Workshop on “Real-time Data Collection from Continuous Monitoring Systems”

Of late use of continuous monitoring systems has gained significance in the environmental management practices, particularly in the last decade. These systems coupled with IT enabled tools facilitate quick analysis and follow-up actions, as the data are available almost on real-time basis. CPCB’s National programs on ambient air quality and water quality monitoring also emphasize increased use of continuous systems, in addition to manual monitoring systems. Major industrial units have also installed continuous emission, effluent and ambient air quality systems, as specified under the Environmental Clearance and Consent to Operate. It is important that a common framework is evolved to ensure that the authenticated/validated data generated through continuous systems are available to Pollution Control Boards. In order to discuss all relevant aspects viz., data transmission, calibration, validation and interpretation of data for meaningful applications, a one-day workshop on “Real-time Data Collection from Continuous Monitoring Systems” was organized by Central Pollution Control Board (CPCB) on August 6, 2014 at India Habitat Centre, New Delhi. The workshop was divided into four sessions - Inaugural and three technical sessions: In the Inaugural session, Sh. J. S. Kamyotra, Director, CPCB, highlighted the need of Continuous and Online Monitoring System while Sh. A. Sudhakar, I/c IT division, CPCB, presented the concept of continuous and online monitoring system. The first technical session dealt with the Continuous Monitoring Systems - Installation, Calibration & Data Generation which was chaired by Sh. J. S. Kamyotra. In this session, Dr. D. Saha, I/c Air Lab, CPCB presented on Real Time Emission Monitoring System while Dr. R. M. Bhardwaj, I/c PAMS division gave presentation on Real Time Effluent Monitoring System. This was followed by Discussions on the presentations. The second technical session dealt with Data - Transmission, Verification and Use. The session was presided over by Sh. S S Gahlout, DDG, NIC while
Sh. Prashant Gargava and Sh. Vinod Babu were the experts in the panel. In this session, Sh. Aditya Sharma, Sc.'C', CPCB presented on Data Flow from industries to SPCB and CPCB, Ms. Kavitha. B. V, Sc.'C', CPCB presented on Verification and presentation of Data while Sh. Chirag Bhimani, DEE, Gujarat PCB gave presentation on Interpretation and Data Use. The post lunch session dealt with the experiences of Real-time Data Collection in various SPCBs and the session was chaired by Sh. Kamyotra, CPCB. In this session Sh. Thiru R. Dhanasekaran, Chief Scientific Officer, TNPCB, Dr. A. K. Swar, SEE, Odisha PCB and Sh. Aditya Sharma, CPCB shared the experience of real-time data collection from industries. The concluding session of workshop was chaired by Sh. J. S. Kamyotra and Sh. A Sudhakar drew the outcome of the workshop and future road map of Installation of continuous monitoring systems and data collection from industries. The SPCB and CPCB officers were requested to send the suggestions and technical feedback to CPCB at aditya.cpcb@nic.in or Kavitha.cpcb@nic.in by August 20, 2014. It was also proposed to bring out ‘General Guidelines for Continuous Monitoring Systems’ by CPCB in two months.

**Workshop in Parivesh Bhavan on the bilateral Project with VTT Finland on ‘Capacity Building For Emission Measurement In India’**

CPCB conducted the final Workshop in Parivesh Bhavan on the bilateral Project with VTT Finland on ‘Capacity Building For Emission Measurement In India’, on 21-08-2014. The project covered three areas viz., odour, Fugitive Emissions and Source Emissions.

Central grant for this project is restricted to 40% and the rest 60% will be met by State government through polluter pay principle/PPP/State funding etc. Project initiation meetings have been completed in all the 8 sites in the month of September, 2014. Preliminary assessment reports are expected in 3rd Quarter.

**Traffic noise is dangerous for your health: Solutions exist for dense cities**

Most of us are not aware that cars today produce as much noise on the outside as they did 40 years ago. However, heavy vehicles have become somewhat quieter. The number of people exposed to noise pollution in our cities remains high. Traffic noise is today linked to stress-related health problems such as stroke and
variety of behavioural and physiological rhythms, including migration, accumulation of reserves, dormancy and reproduction" explains Thomas Le Tallec (PhD Student, Muséum National d'Histoire Naturelle, France), who led the study. "We postulate that chronic exposure to light pollution could impact the human reproductive function as well. Night work and artificial light are associated with menstrual irregularities, decreased fertility, spontaneous abortions and pre-term births. However, this is only a hypothesis and rigorous studies are needed."

Mouse lemurs were chosen for the study as their reproductive cycle is highly sensitive to day length. In winter, male lemurs are sexually inactive and the testes are not visible. In summer, when there is light for more than 12 hours each day, the males become sexually active, with fully functioning gonads. Over five weeks in midwinter, the heart disease.

"In recent years, the scientific basis for assessment has broadened considerably. But the legislation to protect residents of unhealthy noise levels is completely inadequate," says Tor Kihlman, Professor Emeritus of Applied Acoustics at Chalmers.

Last fall, Tor Kihlman and Wolfgang Kropp initiated a meeting between international experts from the automotive industry, universities and government agencies in Innsbruck to discuss technical possibilities to achieve better urban environments. A summary report from the meeting is now available, see below.

No simple technical solution exists for solving the traffic noise problem -- neither at the source of actions is lacking today. The division of responsibilities is unclear, says Tor Kihlman.

"Many of the needed measures are ideal for implementation in dense cities. They are often in line with what is required to tackle climate change. Here are double benefits to point to," says Tor Kihlman, mentioning three examples: the procurement of quiet public transport, reduced speed, and the usage of buildings as as effective noise barriers, through good urban planning.

The new report describes the first steps needed, politically, for society to move towards substantially reduced health effects caused by traffic noise.

"The problems with traffic noise from roads cannot be satisfactorily resolved by only taking actions at the source of the noise, not with foreseeable technology. Therefore, the report is also covering planning and construction measures. But today's methods of measuring and describing the noise emissions are neither sufficient nor adequate from the exposed citizens' point of view, says Tor Kihlman.

http://www.sciencedaily.com

Lights out: Light pollution alters reproduction cycle in lemurs

"The natural light/dark cycle allows living organisms to time a
found that pollution removal is substantially higher in rural areas than urban areas, however the effects on human health are substantially greater in urban areas than rural areas. "With more than 80 percent of Americans living in urban area, this research underscores how truly essential urban forests are to people across the nation," said Michael T. Rains, Director of the Forest Service's Northern Research Station and the Forest Products Laboratory. "Information and tools developed by Forest Service research are contributing to communities valuing and managing the 138 million acres of trees and forests that grace the nation's cities, towns and communities."

The study considered four pollutants for which the U.S. EPA has established air quality standards: nitrogen dioxide, ozone, sulfur dioxide, and particulate matter less than 2.5 microns (PM2.5) in aerodynamic diameter. Health
Traffic pollution and wood smoke increases asthma in adults

The study is the first of its kind to assess the impact of traffic pollution and wood smoke from heaters on middle-aged adults with asthma.

The results revealed adults who suffer asthma and were exposed to heavy traffic pollution experienced an 80 per cent increase in symptoms and those exposed to wood smoke from wood fires experienced an 11 per cent increase in symptoms.

Asthma affects more than 300 million people worldwide and is one of the most chronic health conditions.

Dr John Burgess of the School of Population Health at the University of Melbourne and a co-author on the study said “it is now recommended that adults who suffer asthma should not live on busy roads and that the use of old wood heaters should be upgraded to newer heaters, to ensure their health does not worsen.”

In the study, a cohort of 1383 44-year-old adults in the Tasmanian Longitudinal Health Study were surveyed for their exposure to smoke from wood fires and traffic pollution. Participants were asked to rate their exposure.

The survey asked for exposure to the frequency of heavy traffic vehicles near homes and the levels of ambient wood smoke in winter.

Results were based on the self-reporting of symptoms and the number of flare-ups or exacerbations in a 12-month period. Participants reported from between two to three flare-ups (called intermittent asthma) to more than one flare-up per week (severe persistent asthma) over the same time.

Traffic exhaust is thought to exacerbate asthma through airway inflammation. Particles from heavy vehicles exhaust have been shown to enhance allergic inflammatory responses in sensitised people who suffer asthma.

“Our study also revealed a connection between the inhalation of wood smoke exposure and asthma severity and that the use of wood for heating is detrimental to health in communities such as Tasmania where use of wood burning is common,” Dr Burgess said.

“Clean burning practices and the replacement of old polluting wood stoves by new ones are likely to minimise both indoor and outdoor wood smoke pollution and improve people’s health,” he said.

“These findings may have
particular importance in developing countries where wood smoke exposure is likely to be high in rural communities due to the use of wood for heating and cooking, and the intensity of air pollution from vehicular traffic in larger cities is significant.”
http://www.sciencedaily.com

Household air pollution puts more than one in three people worldwide at risk of ill health, early death

A third of the world’s population use plant-based solid fuels such as wood or charcoal, or coal, to cook, heat, and light their homes, primarily in Asia and Africa. These smoky, dirty fuels are often used in an open fire or simple stove, resulting in high levels of household air pollution in poorly ventilated homes. Studies in India have found that in some areas, household air pollution is so high that it actually increases outdoor (ambient) air pollution -- leading to pollution levels more than three times higher than a typical London street, and well above WHO-recommended safety levels.

The Commission, which was led by Professor Stephen Gordon, from the Liverpool School of Tropical Medicine, UK, and Professor William Martin, from The Ohio State University, USA, examines evidence for the effects of household air pollution on health. They conclude that an estimated 600-800 million families worldwide are at increased risk of illnesses such as respiratory tract infections, pneumonia, COPD, asthma, and lung cancer in the areas most badly affected.

The women and children living in poverty who are most affected by household air pollution are also likely to have poor access to healthcare -- especially the complex and expensive treatments required for much of the respiratory illness and cancer caused by household air pollution.

"Although a number of clean cooking technologies -- such as advanced cook stoves, LPG or solar power systems -- exist, providing affected homes with cleaner ways to cook, heat, and light their homes with biomass fuel will not be the long term solution," says Professor Gordon."In communities where solid fuel cooking methods are currently the norm, cleaner fuel and cooking methods need to be at least as affordable, efficient, and long-lasting as the traditional style methods they replace. They also need to be fit for the different cultures and regions in which they’re used -- if families only partially adopt cleaner cooking methods, using them alongside more polluting technologies, we are potentially looking at an expensive failure, and no reduction in the millions of people currently at risk from household air pollution.”

The Commission provides a comprehensive review of the evidence for the effect on ill health and premature death of household air pollution,

Estimates suggest that household air pollution killed 3.5 to 4 million people in 2010. Although overall rates of exposure to household air pollution have been declining slowly in recent years, population growth means that the number of people exposed has remained stagnant, at around 2.8 billion people worldwide.

Despite this huge toll of premature death and ill health, coordinated international and country-led efforts to tackle household air pollution have thus far been insufficient, say the authors, and public awareness of the risks of cooking with solid fuels in poorly ventilated homes remains low.
examine interventions currently available, and promising future developments. It concludes by outlining research priorities which will need to be tackled if this problem is to be effectively reduced.

According to Professor Martin, "All of the evidence we examined in this Commission points to a serious need for improved commitment to tackling the problem of household air pollution. Scientists and health professionals in countries where household air pollution is still widespread need to work with governments and international health agencies to increase awareness of the huge toll that it is exacting on the population. There are many gaps in our knowledge of how to effectively measure and prevent household air pollution, but this problem cannot be solved until the global community recognises the scale of this problem and commits to coordinated and concerted action."

http://www.sciencedaily.com

**Why Does Less Meat Mean Less Heat?**

After long focusing on fuel economy and energy production, environmentalists and scientists are now promoting a diet of more plants and less meat to slow climate change— but why?

It's a problem with efficiency. Industrial farm-animal production — getting animals from farms to our plates — is inherently inefficient. According to the Food and Agriculture Organization of the United Nations, global animal agriculture produces vast amounts of crops to feed billions of farm animals long before they are themselves consumed. The animals eat this food for months, sometimes even years, before being slaughtered — they are the world's most under-recognized "middle men."

The scope of animal agriculture's impact on climate change has, for decades, been underestimated. The raising and slaughtering of farm animals is just one component. Raising animals for food also includes feed-crop production — which requires extensive water, energy, and chemical use — as well as energy for transporting that feed, live animals and animal products. The total process for bringing such vast quantities of meat, egg and dairy products to our plates comes at a substantial cost to the environment.

As a result of animal agriculture's impact on climate change, organizations like the Natural Resources Defense Council and the Sierra Club support eating more plant-based meals. The power of making such a subtle change in our lives is remarkable. A Carnegie Mellon University study found that eating plant-based meals — even just one day a week — reduces more greenhouse gases than eating exclusively local foods every day (a practice some people admirably, though mistakenly, think leads to a major environmental impact due to the reduced travel miles to transport the food).

Americans are taking note: Figures from the U.S. Department of Agriculture and the National Agricultural Statistics Service show that our meat consumption is at its lowest level in years. About a half-billion fewer animals are now being raised for food than just several years ago, reducing animal agriculture's global impact.

This is the result of countless people choosing to reduce
The purple areas on this map show places where satellites have detected formaldehyde. This chemical forms from isoprene, a volatile organic compound that trees can give off when temperatures are hot.

According to Gallup, millions of Americans also have become vegetarian or vegan. Dietary strategies have taken hold that further this impact, such as the "Three Rs" endorsed by The HSUS: Reducing or replacing consumption of animal products while refining diets (switching to products from sources that adhere to higher animal-welfare standards).

Expert voices, op-ed

If you’re a topical expert — researcher, business leader, author or innovator — and would like to contribute an op-ed piece, email us here.

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This growing movement includes former President Bill Clinton and former Vice President Al Gore, both of whom are now eating primarily a plant-based diet. Famed director James Cameron became vegan and advocates meat reduction for conservation reasons. Nature Conservancy CEO Mark Tercek also is vegan and has said on his blog: "As an environmentalist, I think our global consumption of meat is far too high." And former George W. Bush and Sarah Palin speechwriter Matthew Scully is vegan, writing in his book "Dominion," regarding farm animal production, "I know a crime against nature when I see one."

While there is certainly much public and corporate policy work to be done to address global climate change, it’s heartening to see leaders and so many others addressing the issue with the force of their forks.

And our individual power is enormous. With more than nine billion animals currently being raised for food in the United States each year, if we all eschewed meat even one day a week — whether it’s a Meatless Monday or any other day — we’d spare more than one billion animals from the horrors of factory farms and avoid the negative environmental consequences linked to their production. With more people sharing our mutual responsibility to reduce carbon footprints by shifting to plant-based meals, we have reason to be hopeful for our planet’s future.

http://www.livescience.com

**Trees: Unlikely Culprits in Ozone Pollution**

Pollution from forests? As this map shows, trees do emit compounds that can worsen ozone and increase aerosols in the atmosphere.

Terpenes may be the reason that climate change has yet to influence temperatures in the Smokies and the surrounding southern Appalachians, said Howard Neufeld, a plant physiologist at Appalachian State University in North Carolina. Terpenes interact with moisture in the atmosphere and reflect heat back into space, Neufeld told Live Science.

But tree pollution has its downsides, too, because it can contribute to high ozone levels...
Aerial surveys using ice-penetrating radar found much of the Totten's ice rests in deep valleys up to 1.5 kilometres below sea level, meaning the warming water can eat away at the polar ice cap, Australian Antarctic Division program leader Tas van Ommen said.

"If it starts to shrink back from the coast, the ocean can follow the ice in and you get a runaway effect, where there's nothing to stop it until all the ice below sea level is removed," Dr van Ommen said. "If that happens to the Totten Glacier, it would mean at least 3.5 metres of sea level rise globally.

Like other Antarctic glaciers entering the ocean, the Totten's mouth is already afloat on the sea as an ice shelf.

Earlier this year Antarctic Climate and Ecosystems CRC scientist Steve Rintoul led an Australian voyage to the shelf's edge, far south-west of Hobart, that measured warm water there for the first time.

The aerial survey work, published in Nature Geoscience on Tuesday, let Australian and United States scientists unveil what was happening further inland in the Australian Antarctic Territory.
Hole Oceanographic Institution in Massachusetts has found that, since industrialisation, mercury levels near the ocean surface have tripled in many places. The highest rates are in cold waters around Iceland and Antarctica, where they are enough to damage marine life and threaten humans.

But the levels are much lower than expected, Lamborg says, given known emissions from coal burning, cement production, waste incineration and small-scale gold mining. He estimates the oceans contain between 60,000 and 80,000 tonnes of mercury, less than a quarter of the 350,000 tonnes expected.

Where is the rest? Small-scale gold mining may be a big source, so the lost mercury could be in soils near mines, Lamborg says.

Alternatively, the lost mercury could be in sediments of estuaries and coastal waters, particularly in Asia. Last month, Helen Amos of Harvard University estimated that up to 90 per cent of the mercury flowing down rivers from mining areas ends up in these sediments.

If those sediments get stirred up, local mercury levels could reach those seen at Minamata, which affected thousands of people.

http://www.newscientist.com
Beijing Bans Coal-Burning to Clear the Air

China’s capital city of Beijing will ban coal sales and the burning of coal in its six main districts by the end of 2020 to cut air pollution, local officials said on Monday.

The Beijing Municipal Environmental Protection Bureau announced that the districts of Dongcheng, Xicheng, Chaoyang, Haidian, Fengtai and Shijingshan will stop using coal and close coal-burning power plants and other coal-fired facilities over the next six-and-a-half years.

Beijing residents will use cleaner sources of energy such as natural gas to generate electricity for heating, cooking and other activities, the bureau said.

The move is a part of Beijing’s plan to clear the smog that often envelopes the city of roughly 20 million residents.

Motor vehicles account for the largest share of Beijing’s air pollution – 31.1 percent, the environmental bureau said.

Coal burning comes in second at 22.4 percent of the small particulate matter fouling the city’s air.

Industrial production accounts for 18.1 percent and dust for 14.3 percent of Beijing’s particulate matter air pollution.

These tiny airborne particles smaller than 2.5 microns in diameter, called PM 2.5, are blamed for Beijing’s smog.

For example, on January 12, 2013 Beijing air quality data released by the U.S. embassy recorded air quality index levels so hazardous that they were classed as “Beyond Index.” In the afternoon, the PM 2.5 figure was 728 on a scale that stops at 500.

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That figure is expected to be reduced to less than 10 percent by 2017.

Other high-pollution fuels, such as fuel oil, petroleum coke, combustible waste and some biomass fuel will be also banned, the bureau said.

The Beijing Economic-Technological Development Area will take the lead in giving up using high-pollution fuels by the end of this year. Officials said that other areas will follow later.

http://ens-newswire.com

Map some noise: how your smartphone can help tackle city sound pollution

Noise pollution in cities is causing our health to suffer: according to the World Health Organisation, one in five Europeans is regularly exposed to sound levels at night that could significantly damage their health, leading to cardiovascular diseases, sleep disturbance and stress. Until recently, monitoring these noise levels has been left up to local councils, but researchers at the Free University of Brussels in Belgium have developed an app that allows everyone who downloads it the ability to measure the amount of noise
they’re exposed to by transforming their smartphone into a sound level meter.

NoiseTube works by recording sound levels and GPS locations. Once launched the app shows decibel levels of green or red depending on the level of noise. That information is then sent to the NoiseTube server via the internet where a detailed ‘noise map’ is produced and then made available to the user. “The app is very simple to use on purpose. We wanted everyone to be able to use it even if they weren’t tech savvy,” Dr Ellie D’Hondt of the NoiseTube project said. “We see this as a tool that empowers communities to take control and monitor their own noise levels.”

The project started in 2008 as a new form of data gathering, one that was close to people and of a social concern. “Sound was an obvious choice because everyone has a microphone on their mobile phone, and noise pollution, along with air pollution is an environmental concern. Often the two go hand in hand,” D’Hondt said.

Since its launch, the app has been popular with community groups who want to collaboratively tackle noise pollution. According to D’Hondt these groups don’t think that city produced noise maps give an adequate interpretation of the level of noise they’re experiencing. City produced noise maps, which are required by the European Union for all urban populations of over 250,000, are based on statistical models involving very few actual measurements. NoiseTube on the other hand gives a detailed account of the level of noise experienced at a specific time and location. “Ten people walking the same area from 9 to 10am every day for one week can make a valid and detailed map for an area of a couple of blocks,” D’Hondt said. “It’s a reasonable effort by the community group to produce these maps, and with it they can go to authorities and have real evidence about what they’re experiencing.”

http://www.theguardian.com