CLIMATE CHANGE

Reviewing NASA's latest study

While carbon dioxide is the primary driver of global warming over the long-term, limiting black carbon and methane are complementary actions that would have a more immediate impact .

ABDUL HAMID

CLIMATE change has long-since ceased to be a scientific curiosity, and is no more just one of many environmental and regulatory concerns. It is the major, overriding environmental issue of our time, and the single greatest challenge facing environmental regulators. It is a growing crisis with economic, health and safety, food production, security, and other dimensions. It is the crying need of our time to reduce the pace of climate change.

Scientists believe that the key is to reduce emissions of two powerful and fast-acting causes of global warming -- soot and methane. Adopting simple and inexpensive effort to cut these two major pollutants could slow the pace of climate change for years and could significantly reduce premature deaths, particularly in South Asian countries like India, Nepal and Bangladesh, according to the latest study of National Aeronautics and Space Administration (NASA).

The study entitled *Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security,* was published in a journal named *Science* in its vol. 335 no. 6065 issue on January 13, 2012. This study, built on research from scientists at the Scripps Institution of Oceanography, shows key emissions reduction measures that could slow the pace of climate change, save lives and increase agricultural production.

Led by Drew Shindell of NASA's Goddard Institute for Space Studies (GISS) in New York City, the study finds that focusing on these measures could slow global mean warming up to 0.9 ºF (0.5ºC) by 2050, increase global crop yields by 30 to 135 million tons each season, and prevent between 700,000 and 4.7 million premature deaths each year.

Shindell and his team considered about 400 control measures based on technologies evaluated by the International Institute for Applied Systems Analysis in Laxenburg, Austria. The study identified 14 measures with the greatest climate benefit. All 14 would curb the release of either black carbon or methane, pollutants that exacerbate climate change and deteriorate human or plant health, either directly or by leading to ozone formation.

Polar ice melting due to global warning.

Black carbon, a product of burning fossil fuels or biomass such as wood or dung, can worsen a number of respiratory and cardiovascular diseases in people. The small particles also absorb radiation from the sun, causing the atmosphere to warm and rainfall patterns to shift. In addition, they darken bright land surfaces, such as ice and snow, reducing their reflectivity and hastening global warming. Methane, a colourless and flammable substance that's a major constituent of natural gas, is both a potent greenhouse gas and an important precursor to ground-level ozone. Ozone, a key component of smog and also a greenhouse gas, damages both crops and human health.

For black carbon, the strategies analyzed include installing filters in diesel vehicles, keeping high-emitting vehicles off the road, upgrading cook stoves and boilers to cleaner burning types, installing more efficient kilns for brick production, upgrading blast furnaces, and banning agricultural burning.

For methane, the key strategies the scientists considered were capturing gas that would otherwise escape from coal mines and oil and natural gas facilities, reducing leakage from long-distance pipelines, preventing emissions from city landfills, updating wastewater treatment plants, aerating rice paddies more, and limiting emissions from manure on farms.

Black carbon and methane have many sources and reducing emissions would require that societies make multiple infrastructure upgrades. The scientists used computer models developed at GISS and the Max Planck Institute for Meteorology in Hamburg, Germany, to model the impact of emissions reductions. The modeling showed widespread benefits from the methane reduction because methane is evenly distributed throughout the atmosphere. In contrast, benefits from reducing black carbon, which falls out of the atmosphere after a few days, were stronger in certain regions than others. The effect of reducing black carbon, for example, would be particularly strong in areas with large amounts of snow and ice. In the Himalayas and the Arctic, such reductions would reduce projected warming over the next three decades by up to two-thirds.

"Protecting public health and food supplies may take precedence over avoiding climate change in most countries, but knowing that these measures also mitigate climate change may help motivate policies to put them into practice," Shindell said.

Unabated emission causing global warming.

While carbon dioxide is the primary driver of global warming over the long-term, limiting black carbon and methane are complementary actions that would have a more immediate impact because these two pollutants circulate out of the atmosphere more quickly.

"…implementing the strategies could slow -- but not stop -- the effects of climate change. So employing these practical measures we not only delay the onset of so-called 'dangerous warming' by 20 to 30 years at the minimum, we also save millions of lives and save millions of tons of crop from damages by air pollution. So this is really a win-win for everyone", the report stated.

"We've shown that implementing specific practical emissions reduction chosen to maximize climate benefits also would have important 'win-win' benefits for human health and agriculture," said Shindell.

"By broadening our attention to the short-term climate warming agents, there is a real possibility for slowing down the rate of warming significantly in the coming decades," said Ramanathan, another scientist. "What is striking is that it can be done with measures that are implementable using available technologies and existing institutions. For example, California has implemented some of the measures outlined in our study with demonstrable results."

While all regions of the world would benefit, countries in Asia and the Middle East would see the biggest health and agricultural gains from emissions reduction.

Shindell and his team concluded that control measures would deliver Tajikistan, Kyrgyzstan and Russia -- countries with large areas of snow or ice cover -- the greatest protection against global warming. The south Asian countries of Bangladesh, Nepal, and India would see the biggest reductions in premature deaths. Iran, Pakistan and Jordan would experience the most improvement in agricultural production, and southern Asia and the Sahel region of Africa would see the most beneficial changes to precipitation patterns.

"The scientific case for fast action on these so-called 'short-lived climate forcers' has been steadily built over more than a decade, and this study provides further focused and compelling analysis of the likely benefits at the national and regional level," said United Nations Environment Program (UNEP) Executive Director Achim Steiner.

While the USA is showing its negligible concern regarding the renewal of earth summit, climate change mitigation and adaptation fund, a report of this kind by NASA of USA is really a positive signal. Our eyes are set on the horizon expecting the significant help and assistance from the developed world to face climate change impacts.

The writer studies Development at University of Dhaka. E-mail: naïve.hamid@yahoo.com

Waste vitiates city environment

The city corporation vehicles come once a day -- usually after midnight -- and collect the waste. But the spot soon turns into an open dumping ground for the rest of the time.

PROBIR KUMAR SARKER

Neither it is a dumping spot nor the untrotted dead end of a lane, but a busy road in the city's Farmgate intersection which thousands of people pass by or gather on to catch public transport and do low-cost shopping.

But the restaurants, snack shops, and other businesses discard their daily garbage at this specific place -- a commercial hub -- since there is no dustbin in the area for years. There are around eight restaurants, more than 15 food outlets and hundreds of other shops.

It is the starting point of Bir Uttam Maj Gen (retd) KM Shafiullah Road (Green Road) at the southwest side of Farmgate stretching southward till Sajal Square -- the intersection of Panthapath and Green Road.

One finds that the spot is used to dispose of small amount of paper and other dry waste in the day while the garbage from restaurants is thrown in huge quality at night.

Owners and staff of the restaurants, food stores and others categorically admit their dumping of food waste, paper and polythene. However, the hotel owners say they only throw waste after evening.

Most people on the hectic thoroughfare usually walk bypassing the spot while some others obviously put handkerchief on their nose.

Asif Khan, who passes the area everyday on his way to office at Panthapath, said, "I just try to ignore. It's nothing new in Dhaka."

Green Road resident Farzana Neepa expressed her frustration since this obnoxious problem is left unresolved for years. "It must be kept clean throughout the day considering the number of people gathering here," she said.

The city corporation vehicles come once a day -- usually after midnight -- and collect the waste. But the spot soon turns into an open dumping ground for the rest of the time.

Earlier there had been two dustbins in the area installed 20 years ago -- one small concrete-made and another portable. But none lasted for long due to objection from different quarters. The cemented dustbin was erected in front of the Bata store some 15 years back but was later dismantled.

The other -- locals say placed in 1998 -- was shifted several times from one spot to another within this area but some time later disappeared.

A similar initiative was taken during the previous caretaker regime, but it did not work as three dividers were put up in front of Ananda Cinema Hall to allow buses of different routes move easily.

The corner-most lane, along the dumping spot, was meant to be used by double-decker BRTC buses which made officials rethink a possible position for a dustbin in the future. And the matter remains still in a limbo.

At least five fruit sellers and two snack shops in front of the Ananda cinema hall building perhaps have no option but to throw wastes at that place even in day time when the shopkeepers of garment and other businesses follow them.

The place turns more unhygienic when street urchins collect recycleable objects from the dumping spot.

But now everyone in the area including Taslim Ahmed, an official at the Bata store, say they want a dustbin at the same place the waste is being dumped now.

"The shifting of the previous dustbins took place as the spots were not determined properly," Taslim added.

Farmgate Hotel and Restaurant Manager Anup Saha said the government should have been stricter to manage garbage in this busy area. "It's not acceptable that this area remains littered with waste emitting odour when thousands of people gather and pass through it," he said.

Operators of New Star Hotel and another adjacent unnamed hotel, both close to the spot, said they dump their waste at the spot in the night only and at day time, rickshaw-vans come to collect their rubbish.

Twenty-seven-year-old Md Jamir, who sells shoes on the divider adjacent to the dumping spot, said the bad odour does not bother them much. "We're poor people. It (smell) can't strike us anymore."

Local businessmen say the problem may ease only if a dustbin is constructed at the spot and DCC trucks or vans come more frequently so that waste does not get piled up there.

Asked, officials at the DCC (north) regional office at Karwan Bazar suggested that the shopkeepers and local people should discuss the matter among themselves to find a way. Then the authorities may take a step.

The writer is a journalist.

Waste vitiating atmosphere of Farmgate area in the city.