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Hazardous plastic waste during pandemic

A risk factor we forgot about

WHILE health workers are desperately trying to treat Covid-19 and other critically ill patients in hospitals and the public is trying to maintain better hygiene, the fallout of the use of a huge amount of plastic waste generated during the last month or so is being overlooked. A study by the Environment and Social Development Organisation (ESDO) has found that around 14,500 tonnes of hazardous plastic waste has been produced from single use surgical face masks, gloves, hand sanitisers bottles and polythene bags in the first month of the shutdown.

It is true that items like gloves, protective gear, masks and hand sanitisers are all essential to combat the virus and prevent the spread of infection. But as they are single use products, they produce plastic waste that cannot be recycled. More importantly, the waste has to be disposed of in an organised, safe way so that they do not become the source of further spread of infections. The frightening fact is that this waste often ends up being dumped indiscriminately, as is the case of medical waste in general. The study researchers have pointed out that medical waste from hospitals and other healthcare organisations has to be collected, stored, transported, treated, and disposed of so that it does not cause further risks of infection. The extra plastic waste, moreover, will add to the already serious accumulation of plastic in the environment.

The study has also pointed out how workers without protective gear involved in waste management are at risk of contracting the virus and spreading it in their communities. This paper has already reported on the lack of protective gear for those involved in waste disposal and management.

The state of medical waste disposal was appalling even before the pandemic, which makes the present task quite formidable. The need of the hour is to have a planned, coordinated and foolproof management of hospital waste, generated at this time especially. This means authorities of hospitals, clinics, diagnostic centres and other healthcare units have to be diligent in managing their waste, making sure they are properly treated and disposed of in separate containers. Households who may have symptomatic or asymptomatic carriers among its members must also practice safe waste disposal. City corporations and other government bodies have to equip their workers with protective gear such as gloves, face masks and PPE and make sure that the waste is dumped in designated areas after being treated to eliminate their toxicity. The government must start thinking of a modern medical waste management system that includes using safe transport vehicles that can be sterilised, training drivers and waste collectors and stopping the recycling of all waste completely during the pandemic. A tall order it may be, but absolutely essential to halt the spread of infections.

Pay staff at the private universities

Govt should work with private sector to find a workable solution

ORDINARILY, it doesn't make sense for a university to stop paying its staff in the middle of a semester that the students have already paid for. Then you have a government directive asking the universities to ensure that the staff are not laid off and their salaries are paid. Yet rules and practices from ordinary times seldom apply to emergency situations like the one we are experiencing, which require innovative solutions. The fact is, many private universities are reportedly failing to pay—fully or even partially—salaries to their employees, plunging them into great economic hardship. According to a report by *The Daily Star*, during March and April, several universities have paid half or less than half of the salaries, while several others have not been able to make any payment at all. It is totally unacceptable that such a situation should exist and continue to be unaddressed, which only shows the incompetence of our education authorities to respond adequately to a crisis situation.

The reason cited for the universities' failure to pay is that semester and admission fees are the two major sources of income for a private university. But these sources have been closed off for months now due to Covid-19 lockdown restrictions, making it difficult for the universities to pay their employees. There are several ideas floating around as to how to address this crisis: one is, as offered in a joint statement by some 829 public and private university teachers, that private universities pay salaries using their reserve funds. According to the Private University Act 2010, each private university is supposed to have a reserve fund, which is meant to be used to bear expenses in times of crisis. Another idea is for the government to provide a stimulus package to the universities so that they can pay their staff for at least six months. The Association of Private Universities of Bangladesh (APUB) already sent a letter to the UGC in this regard on April 29, and it promised to repay the amount in instalments within three to four years.

An ideal solution may lie in combining the two ideas to reach an agreement that works for both the government and the private university authorities. The government must take the lead in this regard, and act swiftly so that staff at private universities are paid their salaries before Eid and are not laid off in the middle of a pandemic. We have yet to devise a workable plan to resume academic activities in universities even after nearly two months of a lockdown. Allowing the salary problem to continue will only make things worse.

LETTERS TO THE EDITOR

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Fruit adulteration

I recently came across reports of unscrupulous traders prematurely ripening fruits with poisonous chemicals. Although food adulteration occurs all year, it reaches its peak during Ramadan. This is a major public health concern, especially since people are choosing to eat more fruits to boost the immune system during the pandemic. Initiatives taken by the mobile courts are laudable but proper surveillance and frequent raids throughout the year can restrain the attempts of these swindlers to take advantage of the general public. Proper punitive measures can go a long way to prevent fruit adulteration.

Fawzia Khanum Ahona, by email

MOHAMMAD ARFAR RAZI and SANJOY ROY

ONE of the unnerving things about Covid-19—and there are many—is a lack of definitive information even after the passing of four months of the pandemic. As all humanity remains vulnerable to the deadly onslaught of this insidious virus, we would like to know how the virus progresses (and regresses) in a location, what is the rate of its spread, what conditions may slow down its rate, and what a comparison between different locations can suggest. In most cases, we do not have adequate answers.

Knowing that there will be no vaccination and adequate therapeutic support for another 12-18 months, all of us are anxious for *any* positive information. Scientists, medical professionals, politicians, statisticians and analysts are still scrambling to find some reassuring news regarding the vulnerability of the virus, and a way out of this pandemic.

There have been some hopeful claims regarding the impact of the coronavirus as far as Bangladesh is concerned. In a paper jointly funded by the National Key Research and Development Program of China and the National Natural Science Foundation of China, published on March 9 by Social Science Research Network (SSRN), authors from two Chinese universities stated that high temperature and high humidity reduce the transmission of Covid-19. The authors found that the arrival of the summer and rainy season in the northern hemisphere could effectively reduce transmission. In another paper posted on SSRN, and much publicised in the US, a group of researchers from the Massachusetts Institute of Technology (MIT) claimed on March 19 that 90 percent of Covid-19 transmissions had occurred in regions that had temperatures between 3 and 17 degrees Celsius and absolute humidity between 4 and 9 grams per cubic metre during the outbreak.

On March 28, a group of researchers from the New York Institute of Technology stated that the countries without universal policies of *Bacillus Calmette-Guerin* (BCG) vaccination (preventive measures to tuberculosis), such as Italy, Netherlands and the US, have been more severely affected compared to countries with universal and long-standing BCG policies. While WHO does not confirm a relationship between BCG vaccination and Covid-19 outbreak or transmission, the correlation between the virus and BCG histories remains an open topic.

The relatively low number of cases and deaths in Bangladesh and India, considering the population density and lack of sufficient precautions, may be attributed to either temperature or BCG, or both. But such claims have to be treated carefully as there are exceptions to each one of them. There are warm places like Brazil and Ecuador with a high number of

cases and deaths.

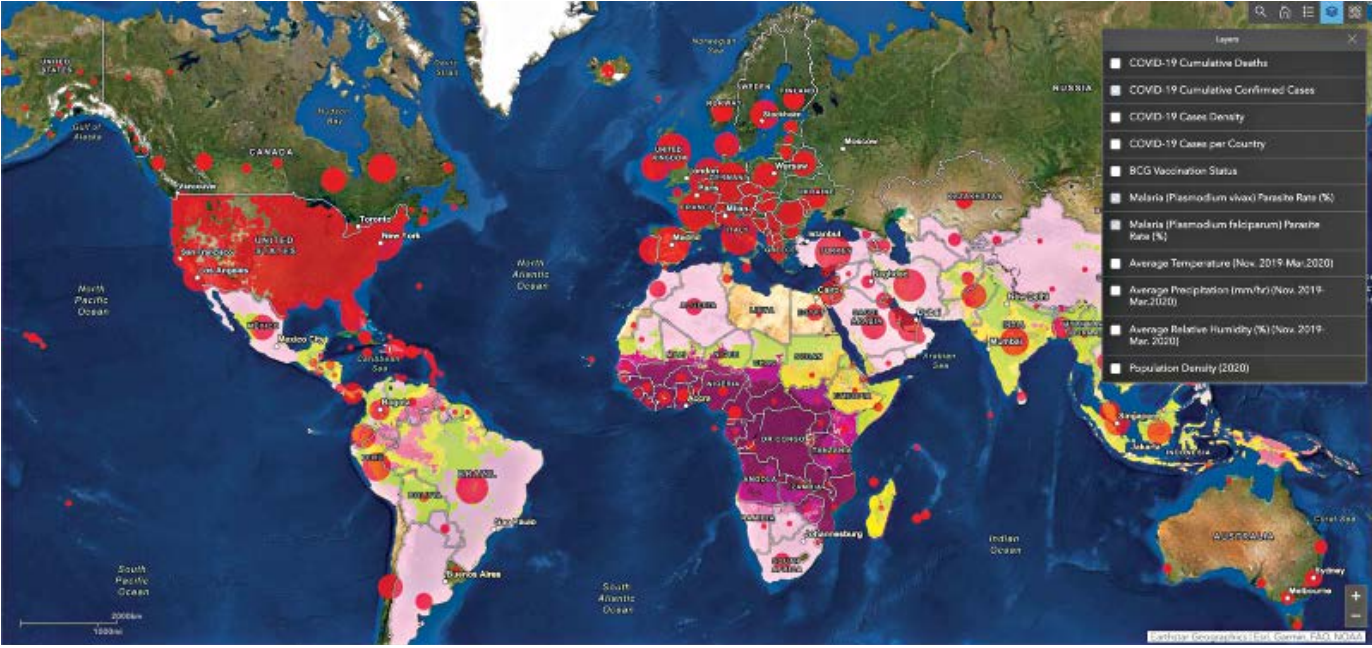
Geospatial mapping has become a crucial tool for a data based verification of such claims or projections, and a comparative understanding of the impact of the virus. Mapping is an essential—and primary medium—for tackling any disastrous situation such as health crisis, natural calamity, war, etc. Perhaps the first health-based mapping began when John Snow produced hand-drawn paper maps of cholera cases during the cholera outbreak in Soho, London in 1854. In the current context of the pandemic, there are now more advanced methods of mapping aligned with new technologies. South Korea is an example. Being the second-worst affected country after China at the beginning of the global outbreak, the East Asian nation was successful in

a group of multidisciplinary researchers showed that international flights brought a total number of 566 Covid-19 cases to 26 countries within two months since the outbreak was first reported on December 31, 2019.

Launched on January 22, the real-time Covid-19 tracking map by Johns Hopkins University (JHU) in USA introduced a new dimension (real-time visualisation) of spatial science in the field of applied health geography. This tracking initiative has become the most cited source of Covid-19 spatial data for many scientific institutions, government officials, public health scholars and mainstream media. Ingesting big data from their sources, JHU uses this web-based geographic information systems (GIS) platform to report confirmed cases associated with

8, the dashboard has been attracting wide responses from all over the world. All critical criteria—from temperature to BCG vaccination—are overlaid on the global map. A comparative data on South Asian countries is also presented. Bengal Institute plans to add more relevant data and geographic and social information to the dashboard with a hope that the atlas may be helpful for strategising in mitigating this pandemic.

For dealing with the impact of Covid-19 and future public health crises, a better integration of digital infrastructure associated with geo-spatial mapping and data collating should be a priority in our country. A Covid-19 tracking platform was very much needed for Bangladesh but now, thanks to the State Minister for ICT Division, a platform has been launched



Bengal Institute Covid-19 dashboard showing all layers along with worldwide confirmed cases.

taking control of the situation without even enforcing a lockdown. Having the finest geo-information researchers, South Korea tackled Covid-19 by practicing and implementing artificial intelligence in mapping people's movement. Needless to say, such practices have also raised legitimate controversies.

Facebook recently launched its new interactive map that displays reported county-by-county Covid-19 symptoms from users across the US. While the initiative may help local governments better understand where to allocate resources and, eventually, when it is safe to start reopening from lockdown, the issue of infringing on individual privacy remains a serious matter.

There are other critical information that a global mapping can reveal, especially with air travel and the transmission of the virus. In a paper for the National Academy of Sciences of USA on March 13,

some other statistical representations across the world in an interactive and near-real-time dashboard.

By making such information public, people can engage in hypotheses and conclusions on their own but based on facts. What if we could take the environmental and epidemiological parameters and correlate with Covid-19 cases in an interactive and evidential way? To effectively "flatten the curve," as this new phrase enters our thinking and planning, we need geo-information. As we are in a global pandemic situation, we need to work with a global spatial platform.

In response to the need of a geospatial data bank, researchers at Bengal Institute have created a unique online dashboard titled "An Atlas of Covid-19," in which global information of the virus, and associated parameters, are presented in a correlative way. First published on April

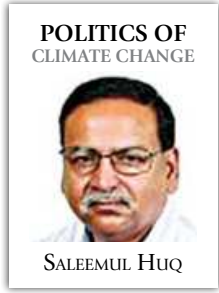
on April 20.

Geospatial information and analysis confirm that a collaborative way of research among policymakers, doctors, public health researchers, data scientists, geospatial researchers and other experts is very much needed in tackling the unprecedented crisis we are in today.

The Bengal Institute dashboard may be accessed at: <https://bengal.institute/covid19/> and the Covid-19 tracking platform can be accessed through <http://covid19tracker.gov.bd/>. In addition to the Atlas of Coronavirus, Bengal Institute also publishes Covid-19 Dhaka neighbourhoods and Bangladesh district case rates on a daily basis following IEDCR data at <http://bit.ly/COVIDhaka> and <http://bit.ly/COVID19bd>.

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Bangladesh has an opportunity to be a world leader in climate change



The next major opportunity to tackle the climate change emergency will be at the 26th Conference of Parties (COP26) to be held in Glasgow, Scotland next year. Prime Minister Sheikh Hasina will attend not just to represent Bangladesh, but all the most vulnerable developing countries that are members of the Climate Vulnerable Forum (CVF).

The CVF was created in 2009 by then President Nasheed of Maldives prior to COP15 of the United Nations Framework Convention on Climate Change (UNFCCC), when he invited the heads of nations from the four groups of vulnerable countries—the Least Developed Countries (LDC) Group, the Alliance to Small Island States (AOSIS), the African Group and the Latin America Group. Although the different countries negotiated inside their respective groups in the UNFCCC, he wanted to create a crosscutting group of leaders that joined all the vulnerable countries together at the leadership level, not for detailed negotiations but rather for high level advocacy on behalf of all the groups.

I had the privilege of being invited to attend that first meeting as a keynote speaker on vulnerability and adaptation to climate change, along with other international experts who spoke on mitigation as well as global politics. This group of international experts were later to be formalised as the Expert Advisory Group (EAG) of the CVF which I currently chair. At that first meeting, where Bangladesh was represented by then Foreign Minister Dr Dipu Moni and Environment Minister Dr Hasan Mahmud,

we also became a founding member of the CVF. The main advocacy issue that the leaders decided on at that meeting, which is still being campaigned for, is to call for the global temperature goal to be changed from 2 degrees Centigrade to 1.5 degrees. The reason for this was that although that 2 degrees was then the global goal, it would still cause irreparable harm to tens of millions of vulnerable communities across the most vulnerable countries. President Nasheed became the first

By taking over the leadership of the CVF for the next two years, Bangladesh has the opportunity to represent vulnerable countries at global forums like COP26, but even more importantly, to lead the South-South sharing of knowledge, experience and expertise in adaptation to climate change amongst the vulnerable developing countries.

chair of the CVF for two years and argued for the 1.5 degree long term temperature goal at COP15 in Copenhagen, Denmark in December 2009. He was the only member of the CVF group who was invited to join the other heads of government on the last evening of the COP, where the Copenhagen Accord was agreed upon. He argued for the global goal to be changed

from 2 to 1.5 degrees, but this was perhaps the only issue on which the Presidents of US and China agreed that they didn't want. So we lost that battle then. However, Nasheed managed to get them to agree to have the UNFCCC do a scientific review of the long term temperature goal after a few years.

The UNFCCC then convened a scientific panel in 2013 to examine the difference between the two temperatures, and when their report came out in 2015, there was a very strong scientific argument for changing the global temperature goal. They were able to demonstrate the loss of both millions of human lives as well as key ecosystems such as the Great Barrier Reef Resort in Australia at 2 degrees, which could be saved at 1.5 degrees. This scientific report was then taken up by the CVF, which was by then under the leadership of President Aquino of the Philippines, who made a big political push at the COP21 in December 2015 and managed to get the 1.5 degree goal adopted as a part of the Paris Agreement when it was finally agreed. Thus, the CVF has been a critically important group of nearly fifty developing countries that has provided a voice on behalf of the world's most vulnerable, and the chair of the group has changed over the years from Maldives to Tonga, Bangladesh, Costa Rica, Philippines and then Marshall Islands.

Late last year at COP25 held in Madrid, the President of Marshall Islands Hilda Heine, whose term ends in mid 2020, offered Prime Minister Sheikh Hasina of Bangladesh to become the next chair of the CVF, and she accepted. Due to current travel restrictions, the official handing over of the responsibility from Marshall Islands to Bangladesh could not be done by the leaders of the two countries in person, but it has just been done through a formal letter. Prime Minister Sheikh Hasina will now chair the CVF for the next two years, which will be a critical period for tackling climate change.

The next major global meeting for the CVF to prepare for is COP26, which has been postponed to 2021 and will be held

in Glasgow, Scotland with the United Kingdom as the President. Hence, it is important that the Bangladesh government immediately reach out to the British government on behalf of the CVF to ensure that Prime Minister Sheikh Hasina and the other leaders of the CVF who will be going to Glasgow are given a high level platform where they can make their case for the global temperature goal of 1.5 degrees, which seems to be slipping out of reach, without major emitting countries being held to account.

Another aspect of the CVF that took shape under the leadership of President Aquino of the Philippines was the creation of the group of Finance Ministers of CVF countries, which was chaired by the then Finance Minister of Philippines. He decided to call the group the V20 group of countries and since then, the V20 Group of Finance Ministers have been meeting every year during the meeting of all Finance Ministers at the Annual World Bank and IMF meetings in Washington DC. The V20 Finance Ministers have also initiated a very interesting set of programmes to tackle climate change on the ground, including looking at insurance. The Finance Minister of Bangladesh will now become the chair of the V20 group of Finance Ministers and will have an opportunity to show that the CVF countries are no longer just an advocacy group, but an action oriented group as well.

By taking over the leadership of the CVF for the next two years, Bangladesh has the opportunity to represent vulnerable countries at global forums like COP26, but even more importantly, to lead the South-South sharing of knowledge, experience and expertise in adaptation to climate change amongst the vulnerable developing countries. In the era of Covid-19, this provides Bangladesh with the opportunity to show both national and global leadership in tackling the public health emergency as well as the climate change emergency at the same time.

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