINARS

- *CSE Webinar: Managing Urban Solid Waste* (Online,3 July 2020)
- *Webinar to discuss the adoption of decentralized waste management in Tanzania* (Online,25 August 2020) 17 pax /3 female
- *Webinar—Managing Plastic Waste in India: An agenda for action* (Online,24 September 2020) 1500 pax /584 female
- *CSE webinar on Dumpsite management in India* (Online,3 December 2020) 235 pax /64 female
- *Managing Biomedical Waste in India* (Online,19 January 2021) 346 pax /153 female / 3177 viewed from streaming service
- *Roadmap for a Zero waste Agra* (Online, 4 February 2021) 13 pax /5 female
- *Webinar - E-Waste Management in India: Challenges and Agenda* (Online, 26 February 2021) 241 pax /54 female
- Tanzania: meeting to finalise list of collaboration for future (on zoom) 10 pax /4 female
- Webinar: Address the students of Manipur University (MU) (Department of Forestry and Environmental Studies) 50 pax /20 female
- NDMA-CSE discussion on Work Agenda based on Scoping Report-eSwatini—11 pax /3 female

TRAININGS

- *Segregation and Composting for Sustainable Waste Management* (New Delhi, 30 June–14 July 2020) 35 pax /17 female
- *Source Segregation—How to Do It ? Online Course* (27–28 July 2020) 40 pax /20 female
- *Sustainable Plastic Waste Management* (7–21 August 2020) 46 pax / 19 female
- *Sustainable E-Waste Management (SEWM)* - Online Course (5–10 November 2020) 52 pax /18 female
- *Online Training Programme Biomedical Waste Management in India* (New Delhi, 1–22 January 2021) 32 pax /18 female
- Training for Forum City and Zero Waste City officials for instituting a sustainable solid waste management system following the principle of circular economy (AAETI, 17–19 March 2021) 29 pax /4 female

Renewable Energy programme

Key outputs

PUBLICATIONS

- *Factsheets* (Mini grid, Storage, Solar Rooftop) (1,365 downloads)
- *Factsheet on solar manufacturing*
- *Fact sheets on status of RE* (Sector overview, Solar, Wind, Biomass) (1,365 downloads)
- *Research & Factsheet: Comparison of Employment Potential of Renewable (Centralized and Distributed/ Decentralized)* (183 downloads)
- *Factsheet: Research and policy analysis with rigorous stakeholders' interaction to identify issues and challenges of Solar Rooftop Penetration in Household sectors* (220 downloads)
- *Factsheet: Research and analysis —Why existing Repowering of Wind Policy Does not Excite the Business Sectors; The Way Ahead* (287 downloads)
- *Factsheet: Energy Storage— Demand Side (Behind the meter) and Mobility* (147 downloads)

MEETINGS, SEMINARS, WEBINARS

- *Roundtable 1: Role of Renewables in Creating Employment Opportunities* (Online, 24 November 2020) 205 pax /51 female
- *Roundtable Report 2: Wind Repowering* (Online,2 December 2020) 190 pax /73 female
- *Roudtable 3: Rooftop Solar: Accelerating Partnership between Discoms and the Residential Sector* (Online,9 December 2020) 174 pax /52 female

- *Round Table: Energy Storage—Demand Side (Behind the meter) & Mobility Storage* (Online, 11 January 2021) 253 pax /63 female/ 2821 viewed through streaming service
- *Roundtable: Repowering Wind - Tamil Nadu experience* (Online, 28 January 2021) 103 pax /27 female / 745 viewed through streaming service
- *Rooftop Solar: Lessons from State Policies and Performance* (Online, 12 February 2021) 195 pax /51 female /3,266 viewed through streaming service

TRAINING PROGRAMMES

- *National Training Programme: Implementing India's Renewable Energy Programme (AAETI,* 2–4 March, 2021) 15 pax / 2 female

Climate Change programme

Key outputs

PUBLICATIONS

- ↘ *Climate Change: Science and Politics*
- ↘ *Report on Agrometeorological Advisories in India* (2,000 downloads)

TRAINING PROGRAMMES

- *Mainstreaming Climate Change towards COP-26 and Beyond* (AAETI, 23–25 March 2021) 26 pax /11 female
- *An Introduction to Climate Change: Science, Politics and Impacts (*New Delhi, 18 November– 1 December 2020) 45 pax /16 female
- *An Introduction to Climate Change: Science, Politics and Impacts* (New Delhi, 15–26 February 2021) 47 pax/29 female

MEETINGS, SEMINARS, WEBINARS

- *CSE Webinar—Weather and the Farmer* (Online, 23 April 2020) 274 pax /77 female/1,200 viewed through streaming service

PARIS AGREEMENT 5-YEAR ANNIVERSARY

- *US Elections: Trump, Biden or Climate Change: Who Will Win?* (Online, 5 November 2020) 94 pax /30 female/4,300 viewed through streaming service
- *Trump Vs Biden: What does the US exit from the Paris Agreement mean? DTE Interview of Shazneen Cyrus Gazdar*
- *Climate change discussion: Paris Accord and beyond, what is the road to COP26 Glasgow?*

Environment Education programme

Key outputs

PUBLICATIONS

- ↘ Assessment Report of the status of RE in partner state, HP (existing policies and guidelines, financial support, ground realities of energy usage, best practices in schools, etc.)
- ↘ GSP Manual on Waste Management for schools
- ↘ Activity Handbook
- ↘ Toolkit on RE for students that will include a variety of resource material
- ↘ Zero-waste: Environmental Toolkit on Waste Management: Design and release of toolkit, including manual on how schools can go zero-waste

MEETINGS, SEMINARS, WEBINARS

- *Green Schools Programme - Summer Camp* (Online, 6 June 2020) 1000 pax / 500 female

TRAINING PROGRAMMES

- Workshop with Church of State India (15–17 September 2020) 48 pax /34 female
- Training (online) (14–16 October 2020) 24 pax /17 female
- Training (online)—2 with Bharti Foundation (13 October 2020) 140/59 female
- Training for KVS (online): 7 nos. (for 100 teachers) (14 October–13 November 2020) 59 pax /34
- Training for KVS (online): 8 (100 teachers will participate in the four-week course) (New Delhi, 1–30 November 2020) 66 pax/40 female
- Training for KVS (online): 9 (100 teachers will participate in the four-week course) (20 January 2021) 50 pax/34 female
- *GSP Skill Building E-Camp* (29–30 June 2020) 273 pax / 125 female
- Online certification course on environment education (12–22 August 2020) 50 pax / 31 female
- Trainings for Kangra education department officials (online) - 5 nos. (27–29 October 2020) 32 pax / 22 female
- Trainings for Chamba officials

–3 nos. (online) (13 October 2020) 30 pax /13 female
- Capacity building workshop (Online)–6 (Sikkim) (5–6 November 2020) 26 pax /6 female
- GSP: teaching training for AP (20 January 2021) 26 pax /6 female
- Online Course on Environment for Indian Institute of Forest Management, IIFM (11–14 January 2021) 26 pax /9 female
- HP/RE: Capacity building workshop for teachers on RE (Feb. 10–12 February 2021) 30 pax /11 female
- GSP: teacher training for Himachal Pradesh (March 3-5, 2021) 25 pax /12 female

Rural Water–Waste Management programme

Key outputs

PUBLICATIONS

- *Toolkit-Managing faecal sludge in rural areas* (1,766 downloads)
- Uganda: Report on the state of containment and disposal and agenda for policy change
- Uganda: Report on state of groundwater and policy strategies for augmenting resource through rainwater harvesting
- *Hindi Toolkit–Managing faecal sludge in rural areas* (101 downloads)
- Draft 1–Policy on reuse of wastewater and faecal sludge for Uganda
- Strategy paper on reuse and disposal of faecal sludge in Alwar district, Rajasthan
- Nigeria: Implementation plan (checklist) for safe rural sanitation/reuse of faecal sludge in Local Government Areas (counties)

TRAINING PROGRAMMES

- *Safe toilet design and treatment and reuse of faecal sludge in the rural areas of Nigeria* (18 December 2020–5 January 2021) 57 pax /18 female
- *Safe toilet design and treatment and reuse of faecal sludge in the rural areas of Uganda* (20 December–8 January 2021) 58 pax /16 female
- *Advanced training on groundwater recharge and rainwater harvesting for officials of Uganda* (5–18 February 2021) 60 pax/17 female
- *Toilet Technologies and Faecal Sludge and Water Management in Rural Areas* (20 February–6 March 2021) 101 pax/37 female
- *Advanced training n toilet design and treatment and reuse of FS for officials of Rajasthan* (13–15 March 2021) 21 pax /1 female
- *Faecal Sludge Management in Rural Areas-1* (July 29– Aug. 12, 2020) 106 pax / 21 female
- *Faecal Sludge Management in Rural Areas -2* (30 Oct–12 November 2020) 86 pax /26 female

MEETINGS, SEMINARS, WEBINARS

- *Webinar on Toolkit-Managing Faecal Sludge in Rural Area*s (Online, 7 May 2020) 569 pax /200 female /viewed through streaming service
- *The Sanitation challenge in Africa* (Online, 27 June 2020) 183 pax /56 female/2,130 viewed through streaming service
- *Webinar on awareness of water conservation and rainwater harvesting with Ministry of Water and Environment, Uganda* (Online, 5 October 2020) 147 pax /64 female /3,557 viewed through streaming service
- Roundtable discussion on status of rural sanitation and FS with key stakeholders including ministry officials (Online, 18 March 2021) 40 pax /9 female

Urban Water–Waste Management programme

Key outputs

PUBLICATIONS

- *A Pocket Sized Handbook for Sanitary Inspectors to ensure Health and Safety of Sanitation Workers during COVID-19* (4331 downloads)
- *2020 SFD Factsheets for 13 cities: Communication Collateral* (1,711 downloads) Agra , Bhagalpur , Cuttack , Haldia, Jamalpur, Jhansi, Kanpur, Nasik, Prayagraj, Sircilla, Unnao, Chunar, Bijnor
- *Managing septage in Ganga cities*
- *Roadmap for implementation of water sensitive urban designing and planning in Delhi*
- *Handbook on O&M of DWWTs in Hindi* (1,491 downloads)
- *Roadmap for implementation of water sensitive urban designing and planning in Odisha*
- *Handbook for operation and maintenance of decentralized wastewater treatment systems*
- *A Pocket Book for Sanitary Inspectors: Health and Safety of Sanitation Workers during Covid-19 (English) for sanitation workers*
- Prepare SOP on analysis of dry sludge & compost–Chemical
- Prepare SOP on analysis of dry sludge and compost–Microbiology
- *Report on 'Performance evaluation–How fecal sludge*

treatment plants are performing (865 downloads)

TRAINING PROGRAMMES

- *Bangladesh: International Online Training programme on Faecal Sludge Management* (FSM) (1-9 February 2021) 57 pax /14 female
- *Basics of Decentralized Wastewater Treatment and Local Reuse* (2–30 December 2020) 108 pax / 35 female
- *Safe Water, Sanitation and Health for all during and post COVID-19* (28 October–30 November 2020) 56 pax /35 female
- *Basics of GIS and Remote Sensing for Water and Sanitation* (26 October– 6 November 2020) 63 pax /26 female
- *City-Wide Sanitation Planning* (7 September–10 October 2020) 87 pax /36 female
- Urban Lake Management (28 August–29 September 2020) 74 pax /42 female
- *Green Infrastructure—Effective Measures to Manage Urban Flooding and Water Supply* (2–30 September 2020) 77 pax /44 female
- Decentralized Waste Water Treatment (1–26 June 2020) 130 pax / 48 female
- *Water Woes* (4 May–8 June 2020) 96 pax /52 female
- *Advanced Training on Decentralized Wastewater, Faecal Sludge and Septage Management* (AAETI, 8–12 March 2021) 16 pax/2 female
- *Planning and Designing of Rainwater Harvesting Systems* (AAETI, 10–12 February 2021) 26 pax/ 6 female
- Training support to District level officers for FSSM orientation (January 2021) 13 pax /7 female
- *Online Trainings for Onsite and Offsite Management of Sewage for Citywide Sanitation* (13–14 January 2021) 82 pax /10 female
- *Green Infrastructure—Effective Measures to Manage Urban flooding and water supply* (2–30 September 2020) 23 pax/11 female
- *Onsite and Offsite Management of Sewage for Citywide Sanitation* (22–23 December 2020) 77 pax /4 female
- *Onsite-Offsite Management of Sewage* (15–16 December 2020) 57 pax /2 female
- *Onsite and Offsite Sewage Management for Citywide Sanitation* (25–26 November 2020) 53 pax / 1 female
- *Online Training 'Onsite and Offsite Sewage Management for Citywide Sanitation* (New Delhi, 10–11 November 2020) 56 pax /1 female
- *Onsite and Offsite Sewage Management for Citywide Sanitation* (15–16 October 2020) 48 pax /4 female
- *Offsite and Onsite Management of Sewage for Citywide Sanitation* (Oct. 8–9 October 2020) 48 pax /4 female
- *International training on preparation of SFD* (21 September– 2 October 2020) 23 pax/7 female
- *Onsite and Offsite Sewage Management for Citywide Sanitation* (New Delhi, 23–24 September, 2020) 90 pax /2 female
- *Onsite and Offsite Management of Sewage for Citywide Sanitation* (New Delhi, 3–4 September 2020) 92 pax /2 female
- *Capacity building and knowledge support for Preparation of Water and Sanitation Safety Plans in West Bengal* (1 August–30 September, 2020) 27 pax /7 female
- *The SaniPath Tool: Assessing Exposure to Fecal Contamination in Urban Settings* (New Delhi, 17–28 August 2020) 59 pax / 20 female
- *Onsite and Offsite Sewage Management for Citywide Sanitation* (New Delhi, 13–14 August 2020) 50 pax /10 female
- *State-level training for Master Trainers: Health and Safety of Sanitation Workers during COVID-19 crisis* (New Delhi, 4 July 2020) 22 pax / 2 female
- *Preparation of Shit Flow Diagram (SFD)* (New Delhi, 27–29 July 2020) 24 pax / 8 female
- *International Training Programme on Water Sensitive Urban Design and Planning* (New Delhi, 14–22 July 2020) 45 pax / 22 female
- Training on Shit Flow Diagram (New Delhi, 4–29 May 2020) 80 pax / 30 female
- Sensitisation & Needs Assessment Workshop (16 August 2020) 39 pax / 3 female
- City-level training for sanitation workers for Covid-19 in Chunar (June 2020) 112 pax /34 femal
- *COVID-19 Awareness Drive in Uttar Pradesh* (May–June 2020 (Lucknow, 1–30 June 2020) 45 pax /15 female
- Training on advisories and best practices of Covid-19 for low income settlements with updated advisories and good practices for COVID-19 response (Online, May 2020) 60 pax / 5 female
- *Orientation of Sanitation Workers for COVID-19 in Bijnor, Chunar & Lucknow* (Bijnor, 27 May 2020) 210 pax /100 female
- State Training for Master Trainers—Health and Safety of Sanitation Workers during COVID-19 (UP, May 2020) 19 pax/3 female
- *Orientation of Sanitation Workers for COVID-19 in Lucknow* (Lucknow, 27 May 2020) 47 pax /13 female
- Online course on FSM (Online, April 2020) 22 pax /10 female
- *https://www.cseindia.org/best-practices-from-covid-19-*

response-10105

MEETINGS, SEMINARS, WEBINARS

- *Treating Faecal Sludge in India* (Online, 7 April 2020) 114 pax /22 female
- *Mainstreaming SFD into practice in Africa* (Online, 30 April 2020) 85 pax /31 female
- *Going Digital in Storm-water Management: Towards Water Sensitive Cities* (Online,12 May 2020) 420 pax /150 female /769 viewed through streaming service
- *Going Digital in Storm-water Management: Towards Water Sensitive Cities* (Online,12 May 2020) 420 pax /90 female
- *Dialogue cum Consultation Workshop on 'Water Sensitive Urban Design & Planning: Mainstreaming Rainwater Harvesting in town and cities of Odisha'* (Online, 27 May 2020) 150 pax /35 female
- *Capacity Building cum Need Assessment Sensitization on Water-Sensitive Urban Design and Planning* (Online,18 June 2020) 39 pax /3 female
- Training Programme—Sensitisation cum Need Assessment Workshop—Online Course (Online,19 June 2020) 39 pax /3 female
- Online Impact Workshop cum Master Class (Online,29 June 2020) 163 pax /58 female/125 viewed through streaming service
- *Safe Water, Sanitation and Health for all during and post COVID-19* (Online, 7 July 2020) 519 pax /207 female
- *Water-Sensitive Urban Design and Planning (WSUDP) in South Africa* (Online, 14 July 2020) 45 pax /22 female
- *Mainstreaming Faecal Sludge and Septage Management in Ganga Basin* (Online, 22 July 2020) 300 pax /80 female
- *Decentralized Wastewater Treatment and Local Reuse for Citywide Sanitation and Improved River Health* (Online, 13 August 2020) 750 pax /260 female
- *Two-part Webinar Series on 'Towards Water- Sensitive Cities— Experience of Approach and Practices in Australia and India'* (Online, 18 November 2020) 1,000 pax /351 female
- *Two-part Webinar Series on 'Towards Water-Sensitive Cities - Experience of Approach and Practices in Australia and* (Online, 25 November 2020) 1400 pax /254 female
- *Online International Knowledge Conclave on Green Infrastructure* (Online, 17 December 2020) 218 pax /68 female
- *Geographic Information System (GIS) & Remote Sensing: Tools for planning water sensitive cities and green infrastructure* (Online, 6 January 2021) 64 pax/18 female
- *Webinar on Sustainable Urban Water Management—Challenges and Opportunities in mainstreaming Climate Adaptation* (Online, 5 March 2021) 420 pax /160 female/813 viewed through streaming service
- *CSE's Participation in ADB Organized E-Marketplace Event* (Online, 15 March 2021) 500 pax /100 female
- Development Partners meeting for Health and Safety of sanitation workers during COVID-19 (Online) 25 pax /2 female
- 5th City Sanitation Task Force meeting in Chunar (Online) 24 pax /3 female
- 5th City Sanitation Task Force meeting in Bijnor (Online) 18 pax /1 female
- Alumni Impact Workshop-cum-Master Class: Capacity building initiative for Citywide Water and Sanitation Management (Online) 300 pax /113 female
- CSE-NMCG annual review meeting (Online) 10 pax /2 female
- Mid Term Review of SFD Phase 3 (Africa and South Asia (Online) 15 pax /5 female
- Annual Retreat_ Allaince Group (Online)

Sustainable Habitats programme

Key outputs

PUBLICATIONS

- *Building Wise*
- *Beyond the Four Walls of PMAY* (1622 downloads)
- *Strategy paper to mainstream thermal comfort and resource efficiency in affordable housing based on a value chain framework* (498 downloads)
- *Optimizing the 3rd Skin, modified version after round table feedback* (321 downloads)
- Draft guidelines on affordable housing for sustainability and thermal comfort for State 1. (Shakti Walling)
- Paper on the use of simplified ECBC-R to rate the performance of mass constructed affordable housing
- Plan for Jaipur on C&D waste management
- Quick Policy Factsheet—Global Building Energy Disclosure
- Quick Policy Factsheet—Building Energy Disclosure
- *C&D waste paper* (1662 downloads)

MEETINGS, SEMINARS, WEBINARS

- *Housing people not diseases in the face of COVID-19* (Online,16 April 2020) 183 pax /80 female /2,167 viewed through streaming service
- Webinar for mainstreaming thermal comfort and energy efficiency for academia (Online,5 May 2020) 100 pax /50 female
- *A CSE Webinar & Round table: Enabling Thermal Comfort in Mass Housing* (Online,29 September 2020) 734 pax /296 female
- *India's Low-Income Urban Settlements* (Online, 31 March 2021) 239 pax /82 female
- Round table in state 2 to discuss draft paper on thermal comfort performance of affordable housing (Mysuru + Bengaluru) 264 pax /171 female
- Webinar with Government Construction Companies on Housing Construction Post Covid 19 (Online) 55 pax
- Webinar with Government Construction Companies on Housing Construction Post Covid 19 (Online) 20 pax /5 female

TRAINING PROGRAMMES

- Regional sensitization programme for academicians in Karnataka (Karnataka, May 2020) 264 pax /171 female
- Strengthen and influence rating systems for government construction companies (May 2020) 15 pax /5 female
- *Online training on Progressing thermal comfort, resource efficiency and sufficiency in mass housing* (New Delhi, 30 May 2020) 264 pax /171 female
- North-east Regional Dialogue on Green Campus (June 2020) 215 pax /115 female
- Regional sensitization programme for academicians in Telangana/Punjab (Punjab, June 2020) 192 pax /107 female
- Strengthen and influence rating systems for government construction companies (July 2020) 48 pax /4 female
- Faculty Development Programme with academician/ Online Training (July 2020) 275 pax /135 female
- Training on Sustainable Building Design Technique for CPWD Architects (September 2020) 28 pax /8 female
- Capacity building programme for government construction companies and urban professionals (November 2020) 18 pax /4 female
- Capacity building programme for government construction companies on housing, thermal comfort and liveability (AAETI, 3–6 January 2021) 57 pax / 5 female
- Capacity building programme on C&D waste management for Rajasthan, Gurugram and other at AAETI (AAETI, 23–25 February 2021) 22 pax /2 female
- Capacity building programme on housing/thermal comfort and liveability (AAETI, 23–25 March 2021) 24 pax/12 female
- *Sustainability Commitment in Educational Campuses, Online Training* (New Delhi, July 16–17 2020) 101 pax /58 female
- *Online training Sustainable Building Design Processes* (New Delhi, 21–26 September 2020) 27 pax / 16 female
- *Training Programme—Data Collection, Assessment and Planning for a Green Campus (DCAP)* Online Course (New Delhi, 14–18 December 2020) 68 pax/39 female

Executive board

M.S. Swaminathan

is one of India's foremost agricultural scientists and is best known as the scientific leader of the 'evergreen revolution movement' in India. His pioneering work in the field of agricultural science and food security has earned him several awards, both national and international, including the Padma Shri, Padma Bhushan, Padma Vibhushan, Ramon Magsaysay Award, World Food Prize, and the Tyler Environment Award, to name a few. He has held several distinguished positions, including Direcor General of the Indian Council of Agricultural Research and of the International Rice Research Institute, and Secretary of the Ministry of Agriculture and Cooperation.

G.N. Gupta

joined the Board of CSE in 1998 and is among the core group that provides guidance on institutional development issues, particularly on financial issues.

As a member of the Indian Revenue Service, he has held several key positions in the revenue department of the Ministry of Finance. He served as the Chairman of the Central Board of Direct Taxes, India's highest tax-making body, and also as a Director in the Planning Commission. He currently serves on the Board of several companies and offers consultancy services on issues related to direct taxes.

Raj M.S. Liberhan

Raj Liberhan, management and financial expert, has varied experience, with a significant range of responsibilities at the senior level in government, public sector and NGO environments, building and sustaining organisations, programmes and missions with sector-specific objectives and services. He served as Chief Executive of the India Habitat Centre, New Delhi, for 15 years and helped create a unique institutional mechanism.

A.K. Shiva Kumar

is a development economist and professor. He teaches various courses at Harvard University, Indian School of Business and the Young India Fellowship. He served as the Director of the International Centre for Human Development, New Delhi. In addition to serving as an advisor to UNICEF–India, he was a member of India's National Advisory Council. He is a recipient of the MacArthur Fellowship, Mason Fellowship, and the Certificate of Excellence in Teaching from Harvard University.

Prof. Ramaswamy Sudarshan

Prof. Ramaswamy Sudarshan has had distinguished careers in the domains of research, development programming and governance. He has a Master's degree in Economics from the Delhi School of Economics and a Master's degree in Politics from University of Oxford. He worked with UNDP from 1991 to 2011. In 2012 he joined the O.P. Jindal Global University as the founding Dean of the Jindal School of Government and Public Policy. He has an impressive track record of publications comprising books, articles, and UN policy reports, reflecting his interdisciplinary research, teaching and policy experience in development programmes, human development, law, governance, institutions and policy.

Bharati Chaturvedi

is an environmentalist and writer. She is the founder and director of Chintan Environmental Research and Action Group. Bharati has served on various committees of the Government of India, including the Expert Committee on Plastic Waste set up by the Ministry of Environment and Forests to finalize rules for plastic waste handling, and a Task Force for social security for the informal sector set up by the Ministry of Labour and Employment. She has also been involved in consultations about the Indian government's Hazardous Waste Strategy and Electronic Waste Rules.

Bharati has a Master's degree in history from Delhi University, and a Master's in international public policy from the School of Advanced International Studies at Johns Hopkins University. She is a Leadership in Environment and Development (LEAD) Fellow and has previously received the Sarai Urban Fellowship. She also serves on the board of several non-profit organizations in India.

Sunita Narain

has been with the Centre for Science and Environment since 1982. In her years at the Centre she has worked both to analyse and study the relationship between environment and development and to create public consciousness about the need for sustainable development.

Her research interests range from global democracy, with a special focus on climate change. to the need for local democracy where she has worked on forest-related resource management and water issues. She serves on the boards of different organizations and on governmental committees and has spoken at many forums across the world on issues of her concern and expertise.

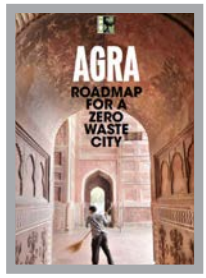
Sunita Narain has devoted a great deal of her time to develop the management and financial support systems needed to make CSE strong and sustainable. She has greatly contributed to the institution of management systems that ensure that CSE produces quality work consistently.

Jagdeep Gupta

is currently the Executive Director, Planning and Operation. She brings a rare and befitting mix of a pure science background with a degree in management, indispensable to understanding the nature of work and the ethos behind an organization like CSE. Over the years she has shown her excellence in acquiring the best talents, developing a wholesome system of monitoring the research outcomes, providing the best infrastructural facilities, developing a wide array of important contacts, and widening the outreach of CSE's research publications. Her forte has been her human management skills, which gives her the edge to handle problem situations with a balanced and unbiased approach. Needless to say, it requires a lot of grit and tenacity to manage so many divergent verticals, which she does with immense ease. She stands as a strong pillar with huge institutional memory and has great contributions to the growth of CSE in many different ways.

CSE Publications (April 2020–March 2021)

RESEARCH REPORTS

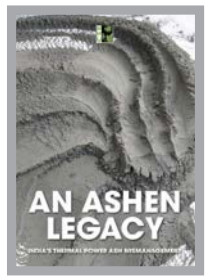


Agra: Roadmap for a Zero Waste City

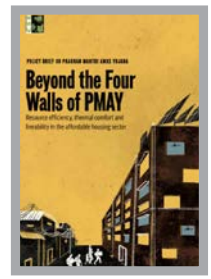
Agro-residue for Power

Managing Biomedical Waste in India

Reducing CO2 Footprints of India's Coal-Based Power

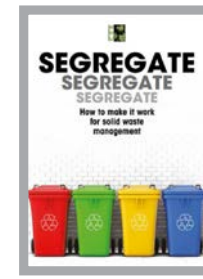


An Ashen Legacy–India's thermal power ash mismanagement



Beyond the Four Walls of PMAY

Role of Renewables in Creating Employment Opportunities



Segregate, segregate, segregate: How to Make it Work For Solid Waste Management

Roadmap for Implementation of Water-Sensitive Urban Plan and Designing in Delhi

E-waste management in India

Rooftop Solar: Accelerating Partnership Between DISCOMS and the Residential Sector

Wind Repowering: Need for a Kickstart

Fiscal Strategy for Affordable Housing

How Good Are the Best: A Survey of Waste Management in Ranked Indian Cities

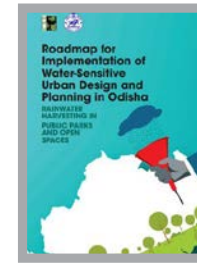
Repowering in Tamil Nadu

Energy Storage: Behind-the-Meter and Electric Storage

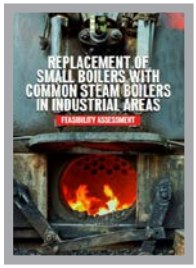
Rooftop Solar: Lessons from State Policies and Performance

What to Do with Old Vehicles?

Pandemic and a Case for Green Recovery: Lessons from the Transport Sector

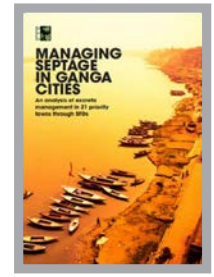


Roadmap for Implementation of Water-Sensitive Urban Design and Planning in Odisha

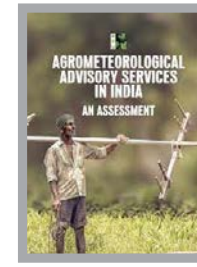


Replacement of small boilers with common steam boilers in industrial areas

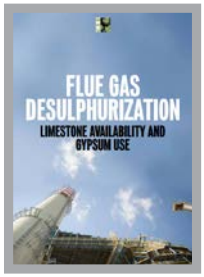
Capital Gains: Clean Air Action and the Way Ahead in Delhi-NCR



Managing Septage in Ganga Cities



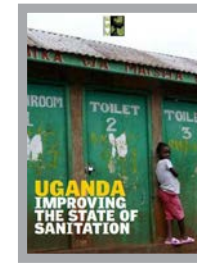
Agrometeorological Advisory Services in India



Flue Gas Desulphurization: Limestone availability and gypsum use

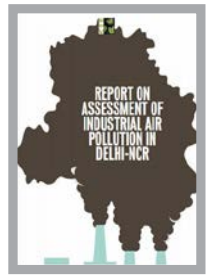
DMF implementation status and emerging best practices

First Run

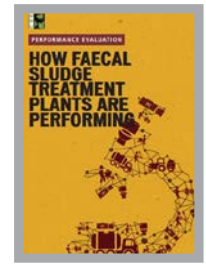


Uganda: Improving the State of Sanitation (pre-changes from government

Assessment of industrial pollution in Jaipur

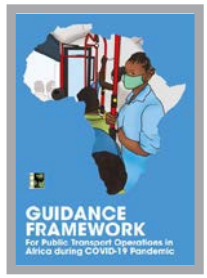


Assessment of industrial pollution in Delhi-NCR

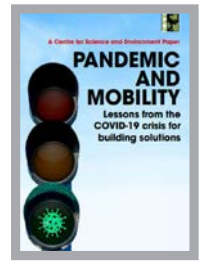


How Faecal Sludge Treatment Plants Are Performing

Meeting Emission Norms



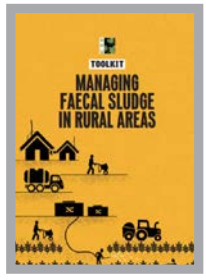
Guidance Framework For Public Transport Operations in Countries of Africa during COVID-19 Pandemic



Pandemic and mobility: Lessons from the COVID-19 crisis for Building Solutions

Managing Plastic Waste in India

Power and the Pandemic: How the COVID-19 Outbreak Unmasked Delhi's Electricity Guzzling and Thermal Discomfort



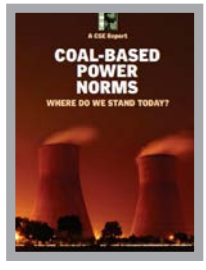
Managing Faecal Sludge in Rural Areas

State of organic and natural farming in India: Challenges and Possibilities

Environmental Quality Monitoring in Smart Cities

Framework for a drug take-back programme and EPR in Zambia

Zimbabwe Prioritized One Health AMR NAP



Coal-Based Power Norms: Where DO We Stand Today?

Uganda: Policy Strategies to Augment Groundwater through Rainwater Harvesting

Another Brick off the Wall

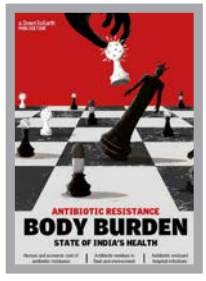
- Hindi translation of Managing Faecal Sludge in Rural Areas
- Clean It Right: Dumpsite management in India
- What to Do with Old Vehicles?
- Clean Air Blue Skies: Air Pollution during a Summer of Lockdowns
- Coal-based Thermal Power Plants: Discounting the Effects of Sulphur Dioxide Emissions on Air Quality
- Handbook for Corrective Maintenance and Audit of CEMS and CEQMS
- Inspection and Audit Manual, Ghana
- Training on safe toilet technologies and faecal sludge management in rural areas (Material)
- How to Use GI Compendium
- GSP Activity Handbook
- Waste Management in Schools: A Manual for Schools to Become Waste-Wise
- Enhanced Strategic Plan Towards Clean Air in Mumbai Metropolitan Region
- Enhanced Strategic Plan Towards Clean Air in

Mumbai Metropolitan Region (Industrial Pollution)
- National Urban Transport Policy, Nigeria
- Report on the Assessment of Pollution under Control (Puc) programme in Kolkata
- Report on the assessment of pollution under control (PUC) programme in Mumbai Metropolitan Region
- Guidance Framework: Improving Operational Efficiency of Bus services through Better Fleet Management—A Case Study of Two Depots of West Bengal
- 6 West Bengal Clean Air Action Plans
- Guidelines for Affordable Housing in Telangana
- Clean Air Action Plan Addis Ababa
- Enhanced Strategic Plan towards Clean Air in Jaipur division, Rajasthan
- Comprehensive Report on the Compliance Status of Coal Based Thermal Power Plants in Rajasthan
- Analysing Industrial Fuel Policy in Delhi and NCR States
- Uganda: Reuse of Wastewater and Faecal Sludge
- State Environment Plan West Bengal
- Clean Air action Plan Addis Ababa
- State Environment Plan West Bengal
- Gurugram: Preparing for Hyper-local Clean-Air Action
- State of Toilets: Disposal and Reuse of Faecal Sludge and Wastewater in Alwar District, Rajasthan
- Replacing Diesel-Based with Gas-Based Generators: Faridabad Industrial Areas
- State Environment Plan West Bengal Part 1 and 2 with updated table
- Strategy for inspection of on-road BSVI vehicles: New challenges
- Policy brief 2020-21: BS VI leapfrog: What More to Do
- Optimizing the Third Skin: Energy Efficiency and Thermal Comfort in Affordable Housing
- Coal-based power in Southeast Asia
- Reducing CO2 Footprints of India's Coal-Based Power
- Energy Storage: Behind-the-Meter and Electric Storage
- Factsheet: Rooftop solar
- 8 Renewable energy Factsheets
- Environmental Norms for Coal-Fired Power Stations Factsheet
- Renewable Energy: Employment Opportunities
- Repowering of the Indian Wind Sector
- Rooftop Solar
- EIA: A Requirement Beyond Clearance (Brochure)
- Faecal sludge management in rural areas (Flyer)
- Waste transformers (Posters of 128 schools and material)
- Climate Change: Facts and Politics
- Building Wise

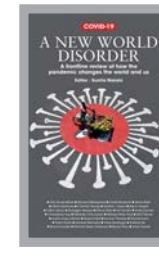
Down To Earth Publications

State of India's Environment 2021

State of India's Environment 2020 in Figures (E-Book)



Body Burden: Antibiotic Resistance—State of India's Health



Covid-19: A new world disorder (E-Book)

India, Global Media Presence (April 2020–March 2021)

Particulars	National	Regional	Global/ Africa	Total
Clean Air And Sustainable Mobility	336	81	43	460
Climate Change	35	0	24	59
Coal-Based Thermal Power Plants	40	4	2	46
Industrial Accidents	10	9	1	20
Communication and Outreach	90	52	10	152
Environmental Education	3	2	0	5
Food Safety and Toxins	120	65	24	209
Mining and Governance	11	2	0	13
Renewable Energy	6	2	1	9
Solid Waste Management	34	8	13	55
Sustainable Buildings and Habitat	5	2	2	9
Sustainable Water Management and Sanitation	40	15	17	72
Articles by Sunita Narain	22	1	0	23
Written on Sunita Narain	4	0	0	4
Awards	3	0	2	5
Miscellaneous	68	25	17	110
Grand Total	**827**	**268**	**156**	**1251**

Mentions in Electronic Media

NDTV India–CSE
Spokesperson: Sunita Narain
Programme name: Special Programme 2 May 2020
In a conversation with Sunita Narain, Director General over The Cycle of Change

CNN News 18–CSE
Spokesperson: Sunita Narain
Programme name: News 7 May 2020
Sunita Narain, Director General, CSE Panel Discussion over styrene chemical leak from polymers factory

CNN News18–CSE
Programme name: News 16 May 2020
Dr Rosa Abraham CSE Research Fellow Panel Discussion over Migrants' Plight: Hungry and exhausted–Anything to get home: when will it end

NDTV India–CSE
Spokesperson: Anumita Roy Chowdhary
Programme name: News 23 May 2020
Anumita Roy Chowdhary Talk on social distancing. 'Cycle Of Change'

NDTV 24x7–CSE
Spokesperson: Anumita Roy Chowdhary
Programme name: News 23 May 2020
Anumita Roy Chowdhary, in conversation over Environment

NDTV Prime–CSE
Spokesperson : Arunima Roy Chowdhury
Programme name: Special 23 May 2020
Conversation with Arunima Chowdhury over Focus on Electric Mobility

India Today: CSE
Spokesperson : Sunita Narain
Programme name: News 24 May 2020
Panel discussion on The Lockdown Dilemma

NDTV 24x7: CSE
Spokesperson: Sunita Narain
Programme name: News 27 June 2020, 19:38:30
Conversation with Dr Sunita Narain, Director, CSE on locusts attack in Delhi
https://www.youtube.com/watch?v=Rszbcb6c988

India Today: CSE
Spokesperson : Sunita Narain
Programme name, News 20 July 2020, 21:08:00
Conversation with Sunita Narain DG, CSE Panel Discussion on Assam flood fury
https://youtu.be/tuBp1qLOOLY

NDTV 24x7:CSE
Spokesperson: Sunita Narain
Programme name: News 19 August 2020, 22:03:00
Conversation with Dr Sunita Narain, Director CSE on Climate Change

NDTV 24x7:CSE
Spokesperson: Sunita Narain
Programme name: News 28 August 2020, 17:42:34
In conversation with Sunita Narain about UN chief's alert and appeal to India

ABP News : CSE
Spokesperson: Anumita RoyChowdhary
Programme name: News 2 September 2020, 09:21:10
Anumita RoyChowdhary speaking on air quality in Delhi.

India Today–CSE
Spokesperson: Anumita RoyChowdhary
Programme name: News 2 September 2020, 06:55:04
Anumita Roy Chowdhary Talk On Air Quality In Delhi

Zee News–CSE
Spokesperson: Anumita RoyChowdhury
Programe name: DNA Daily News & Analysis 18 September 2020, 22:13:07
Conversation with Anumita Roy Chowdhary on car parking

NDTV 24x7–CSE
Spokesperson: Sunita Narain
Programme name: News 22 September 2020. 21:34:07
Dr Sunita Narain in panel discussion over farm fires in the times of a pandemic

NDTV 24x7–CSE
Spokes Person : Sunita Narain
Programme name: News 2 Oct 2020, 10:15:30
In conversation with Sunita Narain on the Banega Swasth India Agenda
https://youtu.be/M-QtzD6SD3U

NDTV 24x7: CSE
Spokesperson : Anumita Roy Chowdhary
Programme name: News 9 October 2020, 18:38:09
Audio call with Anumita Roy Chowdhary over Punjab Farm Fires

NDTV Prime: CSE
Spokesperson: Sunita Narain
Programme name: Special 11 October 2020, 18:22:00
Conversation with Sunita Narain, Director CSE over The Banega Swasth India Agenda

India Today : CSE
Spokesperson : Sunita Narain
Programme name: News 12 October 2020, 09:43:51
Sunita Narain panel discussion on health emergency.
https://youtu.be/2A7ujp0U_sI

NDTV 24x7: CSE
Programme name: News 13 October 2020, 15:15:30
Audio call with Vivek Chattopadhyay over Punjab: Stubble burning almost 4 times higher than last year

CNBC Awaaz : CSE
Spokes person : Vivek Chatoupadhaya
Program Name - Consumer Adda 16-Oct-2020 - 17:35:25
Vivek Chatoupadhaya panel discussion over Pollution increase in Delhi
https://youtu.be/y8gk2Hrksw8

NDTV 24x7: CSE
Spokesperson: Anumita RoyChowdhury
Programme name: News 21 October 2020, 11:03:17
In conversation with Anumita Roy Chowdhary on air pollution

Times Now: CSE
Spokesperson: Avikal Somvanshi
Programme name: News 24 October 2020, 15:37:00
Conversation with Avikal Somvanshi, Manager Clean air campaign CSE on Delhi air pollution.
https://youtu.be/6LShfIrTj9w

NDTV 24x7–CSE
Spokesperson: Avikal Somvanshi
Programme name: News 26 October 2020, 09:07:34
Avikal Somvanshi panel discussion on very poor air In Delhi

2 December 2020 CNBC Awaaz
Spokesperson: Sunita Narain
Programme name: Consumer Adda
Panel discussion on tincture of honey
https://bit.ly/3ocQ8mx

2 December 2020

CSE: Conducted investigation into the business of adulteration of honey

3 December 2020
CNBC TV18 Power Breakfast
Dabur responds to CSE Study: Honey has passed NMR test in Germany, complying with 22 parameters mandated by FSSAI for testing honey

3 December 2020
CNBC Awaaz Special Dabur responds to CSE Study: Honey has passed NMR test in Germany, Complying with 22 parameters mandated by FSSAI for testing honey.

3 December 2020
Mirror NOW News CSE Study finda Sugar Syrup mixed with Honey.
https://bit.ly/38cZXLM

3 Dec 2020
WION NEWS News The Honey trap: CSE finds adulteration In several honey brands. A total of 13 Indian honey brands tested.

3 December 20
DD News News CSE raised questions on Study finds sugar syrup mixed with honey.

3 December 2020
Zee Business Aapki Khabar Aapka Fayda
Sunita Narain Panel Discussion over Tincture of honey.
https://bit.ly/3pLmkO5

3 Dec 2020
CNBC TV18 India Business Hour
Honey adulteration: FSSAI takes note of CSE's probe.

3 December 2020
News Nation News Report: CSE study finds sugar syrup mixed with honey.

3 Dec 2020
Zee News
News Sunita Narain,director of Centre for Science and Environment is speaking on honey.
https://bit.ly/3rJUlQG
https://bit.ly/3obMgCf

3 December 2020
Mirror NOW News Sonali Dhingra are Discussion over CSE Study reveals adulteration in Honey.

4 December 20
Times Now news CSE study flags honey adulteration researches meet food authority officers urge regulator to take quick action .

4 December 2020
News18 India 100 Baat Ki 1 Baat
CSE study flags honey adulteration researches meet food authority officers urge regulator to take quick action .
Dabur company called its honey completely pure

5 December 2020
Zee News News Sunita Narain speaking on honey

Anil Agrawal
(1947–2002)

Centre for Science and Environment (CSE) is a non-governmental, independent policy research institution based in Delhi, which was started in 1980 by the late Anil Agarwal, a leading figure in India's environment movement.

For more than three decades, CSE has helped shape policies and build public awareness to bring change in areas of pollution mitigation and public health security, low-carbon development, natural resource management and livelihood security to make growth sustainable and inclusive.

Centre for Science and Environment
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E-mail: cse@cseinida.org Website: www.cseindia.org