Desertification And Drought Day

The threat of parched land

Haseeb Md Irfanullah

Barsha-kaal, or the rainy season, has officially arrived this week. If we were not shackled by Covid-19, we would have been welcoming monsoon with singing and dancing at public gatherings, arranging tree fairs, and planting hundreds and thousands of saplings all over the country. A perfect time to make our country greener!

It may therefore sound a bit strange to observe Desertification and Drought Day today, on June 17. We may even wonder—does this day have anything to do with luxuriant, riverine Bangladesh?

Before answering this question, let's quickly look back at the 1970s. The year 1973 saw the end of a five-year-long drought in Sub-Saharan Africa that killed more than 200,000 people and millions of animals. The severity prompted numerous global discussions and initiatives over the next two decades to address these grave societal challenges—drought and desertification.

On June 17, 1994, the UN Convention to Combat Desertification (UNCCD) was adopted in Paris as a global effort to fight desertification and drought, primarily in Africa. Six months later, the UN General Assembly decided that, from 1995, June 17 would be observed as The World Day to Combat Desertification and Drought to increase public awareness of these vital environmental concerns. Twenty-five years later, this year, the day has been renamed as Desertification and Drought Day.

Just to clarify, desertification does not mean expansion or creation of deserts. It is in fact a process where the quality of land gets degraded—through clearing of tree covers, unplanned and over-exploitation of land resources, erosion of hills and rive banks, chemical pollution of land, and salinity intrusion, for example. Back in the 1990s, Bangladesh did recognise land degradation as a growing concern, as well as seasonal and long rainless spells, especially in the north-western part of the country.

Bangladesh signed the UNCCD in 1996. This UN convention is rather less known than its two sister conventions—the Convention on Biological Diversity (CBD) and the UN Framework Convention on Climate Change (UNFCCC). These three UN conventions together are called the Rio Conventions—as they were the direct outcomes of the UN Conference on Environment and Development or the Rio Earth Summit held in June 1992 in Rio de Janeiro, Brazil.

Prepared in line with the UNCCD, the National Action Programme (NAP) for Combating Desertification (2005) was Bangladesh's first comprehensive attempt to tackle land degradation. This enthusiasm gradually dried out over the following years, and land degradation in Bangladesh continued. From 2000 to 2010, for example, 334 square kilometres of forest land in Bangladesh was converted to shrub/grass land or cropland.

There are a few possible reasons for the UNCCD implementation getting sidetracked. First, overwhelming global attention to and resources for climate actions and biodiversity conservation, facilitated by the UNFCCC and the CBD processes, respectively, made the UNCCD a backbencher. Those two conventions also deal with land degradation and drought as a part of changing climate, carbon emissions, over-exploitation of natural resources, and destruction of ecosystems discourses—the second reason for the UNCCD struggling to find its unique niche.

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Thirdly (although this is up for debate), the leadership—both at national and global levels—could also be responsible for limited attention and action to tackle land degradation. In Bangladesh, for example, while the Ministry of Environment, Forest and Climate Change is accountable for implementing the UNCCD decisions, more resourceful ministries, like agriculture, land, local government, and road transport and bridges, are managing the country's land resources according to government priorities.

PHOTO: AFP/GETTY

In 2015, the fight against land degradation was rejuvenated globally as the UN General Assembly approved the Sustainable Development Goals (SDGs). Out of 17 SDGs, the UNCCD started focusing on SDG 15—life on land. More specifically, the convention deals with target 15.3—one of 169 SDG targets—which says "By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world".

"A land degradation-neutral world" is indeed a very ambitious vision. Nevertheless, if we move towards such "neutrality", the concept of Land Degradation Neutrality (LDN) can help us to measure our progress. LDN talks about a condition where the amount and quality of land needed to support ecosystem's functions and to improve food security remains at least stable. In other words—no more degradation occurs in a given piece of land, over a period of time.

In 2018, Bangladesh voluntarily set six targets towards LDN to be achieved over the next 12 years. In the National Report on Land Degradation Neutrality Target Setting Programme submitted to the UNCCD, the country promises to increase soil fertility and carbon content in 2000 square kilometres of cropland, to protect 1200 square kilometres of non-saline coastal land from salinity intrusion, and to reduce conversion of 600 square kilometres of forest area, waterlogging in 600 square kilometres of area, soil erosion in 600 square kilometres of hilly areas and river bank erosion in 100 square kilometres of area—all by 2030, in line with the SDGs.

To meet these targets, the government has proposed a number of nature-based solutions—afforestation, reforestation, green-belt creation, village forestry, agro-forestry, slope stabilisation with vegetation, and river bank protection and charland stabilisation with plantation—many of which have long been practiced in Bangladesh for disaster risk reduction, climate change adaptation and ecosystem management.

We should now bring our experiences together and invest our limited financial resources in nature-based solutions that will not only reduce land degradation, but also fight the climate crisis and biodiversity loss in a cost-effective and efficient manner, with the people.

As we get ready to revive our economy after the pandemic, we need to stop seeing land only as a source to generate revenue, a space for rampant agro-chemical application, and a resource to abuse. We need to see soil as a living entity that feeds us, that shelters biodiversity, and that has the tremendous potential to store carbon, large enough to keep the global temperature increase below 1.5 degrees Celsius by 2030.

It is time for the Ministry of Environment, Forest and Climate Change to take the lead and push for Land Degradation Neutrality as a priority in Bangladesh's land use sector. As the ministry is responsible for strategies and actions against land degradation, climate change and biodiversity loss, it needs to coordinate its efforts and investments around nature-based solutions to address all three societal challenges together. We should not miss this opportunity.

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Using satellites to get the real picture of development

The untold story of remotely sensed data

Tanvir Kabir *and* Iftekhairul Islam

How can you tell if the nearest drinking water source is safe? What would be the agriculture yield this year, factoring in all the variables? How can we identify the optimum location for a rural healthcare facility? We can follow conventional approaches to look for the answers, but if we need a consistent, timely and cost-effective solution, we must take the help of what is known as Remotely-Sensed (RS) data. Analysing RS and geospatial data has become the latest innovation in data generation. RS data comprises the images taken by satellites and UAVs (Unmanned Aerial Vehicle) that can be processed and modified to obtain critical information. The enormous scope of this unique source of intelligence has amazed stakeholders from science, technology, geology and policymaking alike. The easy-to-access nature of such data is unfurling new avenues of opportunity every day. In the last several years, it has made its foray into the monitoring and evaluation of development goals advocated by the United Nations (UN).

Assessing the outcomes of the Millennium Development Goals (MDGs), the UN came up with the Sustainable Development Goals (SDGs) in September 2015. These goals underscore a triple bottom line approach of human wellbeing by integrating agreed synergies and trade-offs among economic development, environmental sustainability and social inclusion, adopted by world leaders and development partners. This time around, the objectives are much broader in scope, with 17 goals and 169 target areas. One compelling dimension of the SDGs is keeping in mind "the health of the Earth" while pursuing development goals. This makes the implementation and monitoring part all the more complex.

Collecting data continuously and on a significant scale is the basis of success in achieving these goals. That is where the whole initiative faces a considerable challenge. Development experts believe that conducting the census every ten years is not enough to detect the latent yet critical changes in socioeconomic indicators. Along with this regular practice, every country must portray an accurate and consistent picture of the indicators. According to estimates, it could cost up to USD 253 billion to monitor socioeconomic targets through household survey data on a broad scale for the entire lifetime of the SDGs.

The application of RS data can play a critical role here. There are several Earth Observation (EO) satellite programmes like Landsat by NASA and Sentinel by ESA (the space agencies of the USA and European Union) that provide free access to high-resolution images and a wide variety of updated information. A developing country could save a ton of money and time and still extract relevant insight out of these data. With the recent development in big data analysis assisted by state-of-the-art software and cheap computing power, satellite images can aid in detecting suitable agricultural land or safe water sources, predicting floods and volcanic eruptions, or managing evacuation in a wildfire or cyclone.

RS data could provide more specific recommendations suitable for targeted SDG interventions and local execution as well. As the methods of data collection from census and yearly surveys are different from country to country, RS data could support a standardised platform for analyses and policy suggestions. It can help solve the perpetual problem of infrequent and insufficient conventional data sources. These compelling features of RS data in measuring development factors has recently caught the attention of the UN's High-Level Political Forum to kickstart a conversation on "Data for Sustainable Development".

So how exactly can RS data help achieve the SDGs? The UN Statistics Division estimated that approximately 20 percent of the SDG indicators could be translated and determined either through direct use of geospatial data itself or through integration with other statistical data. Indonesia has been using a GIS-based poverty map as a tool to detect inequality and disparity within the country. Many of their social protection programmes are hinged on such data. Geospatial analysis could further offer intelligence on the precise level of irrigation, fertilisers, pesticides and seeds required for optimum yield. The Indian state of Kerala has been analysing satellite images for making accurate agricultural decisions. Vietnam has also been using RS data to fight arsenic contamination and land subsidence issues in the Mekong delta. Many countries from Africa are applying satellite imagery to institute a substantive healthcare system like finding the optimum location of healthcare facilities, predicting patterns and distribution of diseases, monitoring the quality of air, and identifying sources of safe drinking water.

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RS data can also be applied to track and control unbridled urbanisation, deforestation and desertification. South American countries are benefitting exceptionally in the battle against illegal cutting and land-grabbing as they turn actionable insights out of satellite imagery. Countries that bank heavily on the blue economy utilise bathymetric data from satellites and sensors. They can take practical measures to maximise fishing output. These data also help predict the contamination of the river and sea by analysing the colour and texture of the surface water. One geospatial study projects that the entire coastal region of Bangladesh could drown if the sea level rises 18 inches due to global warming. It would affect more than 15 million people. RS data could help to formulate a secure and robust relocation programme for them if necessary.

The potential for applying GIS data in the development sector of Bangladesh is enormous. Being a signatory of the SDG protocol, Bangladesh must take advantage of this technology to keep up with monitoring and evaluating the indicators. For example, India has its programmes for auditing and assessing SDGs promoted by the Indian Space Research Organization (ISRO). As Bangladesh has already entered into the prestigious league of flying its own satellites, it is high time to move forward with new satellites equipped with sophisticated sensors and cameras. The Prime Minister recently mentioned in a speech that we must ensure the optimum use of land and resources to fight the economic fallout from the pandemic. Cutting edge geospatial and big data analysis, and state-of-the-art facilities for space and geo sciences, hold the key to this end.

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QUOTABLE *Quote*

ROBIN DIANGELO
(Born 1956)
American academic, lecturer, and author.

Like a nontechnical user trying to understand a technical problem, our racial illiteracy limits our ability to have meaningful conversations about race.

CROSSWORD BY THOMAS JOSEPH

ACROSS
1 Does a yard job
5 Secret store
10 "To repeat ..."
12 Turkish bigwig
13 Dull finish
14 Church feature
15 Mamie's husband
16 Scanner target
18 Drive-in server
20 Crater part
21 Hand cost
23 Powerful people
24 Green shade
26 Carpet type
28 Cotillion girl
29 Spot
31 Water cooler
32 La Brea sight
36 China's region
39 Verb for you
40 Showy detail
41 Consumed
43 Make blank
44 Book part
45 Zellweger of "Judy"
46 Frost, e.g.

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3 Bottled buy
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5 Ship pole
6 Soft mineral
7 Oregon city
8 Slight variation of color
9 Chambers for women
11 Prepares a fillet
17 Gifted
19 Deli choice
22 Manor settings
24 "Smiley's People" author
25 From Portugal or Spain
27 That woman
28 Disagree
30 "– a deal!"
33 Cookout site
34 Dancer Castle
35 Principle
37 Otherwise
38 Out of the wind
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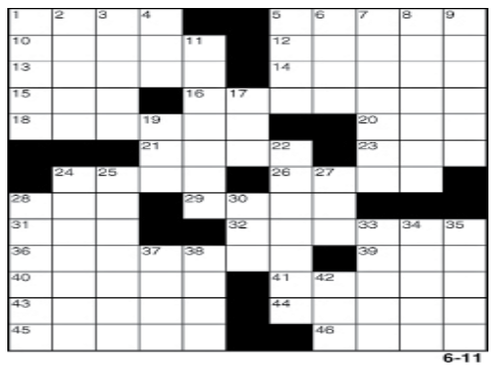

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YESTERDAY'S **ANSWERS**

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BEETLE BAILEY BY MORT WALKER

BABY BLUES BY KIRKMAN & SCOTT