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BANGLADESH ACROSS 50 YEARS : Volume 2

Foreign Policy, International Organizations, & Sustainable Environmental Development

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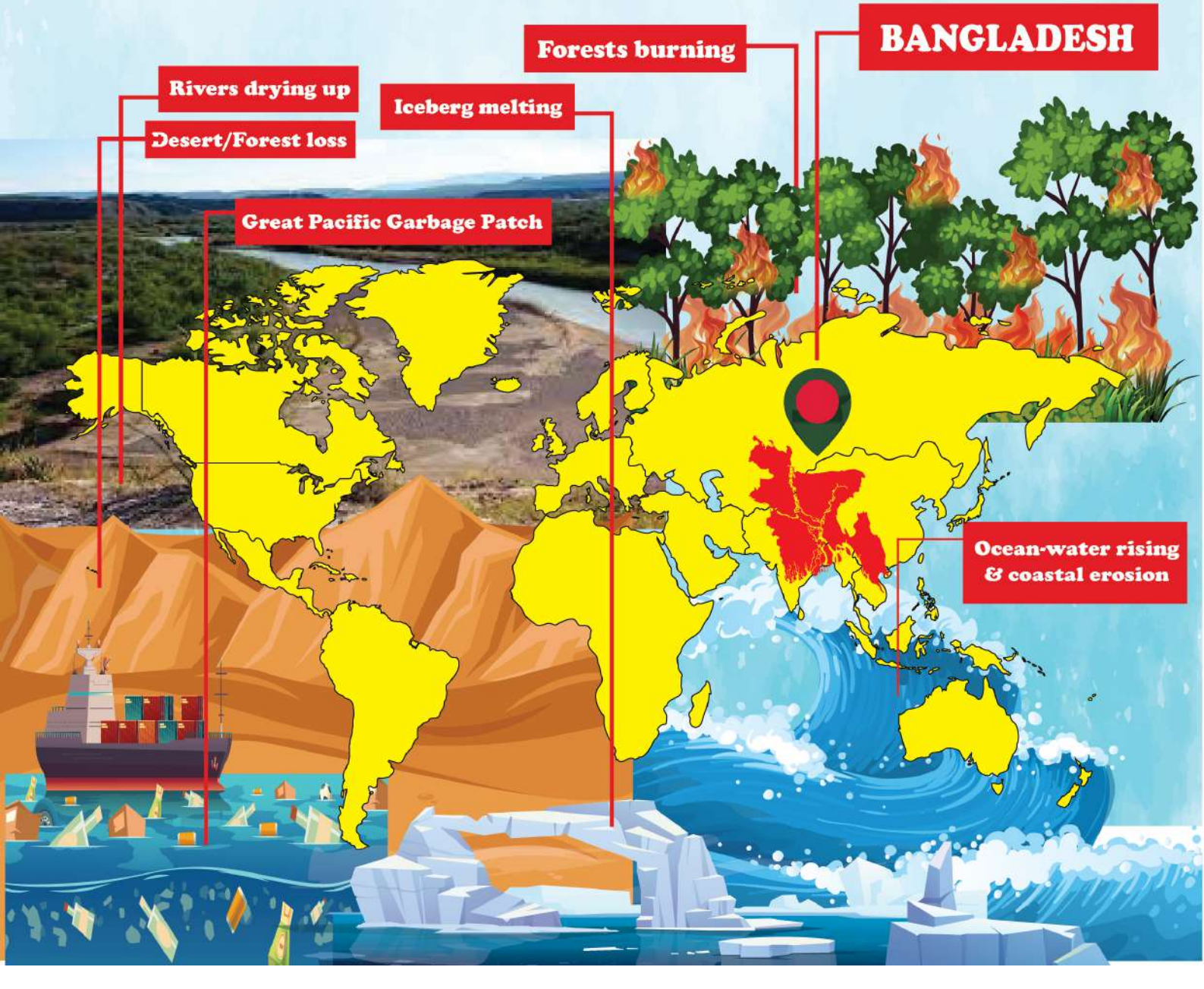

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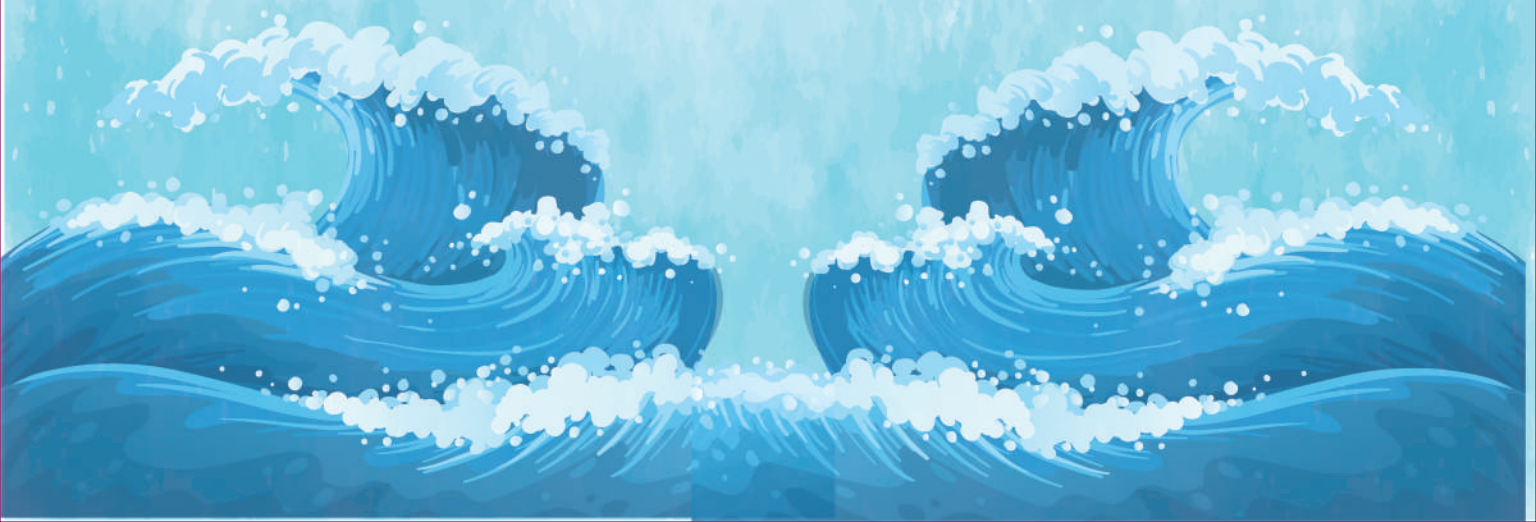

FOURTH INDUSTRIAL REVOLUTION BATTLING CLIMATE CRISIS: BANGLADESH'S JOURNEY

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Since its independence in 1971, Bangladesh has achieved a remarkable transition from being one of the poorest countries in the world to becoming a role model of climate smart development. In the past decade the GDP of the country has increased consistently amid various challenges, which include climate crisis, global economic recession and the COVID 19 pandemic. However, the continuity of this extraordinary journey can be threatened by intensification of climate change as indicated in the IPCC (Intergovernmental Panel on Climate Change) 6th Assessment Report (2021). Bangladesh is currently undergoing an unprecedented transformation by aligning itself with the opportunities of the Fourth Industrial Revolution and embracing its development pathways. The Fourth Industrial Revolution, popularly referred to as 4IR and at times as Industry 4.0, is currently gaining momentum around the world. This is transforming the existing production systems by coalescing digital and physical technologies to address the world's most pressing environmental challenges including climate change. By embracing the Fourth Industrial Revolution through digital innovation, Bangladesh is in the process of creating a conducive environment for proactive climate strategies that includes vulnerable communities, policymakers, scientists, businesspersons, civil society and technology inventors. The *Digital Bangladesh* program was officially initiated in 2009 with the aim of converting Bangladesh into a country with a digital economy by 2021. The program is based on four pillars - human resource development, citizen connectivity, digital government, and promotion of the ICT (information and communication technologies industry. Under this, nation-wide strategies are implemented for developing "Green" ICT based infrastructure and services all across the country to combat the adverse impacts of climate change.

Bangladesh is currently ranked the 7th most vulnerable country to climate change impacts in the Global Climate Risk Index, 2020. The geographical location of Bangladesh makes it more prone to numerous frequent and recurrent disasters such as floods, cyclones, earthquakes, and so forth. Higher storm surges associated with cyclones intensified by changing climatic conditions have increased the vulnerability of coastal populations of the country.

Other hydrological disasters are also expected to intensify and become frequent, threatening almost all the sectors that contribute to the country's ambition to achieve sustainable development goals (SDGs). With a continuously evolving digital landscape, government and non-governmental organizations and businesses can adopt innovative approaches to tackle seemingly intractable challenges stemming from climate change. Over the last two decades, the Government of Bangladesh has enacted laws, adopted policies and undertaken initiatives to facilitate robust climate change adaptation and mitigation efforts. The Environment Conservation Act (ECA) has established the Department of Environment (DOE) and authorized its Director General (DG) to take all the necessary steps for the conservation of environment, improvement of environmental standards and the control and mitigation of pollution. The other major policy initiatives undertaken include the Intended Nationally Determined Contributions (INDCs), the Power System Master Plan, the Renewable Energy Policy, the Energy Efficiency and Conservation Master Plan, the National Sustainable Development Plan, the Perspective Plan (Vision 2021), National Energy Plan, and Eighth Five-Year Plan. In case of INDCs, Bangladesh has pledged to make an unconditional 5% reduction in greenhouse gas emissions from the 2011 level by 2030, and conditional 15% reduction, depending on international support through investments, financing, capacity building, and technology transfer. Innovative INDC agricultural policies proposed by the Government of Bangladesh include curtailing draft cattle use by 50%, increasing the share of organic fertilizers by 35%, and ensuring that 20% of rice cultivation adopts smart irrigation methods. Innovative agricultural adaptation practices have already been implemented in different regions of Bangladesh. Such practices include introduction of drought tolerant crops such as rice, groundnuts, watermelon; introduction of low-cost and efficient irrigation methods; and cultivation of saline tolerant varieties of rice, chili, mustard, maize and potato. The proliferation of these practices to the most remote ends of the country are possible due to the advancements in cutting-edge technologies.

In the case of agricultural technologies, mechanization through adoption and incorporation of advanced tools such as power tillers, tractors and automated combined harvester machines have prevented crop loss and damage in the face of climate change. During the onset of super cyclonic storm Amphan in May 2020, farmers were able to harvest their crops in time using such automated tools while avoiding potential crop loss: 90-97% of the total paddy production in Khulna and up to 90% of paddy production in Satkhira was successfully harvested before the cyclone made landfall. According to a recent estimate by the Department of Agriculture Extension, farmers all over Bangladesh are now threshing more than 90% of their grains, and tilling nearly 90% of the cultivable land using automated machineries. Bangladesh's first local Genetically Modified Organisms (GMO), *Bt Brinjal*, was launched in 2014. A recent study revealed that *Bt Brinjal* farmers have increased their net profit by over BDT 30,000 per hectare. This has been possible because such GMOs are resistant to weather conditions, pests, flooding and/or saline intrusion. This is a viable technological solution for Bangladesh in terms of food insecurity arising from variable weather patterns. Currently there are many other ongoing small-scale experiments to include the application of Internet of Things (IoT) in remote monitoring of conditions (humidity, soil moisture etc.) to support agricultural development.

It is worth mentioning that in the last 50 years although the population of the country has increased more than 100%, the levels of extreme poverty decreased remarkably, although there is a significant portion of the total population living below the poverty line. While approximately 30% of the population still face food insecurity, an influx of about one million of Rohingya has become an additional threat for the food security of the country which is already the most densely populated country in the world.

Bangladesh is currently ranked the 7th most vulnerable country to climate change impacIn addition to food security, food safety is another issue which did not get enough attention in the last 50 years. Although there is the Food Safety Act 2013, food adulteration by chemicals has not been stopped and safe food has not been ensured yet, and it is a potential threat for public health as food adulteration by chemicals such as formalin can lead to deadly disease like cancer.

The basis of Bangladesh's sustained economic growth has been supported by the steady growth of the power sector. This sector is however increasingly contributing to GHG (greenhouse gases) emissions and hence, Bangladesh has endorsed affordable off-grid renewable energy (solar) solutions in remote and hard-to-reach areas through a public-private partnership to ensure clean energy for all. The government is driving up renewable energy and offering a host of incentives such as tax-breaks to promote installation of drive net-metered solar rooftops. From 2003 to 2018, GHG emissions were reduced by approximately 9.6 million tons of CO2 equivalent because of the installation of solar home systems. The Bangladesh Solar Home Systems (SHS) Program is the largest national program in the world for off-grid electrification. Furthermore, the power sector of Bangladesh has taken various measures including prepaid metering, enterprise resource planning (ERP), supervisory control, and data acquisition (SCADA), and upgrade of geographic information system (GIS) for more efficient management of electricity production and distribution.

Along with the sectoral development, the Government of Bangladesh is implementing a digital governance architecture to ensure more localized, inclusive, efficient, rapid and participatory decision making. The national ICT Policy 2009 provides emphasis on climate change adaptation and disaster management through early warning and geographic information system (GIS) and remote sensing services. The Government of Bangladesh initiated a range of information and communication technologies for development (ICT4D) projects for rural and remote communities to provide agriculture- and climate-related information. Establishment of Union Digital Centers (UDCs) with internet connectivity have ensured one-stop service centers delivering all public and private services to rural citizens. Inclusion of vulnerable communities at the grassroots level in the digital landscape is pertinent to achieving the greater aspects of climate change resilience. UDC is a public-private-people's partnership (PPPP) model constituting the central and local governments, the private entrepreneur (Uddakta), and the local people. Entrepreneurs can now collect clearances from government offices through an IT network without citizens having to run around different offices, undertaking multiple visits and incurring costs. Connecting rural populations to the information superhighways has allowed rapid bottom-up communication, instant disaster early warning mechanism, more localized disaster responses, and post-disaster health services delivery. As of 2021, Bangladesh has one of the highest levels of 4G population coverage (95%) in South Asia and is developing their infrastructure to upgrade to 5G coverage. People in the southwest region of Bangladesh are using such ICT services for climate smart agricultural solutions like saline-tolerant cropping varieties, eco-balanced organic and hydroponic farming techniques, fish cultivation in flooded water bodies, and in other relevant areas. Furthermore, such digital transformation has the potential to decouple or minimize the GHG emissions associated with Bangladesh becoming the high-income country by 2041.

Bangladesh has been experiencing a digital transformation as well as sustained economic growth over the past twelve years. So far, the achievements of Bangladesh in embracing the technologies of IR4.0, are nothing short of remarkable. The implementation of Sustainable Development Goals, Vision 2041, and Delta Plan 2100, amongst others, has created huge employment opportunities in the country for people skilled in science and technical knowledge. The overall impact of new technologies, both intended and unintended, will ultimately determine the future of sustainable economic growth for the country. As the countries of the world race to embrace the Fourth Industrial Revolution, Bangladesh's age-old competitive advantage of available low-cost labor will face severe challenges. To overcome this and to fully utilize and exploit the benefits of IR4.0 technologies, Bangladesh needs to further customize its industrial, environmental and economic strategies and policies for its major revenue generating sectors. This will undoubtedly allow Bangladesh to harness the innovation opportunities from IR4.0 to meet economic aspirations, to attain SDG targets, and to create a vibrant and versatile economy for the future workforce.

It is a great honor for the country that our honorable prime minister Sheikh Hasina has been awarded the SDG progress award by the United Nation for significant progress in achieving SDGs. This is today's Bangladesh which was termed as a bottomless basket 50 years back.

ON THE RIVERS OF BANGLADESH

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If ever there was a land of rivers, Bangladesh is it. Padma, Meghna, Jamuna, Surma, Brahmaputra are not only significant rivers coursing through this country but the names also evoke strong emotions in every Bangladeshi. Rivers are very much part of the ecology, economy and culture of the country. This deltaic region was born of rivers—conceived through centuries of sedimentation originating from the Himalayan ranges. Rivers are the main source of water for agriculture, the main source of transportation for many commercial activities and also fish, the main source of protein for the people. This region was famous for its cultivation of jute and the muslin industries, both dependent on local climatic conditions brought on by rivers. The jute plant, which needs alluvial soil and standing water, was an important part of the economy of this region for centuries. Muslin, a very delicate hand-spun yarn, was produced by artisans who depended on the high humidity provided by the water bodies for their craft.

When the time came for the sons and daughters of the soil to yearn for a free, independent country of Bangladesh, the mighty rivers became an important component of the Liberation War of 1971. The powerful Pakistani Army could not navigate through the unfamiliar terrain of so many rivers which gave an automatic advantage to the local freedom fighters of Bangladesh, the *Mukti Bahini*. The *Mukti Bahini* utilized the complex network of large and small rivers to ambush the enemy which had a large part in the success of Bangladeshis in the War for Liberation[1]. Stories have been written in which Pakistani soldiers were frightened of these enormous water bodies, as no Pakistani soldier had ever seen such gigantic water bodies.[2] It is estimated that in Bangladesh more than 700 rivers run for a total of 24,000 km[3]. Bangladesh sits on the Ganges-Brahmaputra-Meghna Delta and the many crisscrossing estuaries of our country unite in the large rivers which in turn feed into the Bay of Bengal. The deposited sediments from the hundreds of rivers that flow within Bangladesh have given rise to fertile croplands. The people, whether they are involved in agriculture, commerce, or trade, have been dependent on rivers for their livelihoods. Bestowed with a network of so many rivers, Bangladesh is truly unique. This is how the natural endowment that rivers are have gone on to contribute to forming a riverine economy in the country. Rivers are insurmountable natural blessings for the country's economy, and river water has been instrumental to allow for irrigation in the lush, serene green fields of paddy and other staple crops. Irrigation is the only way during the dry season for cultivation and river water brings alluvium to the soil to enhance our land, such as the irrigation project in the Teesta.

While the use of modern technology in agriculture has contributed to increased food production for a large population of the country, this fertile land has also been enriched through the bountiful quantities of fish that the rivers give us. Six out of 10 people in Bangladesh depend on fish in the rivers for protein intake[4]. One needs to look no further than the national fish *ilish* (hilsa), whose appeal helps understand the proverb "*Machhey bhate Bangali*" (fish and rice make Bengalees). Fishes bring economic dividends— more than one-fifth of the country's agricultural GDP is made up of fish trade.[4] One such recent example is the thousands of metric tonnes of *ilish* being exported to neighbouring India.[5] Fishes from our rivers and crops from the lands not only help bring revenues from exports but provide a source of employment to many fishermen and farmers respectively.

The significance of the rivers of Bangladesh can also be understood when one looks at the connectivity that is enhanced by the rivers. The capital Dhaka and the port city Chattogram have been constructed on the banks of the Buriganga and both sides of the Karnaphuli, respectively. Travelling to and from these two economical hubs is assisted by the rivers — even today, for example, to reach districts such as Barishal and Chandpur from Dhaka, more affordable travel happens through rivers than through the roads. Large number of boats, launches and steamers stationed at the river port of Sadarghat in Dhaka transport hundreds of thousands of commuters and tons of goods every single day. Rivers also are the centre of development of the country, whether it be in terms of electricity generation through the construction of the Kaptai Dam on the Karnaphuli or the enhancement of connectivity through the Jamuna Bridge in the 2000s, development projects and rivers have gone hand-in-hand for decades. The most ambitious project over rivers has to be the construction of the six-kilometre bridge on the mighty Padma which will completely change the country linking the southwest of the country to the northeast.

Despite all that the rivers give us, we may ask the vital question - what have we, as individuals, done for our rivers? We are contaminating rivers in many ways - choking them with plastic, garbage, unwanted refuse that we discard into the river. Industrial effluents, agricultural waste like excess fertilizers and pesticides make their way into rivers and water bodies and pollution levels have reached alarming levels in Bangladesh.[6,7] Many rivers are drying up or are choked because of encroachment and ill-conceived river management practices.

Unchecked and uncontrolled encroachment of rivers by land-grabbers has made even once-mighty rivers into small streams or in some cases have dried them up completely. Alarmed by the unbridled exploitation of the rivers, the High Court Division of the Supreme Court of Bangladesh delivered a decision granting all rivers with 'legal personhood' which effectively grants all rivers in Bangladesh with legal protection. Yet, the exploitation and pollution of our rivers continue unabated. Every day we see features and columns in our newspapers about pollution of our waterways and well-intentioned but ineffective efforts to clean them. The problem seems massive and the remedies seem far away.

What then, is the solution? Bangladesh is a unique country born under a unique set of experiences and we face unique problems. The solutions to problems in this country have to come from the people of this country and that can only happen when there is a better understanding of the central importance of rivers in our lives. We can pass laws and impose fines as much as we want but until there is an awareness of the importance and significance of rivers among the general population, there will not be any significant changes.

It is heartening to see that some organisations have started working towards increasing people's awareness about rivers and our collective responsibility towards them but their numbers are not enough. Why save rivers? We could counter this with another question: where do we, Bangladeshis, come from? Who do we owe our existence to? If we do not save our rivers, then who will? Rivers are dying but their revival will depend on each and every one of us fighting to restore their former majestic glory

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TRIPLE TROUBLE: DHAKA'S SINKING FEELING?

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Bangladesh may be climbing the economic ladder, but Dhaka (Dacca until 1971), its capital city, hangs by a thread: 21 million inhabitants and 2,100+ industrial units packed into 310-odd sq kms (United Nations, 2020), with more groundwater consumption than replacement. As a Mughal Empire regional capital from 1610, the city's peak population of under a million (in 1710), was the same as when the Dacca Water and Sewage Authority (DWASA) was founded in 1962. Dhaka's future lies upon conserving water. With 3 meters being lost annually now, but 5 meters are expected to be lost by 2030 (Water Resources Group, *Rapid Assessment*, 2019, 3-4).

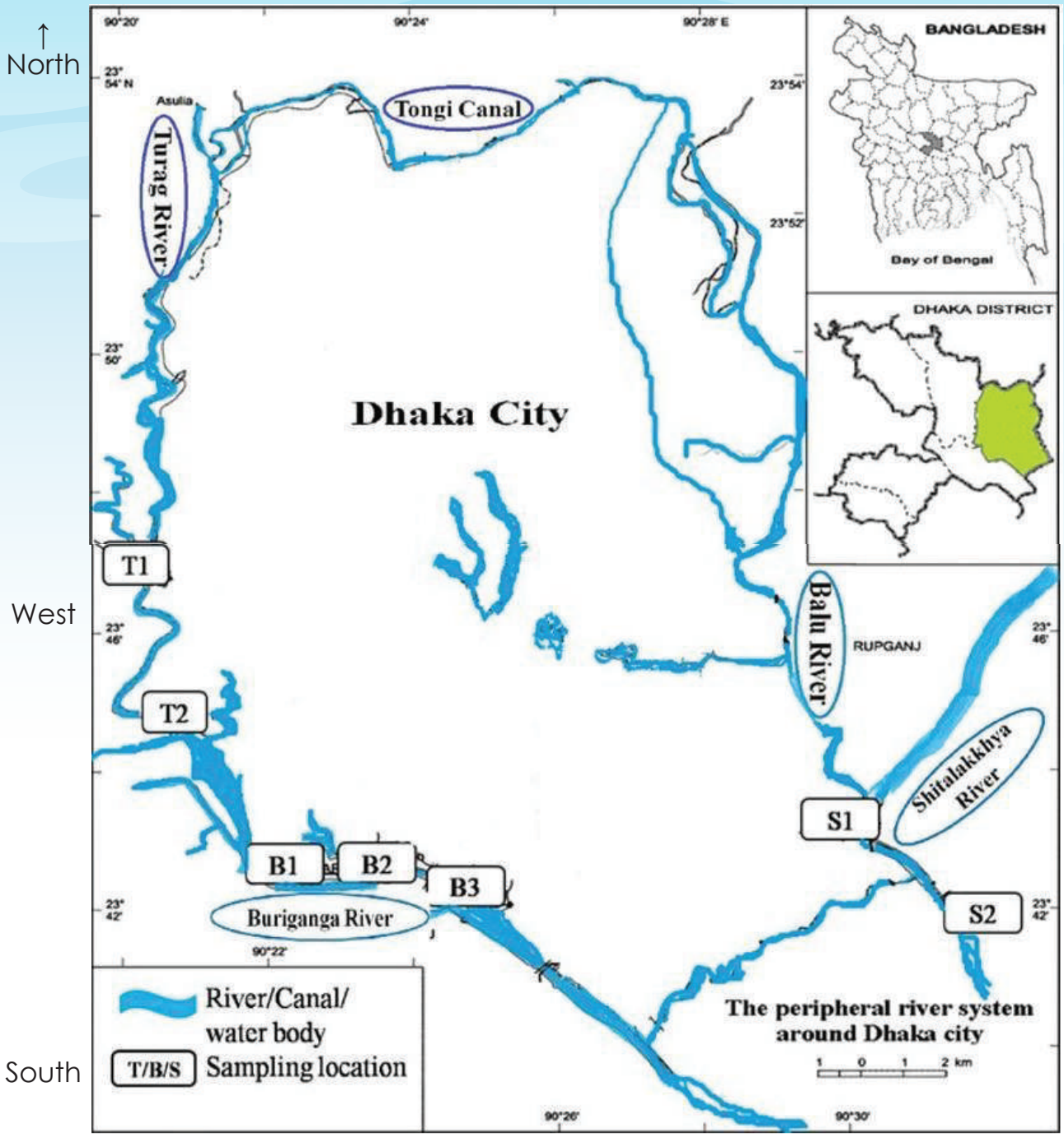
Market reforms and environmental solutions fight for the top-spot in reforming the city's above malaise. Whereas the World Bank favors the former, World Wildlife Fund stands behind the latter, with the Asian Development Bank (ADB) somewhere in between.

Dhaka's desired outcomes: (a) show a human face; (b) decentralize by *shifting* extant industries, rather than *creating* new ones; (c) catalyze the 100-odd new special economic zones to absorb these industries; and (d) capitalize upon megaprojects being built.

Groundwater: That Sinking Feeling

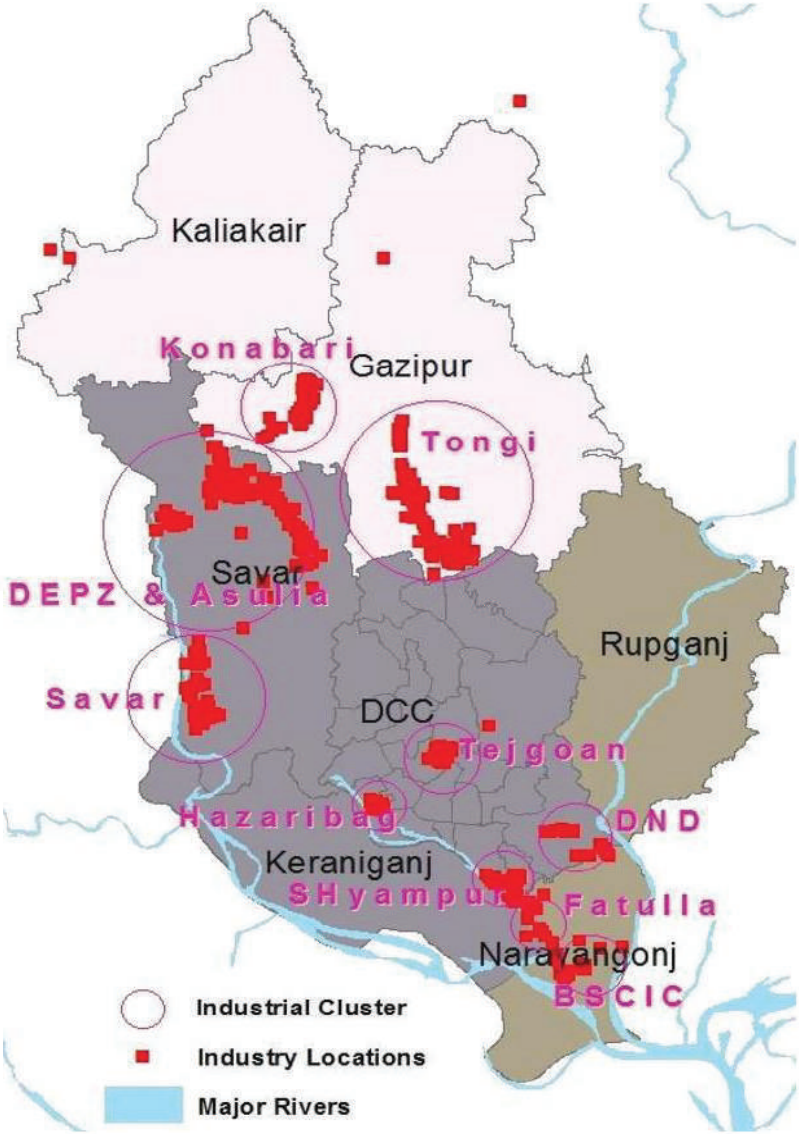
Maps 1, 2, 3 & 4 give a lay of the land depicting rivers, neighborhoods, soil permeability and groundwater declination, respectively, Figures 1, 2, and 3, as well as Tables 1 and 2 crunch and collate the numbers for water abstraction, demand, and supply with population.

MAP 1: DHAKA'S RECTANGULAR RIVER NETWORK



Source: Md.Saiful Islam, M. Khabir Uddin, Shafi M. Tareq, MashuraShammi, Abdul Kadirlbne Kamal, Tomohiro Sugano, Masaaki Kurasaki, Takeshi Saito, Shunitz Tanaka, & Hideki Kuramitz, "Alteration of water pollution level with the seasonal changes in mean daily discharge in three main rivers around Dhaka City, Bangladesh," *Environment*, vol. 2 (2015): 284, but see 280-94.

MAP 2: DHAKA'S NEIGHBORHOODS & INDUSTRIES

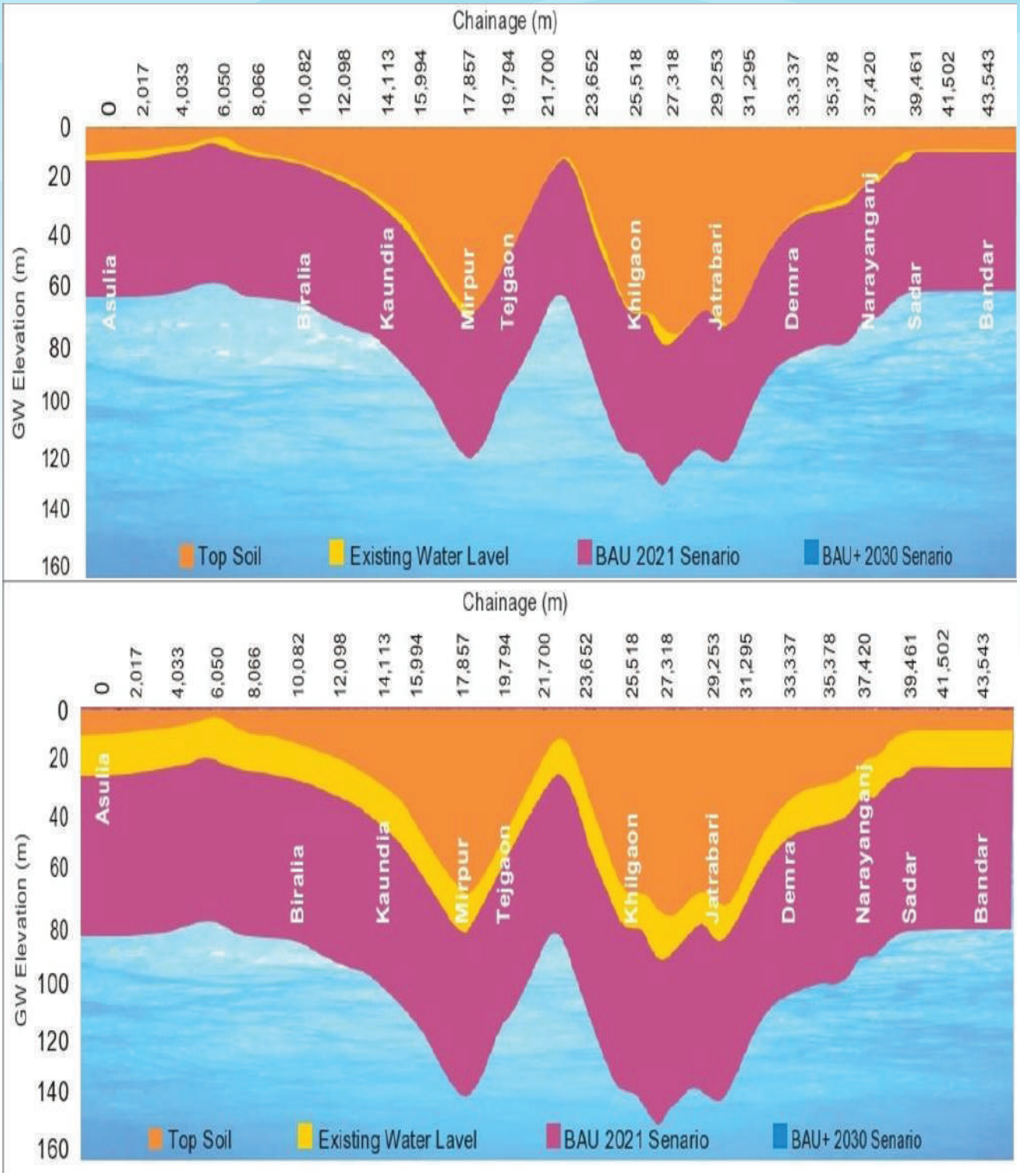


Source: Bangladesh Water Partnership, Global Water Partnership, & Water Resources Group, *Ground Water Sustainability Assessment for the Greater Dhaka Watershed Area: Rapid Assessment of Greater Dhaka Groundwater Sustainability* (April 2019), 7.

Soil: Embroiling Experiences

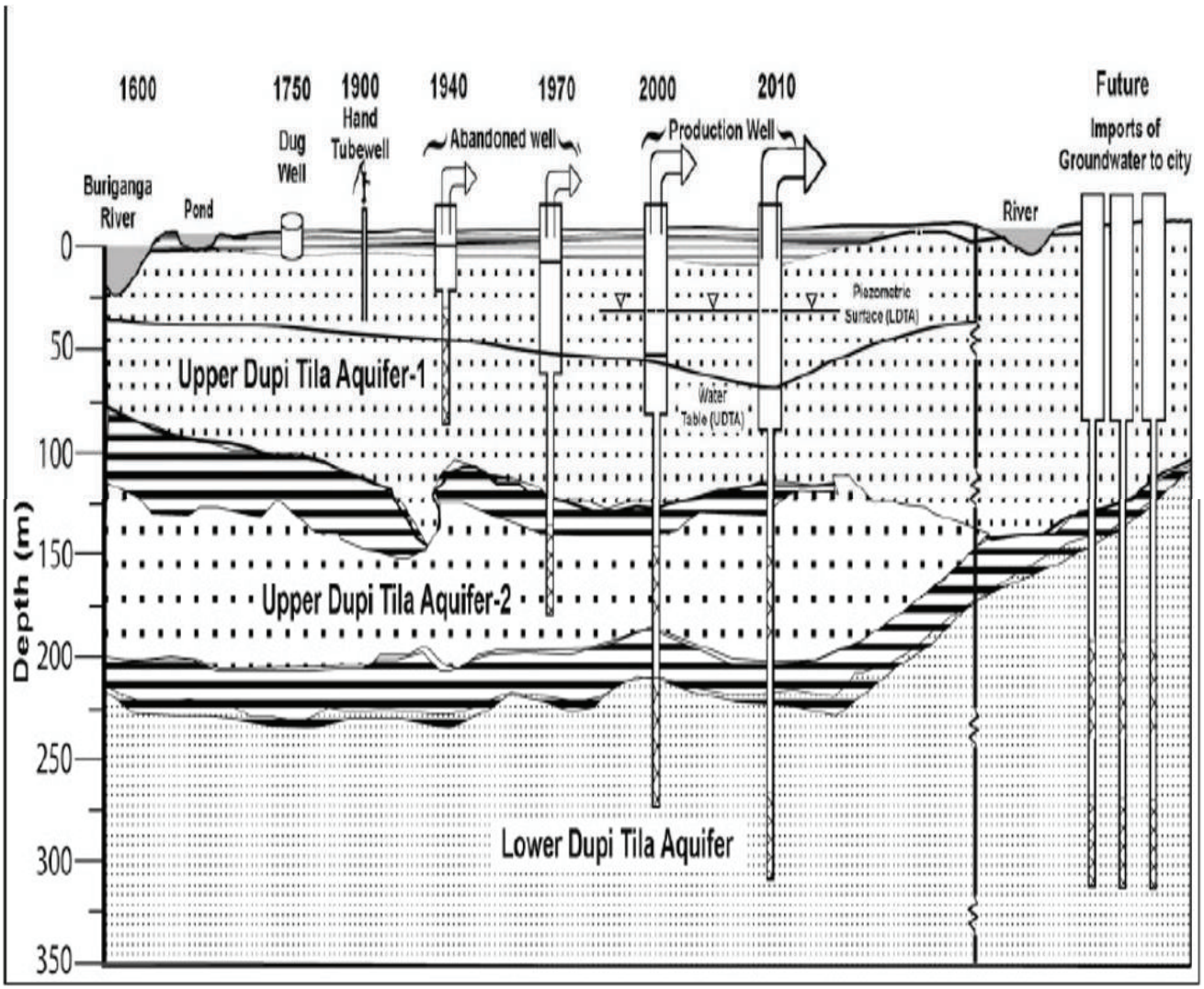
Disproportionately distributed groundwater supplies up to 80 per cent of the city's needs today (surface water the remainder), with Dupi Tila Aquifer (DTA) dominating. In Dhaka's southwardly-reclined deltaic terrain, the Pleistocene Madhupur Tract ground-soil fades into the far shallower Holocene sediment of the Dhamrai Formation to the west and Bashabo Formation towards the south-east (Hoque, Hoque, & Ahmed, 2001, 1524). Dhaka's soil permeability ranges from .01-.02 meters per day for clay, 13-26 meters for fine sand, 25-50 for medium sand, and 46-90 for coarse sand (Zahid, et al., 3). Accordingly, Dhaka's arsenic-free DTA oasis, once accessible only 40 meters below the mean surface level (MSL: the midpoint between the ocean's mean high-tide and low-tide), now lies 100+ meters below (Chowdhury, 2018). Our sinking feeling is set to sink more.

MAP 3: DHAKA NEIGHBORHOODs & GROUNDWATER DECLINATION



Source: Water Resources Group, *Ground Water Sustainability Assessment for the Greater Dhaka Watershed Area, 8*.

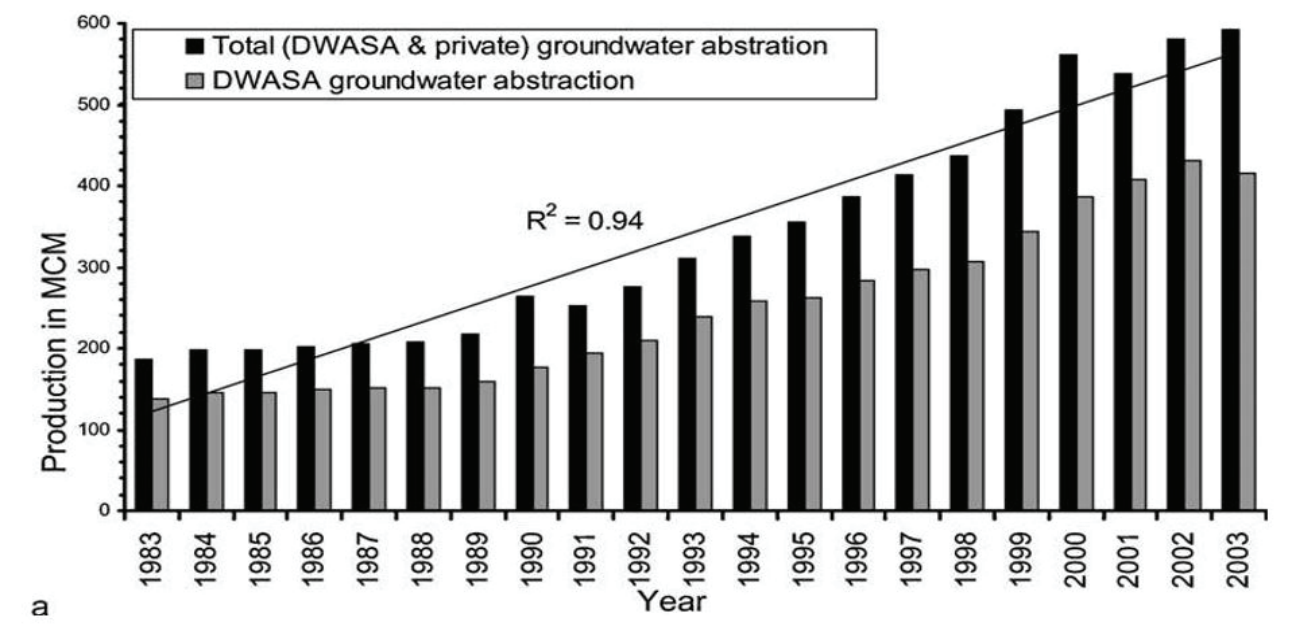
FIGURE 1: DHAKA'S SUBTERRANEAN & GROUNDWATER



Source: Kazi Matin Ahmed, Muhammad Saiful Islam, and Sarmin Sultana, "Changes in groundwater regime of Dhaka City: A historical perspective," *Celebration of 400 Years of Capital Dhaka: Celebration of 400 Years of Capital Dhaka: Plants, Wildlife, Gardens and Environment of Capital*, eds., S. U. Ahmed and G. Rabbani (Dhaka: Asiatic Society of Bangladesh, 2010), chapter.

Inflows stem from water gravitation from adjacent subterranean aquifers, distant pools, and sewage (Weight, 2000; Zahid, *et al*., n.d., 13); while tube-wells account for outflows (for both household and industrial usages). Over a thousand tube-wells littered the city's boundaries at the turn of this century, slightly over one-third under DWASA authority, the remainder, with emergent entrepreneurs (Rahman & Islam, 2019). Bangladesh Agricultural Development Corporation and Institute of Water Monitoring report how industries and migrants have been scooping up the groundwater (Sumon & Kalam, 2014): of 400-800 million liters in the 1990s (as compared to less than 200 million liters until the mid-1980s), extraction exceeds 2,000 million liters in the 21st Century (Zahid, Hossain, Ejaruddin, & Deeba, n.d.). Begum Ferdous Ara, BUILD (Business Initiative Lead Development) Chief Economic Officer, attributes the 17.4% DTA loss to (a) unregulated industrial expansion; (b) urban migration spiraling; (c) land-grabbing and encroachment; (d) saturated infrastructure; (e) lax institutional responsibilities; and (f) insufficient enforcement clauses.

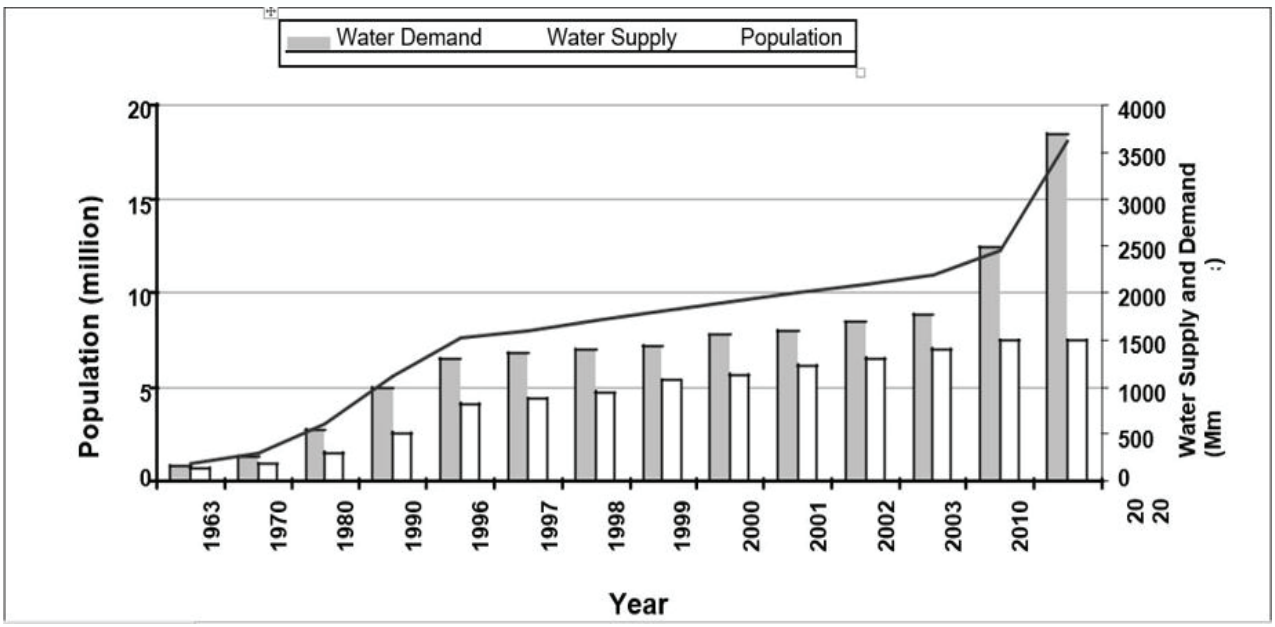
FIGURE 2: DHAKA GROUNDWATER ABSTRACTION, 1983-2003



Total groundwater abstraction in million cubic meters (MCM)

Source: Mohammad A. Hoque, M. Mozzammel Hoque, & Kazi Matin Ahmed, "Declining groundwater level and aquifer dewatering in Dhaka metropolitan area, Bangladesh: Causes and quantification," *Hydrogeology Journal,* vol. 15 (2007): 1525, but see 1523-34.

FIGURE 3: POPULATION & DEMAND/SUPPLY OF WATER IN DHAKA CITY



Source: Kazi Matin Ahmed, Muhammad Saiful Islam, and Sarmin Sultana, "Changes in groundwater regime of Dhaka City: A historical perspective," *Celebration of 400 Years of Capital Dhaka: Celebration of 400 Years of Capital Dhaka: Plants, Wildlife, Gardens and Environment of Capital,* eds., S. U. Ahmed and G. Rabbani (Dhaka: Asiatic Society of Bangladesh, 2010), chapter.

Dhaka's Rectangular River Graveyard?

Three of Dhaka's six rivers pose problems: Buriganga (south-west and west); Sitalakkhya (in the south-east and east corner); and Turag (along the north-west and north. A fourth, the Turag Canal (city's northern boundary) links Turag with Balu, the fifth river (in the north-east and east city flanks), and Dhaleswari (in the south), bridging the Buriganga and Sitalakkhya, is the sixth.

Md. Saiful Islam and others found 60,000 cubic meters of toxic wastes being dumped each day in the 3 central rivers during 2015 (with 15 million inbhabitants): 88 million tons of solid and 7.7 million of liquid waste from tanneries, and 56 million tons of waste and .5 million tons of sludge from textiles factories (Islam, *et al*., *Environment*, 280-3), all in the southern industrial pocket, Tejgaon Industrial Area to the east, and Hazaribagh (the leather fulcrum), in the west, straddling the Sitalakhyya, Dhaleswari, and Buriganga basins, respectively. Other industrial clusters include Savar's Dhaka Export Processing Zone (DEPZ) (northwest), Gazipur (north), and Ghorasal (northeast, feeding the Tongi River Basin).

One-third of the country's RMG factories and a higher proportion of leather tanneries (accounting for between 35-40% of its export income), can be found here: Buriganga, a 27 kilometer offshoot of the Dhaleswari, is described as "the most polluted river in Bangladesh," and the four-fold longer Sitalakhyya, is the country's "second most polluted river" (Islam et al., *op cit*.); Turag takes the Buriganga flows through the Mirpur north-west neighborhood into the Tongi Canal.

Rain (annual country average: 2.4 meters), and rivers (Brahmaputra and Ganges enter Bangladesh from its northern and western boundaries, respectively; the Karnafuli and Meghna from the eastern), supply the country's surface water (Ahmed, F., n.d.). Horizontal water-flows play a lesser role than vertical, given Dhaka's groundwater gradient, with maximum groundwater recharge during the Monsoon season (June-September), and dry-season aquifer shortages from October peak with voluptuous irrigation needs from February.

Consumption, Components, & Consequences: The Good, Bad, & Ugly

Dhaka's uneven clay-floor creates two 'upper' pools, Upper Dupi Tila Aquifer 1 (UDTA 1), which has dried up, and UDTA 2, which is close to exhaustion. Spiraling demands have made LDTA tapping a unique 21st Century development, digging 150 meters down to at least 350 meters deep. Further, UTDA 1 and UTDA 2 water differs (Ahmed, K.M., *et al*., n.d., henceforth KMA study): both satisfy 'acceptable [human consumption] limits', but the former carries more anthropogenic infiltration (chemicals), than the latter. Anticipating how "the city will eventually be unable to meet the rising demand for water," studies warn of 'water management' as a growing problem (as too, 'degradation of water quality' and 'land subsidence').

In spite of two 'landmark' high-court directives (the first with 9 orders to promote 'river conservation' in 2009; the second a 17-point counterpart in February 2019 giving rivers a 'legal entity' as a 'living body'), 7,000 land-grabbers claimed Sitalakkhya River banks when only 700 were registered in the official *Revised Survey*. Similarly, only 400 have registered claims for Buriganga banks, where 4,000 have illegally settled (Ali, 2019: 1-2). Resultantly, both uprooted migrants and top-of-the-line industrialists flout public property.

A majority of the 9,577 unauthorized boundary pillars found, according to Ali, were inside the river, or in river foreshore lines. These are expected to be replaced by 10,820 officially installed pillars along the entire 220 kilometer of Dhaka's river banks by 2022.

Water Management: Lethargic Lion?

Water extraction began with manually-dug wells in the mid-18th Century. By 1900, hand-tubes were introduced by the British, reaching 6 meters below, at most. By 2016, one study estimates 10 million shallow hand-pump tube-wells had been sunk country-wide from the 1970s. Three-quarters were private (Kundu, Vilet, & Gupta, 2016).

Another study reports 900,000 shallow and 80,000 deep tube-wells (KMA study), at 50-150 meters. Many ran dry. Others have arsenic contamination, threatening one-third of the country's population. By the 21st Century, production wells reached 300 meters down, again reaffirming the 1990s could have been the 'dividing line' between nonchalence and urgency.

Dhaka's first water treatment plant was at Chandnighat, on the Buriganga, built by Great Britain in 1878 as the first major Dacca Water Works project (inaugurated by Nawab Sir Abdul Gani in 1874 (Islam, 2015; & Sumon and Kalam, 2014, 3). Today's DWASA 21st Century 'turnaround' project also depends upon external stimuli, funding, and expertise.

At least half a dozen others and over 3,000 kilometers of water-pipelines have since been built under the surface (one-fourth of that built just in the last decade). Still the shortfall only widens. Reforms, like the 1996 DWASA Act and the 1998 National Policy for Safe Water Supply and Sanitation, have been drowned by RMG factory-growth and migrant inflows, demanding non-governmental organizations and external agency help, but leaving them rudderless (ADB, 2017).

Water pollution became another bug. It complicates asthma, colon cancer, diarrhea, kidney ailments, and maternal health problems, among others (Ahmed, 2018).

Dhaka's rivers have been shifting from *blue*, the best, to *red*, the worst, with *green*, *yellow*, and *brown* water varieties in between. Whereas blue refers to drinkable water, green is fit only for agriculture, and *yellow* for fisheries. Similarly, *brown* water is fit only for industrial usage, while *red* is restricted only for human/animal recreation.

A 2016 Dhaka-based *Plasma Plus Laboratories* measurement found Dhaka river water to be mostly *yellow* ("6 rivers around Dhaka," 2016): organic pollutants and non-degradable heavy waters had penetrated the water supply, with particularly ammonia, suggesting the presence of nitrogen and phosphate fertilizers. Touching the *brown* today and approaching the *red*, the city's threatened vital interest of water is only a breath away from damaging the country's.

Industrial Production: Materialism versus Sustainability

Sharp increases in groundwater extraction correlated with sudden river-ridden factory installations during the 1990s. RMG growth was responsible, beginning with *Riaz Garments*, from 1973 (along with *Jewel Garments* and *Paris Garments*, it led the 9-firm exporter list of exporters), teaming up with South Korea's Olanda from 1978.

The billion-dollar leather export industry (in a 215 billion USD global market), also chipped in (Shehab, 2019): of its 200-odd plants, 110 are in full operation, 20 of them large, 45 medium, and 48 small. Harzaribagh is the production fulcrum, but without an ETP (effluent treatment plant) facility: 29 hectares of land processes 85% of the country's hides and skins (Paul, *et al*., n.d.). ETP-equipped Savar's 200-acre Tannery Industrial Estate became the hub from 2017. Still, 155 tanneries remain woefully short of establishing standards, providing protective gear to workers, and training (Shehab, op. cit). Chemical treatment, environmental protection, and market access complicate matters (Shahiduzzaman, 2019).

Both industries damage rivers. Whereas water is *sine qua non* for both RMG *input* and *output*, it is affected by only the *output* discharges of leather. Both spew river-'killing' toxics (Satamoto, et al, 2019: 14; and Uttom & Rozario, 2018). According to the Department of Environment, Dhaka's rivers received 22,000 cubic meters of untreated toxic waste daily in 2015 (Kibria & Kader, 2015, 326). A water body's 'death' is associated in this part of the world only with the Bay of Bengal (Karim, 2020; also see Ghosh & Lobo, 2017), into which Bangladesh's rivers flow: should river toxicity connect with the Bay's 'dead-zone' (between Myanmar's Arakan peninsula tip and Chennai), a stupendous ecological disaster would hit the entire Bay of Bengal, and endanger the Indian Ocean.

According to the Department of Inspection for Factories and Establishment, along Dhaka's entire eastern river-flank, from Tongi to Savar, the 217 million cubic meters of wastes recovered in 2016 rose to 350 million cubic meters by 2020 (Satamoto, *op cit*.). Bangladesh's diligent pursuit of a U.S. 50 billion RMG export-target by 2021 ignores reforms (Roy 2019), and even the COVID-19 RMG cut-backs from mid-March 2020 cannot stop heavy metals from RMG wastes (arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, and vanadium), penetrating fish- and farm-based food-chains. Humans remain the final victims.

People: Factories, Fluxes, & Flows

Study after study reaffirms the *employment* factor in Dhaka's rural-urban migration, some directly bearing down upon Dhaka's RMG industries as one significant 'pull' force. Its strength produced the 'megacity' by 2010 for having crossed the 10-million population bar (Sohel, Islam, Muhibbulah, 2017, 1810-11), and is now a 'metacity' (crossing the 20-million mark in 2020). As one of only 7 such urban areas globally (U.N. Habitat, 2006), Dhaka's 1990 population of 6 million doubled to 12 million by 2005, with the next doubling projected by 2025.

Employment tops both 'push' and 'pull' explanatory factors today, like *natural disasters* were before (Ahsan Ullah, 2004, 33; and Afsar, 1999). Bangladesh's rural-urban migration is explained by five factors: search for work, landlessness, loss of income, easy access to informal sector, and joining relatives—that is, 3 directly related to RMG opportunities. Over a thousand Dhaka RMG factories employed just under half-a-million workers (Asif Ishtiaque and Md. Sofi Ullah, 2013, 50): if 5% of migrants were propelled by the historically largest 'push' factor, *natural disasters*, 8% were "influenced by information about obtaining a job in the RMG sector to move to [Dhaka] city," again reinforcing the 1990s 'dividing line' theme.

M. Hermann and D. Savrin estimated 400,000 rural migrants settle in or around Dhaka annually, while Dhaka University's Center for Urban Studies (CUS) found one-third of the city's population lived in slums (CUS, 2006). On the basis of 11 'push' and 9 'pull' factors, Sohel and Company found only 49% of Dhaka's people have access to piped water supply (but piped water also being "unsafe to drink directly").

Fight-back:

Dictated by a clay base and polluted/toxic surface water, harvested rainwater becomes a top contender. Private businesses have begun to sprout. *Coca Cola* and *Plan Bangladesh*, for instance, established rainwater systems (RWS) in 5 schools during 2008, which *U.N. Habitat* expanded to 30 more. Already supplying 15% of Dhaka's needs (Kilkarni, 2011), rooftop rainwater harvesting is being postulated to increase (Quayyum & Rahman, 2008. 10-11): 10% of land area could produce 15 liters per capita daily (lpcd; equals15 billion gallons), while 110% land usage could supply1 lpcd in a city averaging about 2,000 mm rainfall annually; indeed, only 20 lpcd permits drinking, food preparation, and personal hygiene, 50 lpcd more laundry and batching, while 100 lpcd is pure luxury. A possible ocean awaits at our doorstep.

Most attractive was the 2016 ADB Dhaka Water Services Turnaround project, branded "a shining example of South-South (less developed countries working with each other) learning." Dhaka's slums (the primary zones targeted) profited, and it was recommended to other Asian and African cities. With USD 212 million ADB money, the DWASA construction of the Dhaka Water Supply Sector Development Program also charges a fee inside slums (Sharma & Alipalo, 2017, 18).

Standpipes and communal taps were opened in slum areas for the first time, but the prize innovation was the 'district metered area' (DMA) component. Dividing Dhaka into metered areas, with hydraulically isolated regions getting higher priority, each one was fitted with at least 1 reliable water source and at least 1 external connection (for an emergency). Fitting pipes relied on the deployment of a new technique: trenchless technology, to lay 2,430 kms of pipe, connect 109,000 houses, and build 200 chlorinator units to disinfect water (*ibid*., 26-7). The method itself is less invasive of the sub-soil, thus dispensing with open trenches enhancing tunneling. It is also less disruptive of traffic and society, an ideal reform of one 'southern' country for another.

Concluding Thoughts: Pie in the Sky Worth the Try

Education, from primary to tertiary levels, is part and parcel of the changed ball-game: it only thrives once tangible results become more visible to more citizens; and by relocating industries, give rivers (and air) that space to create more breathing room. The difference between dying out of toxicity and building a greener future with the next generation in mind could become Dhaka's story. The world awaits it.

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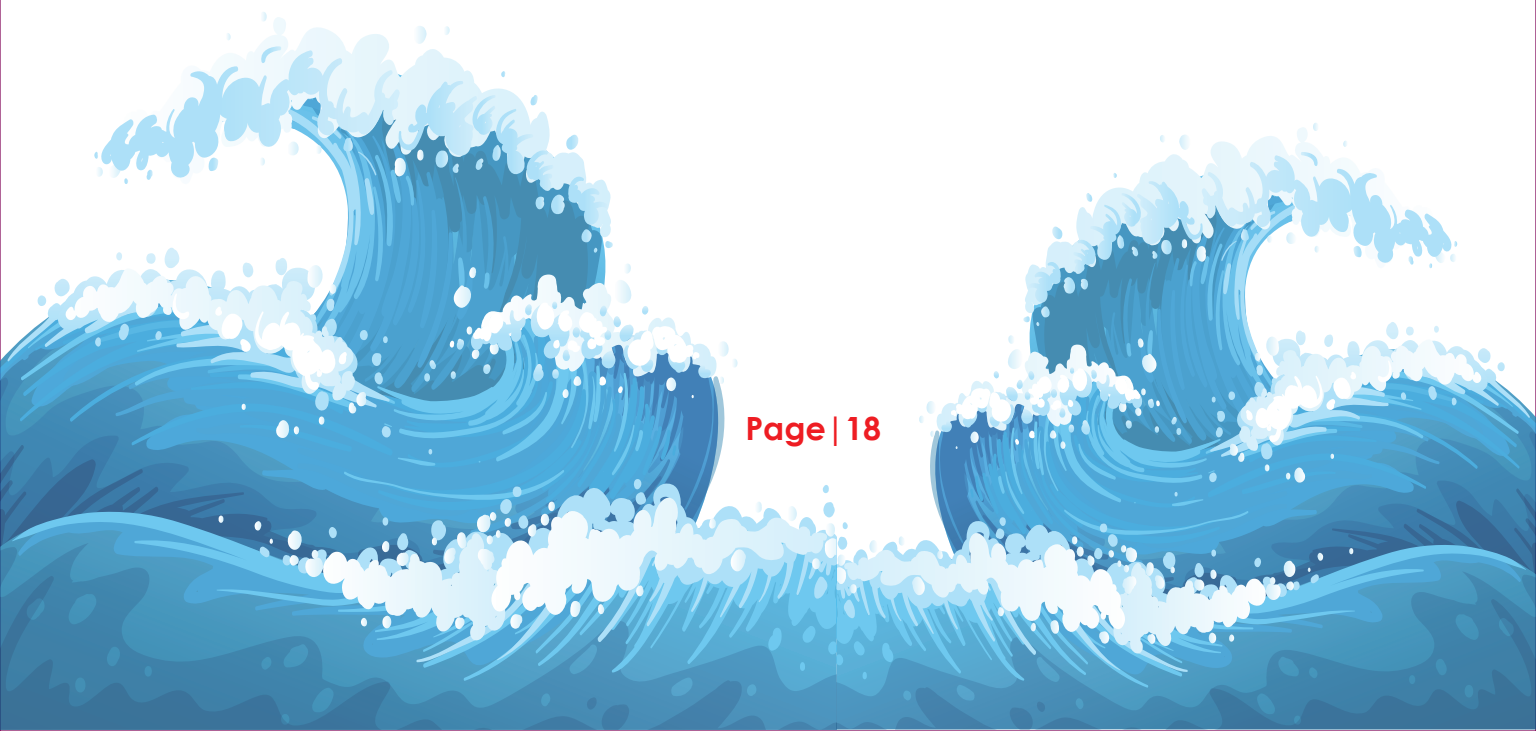
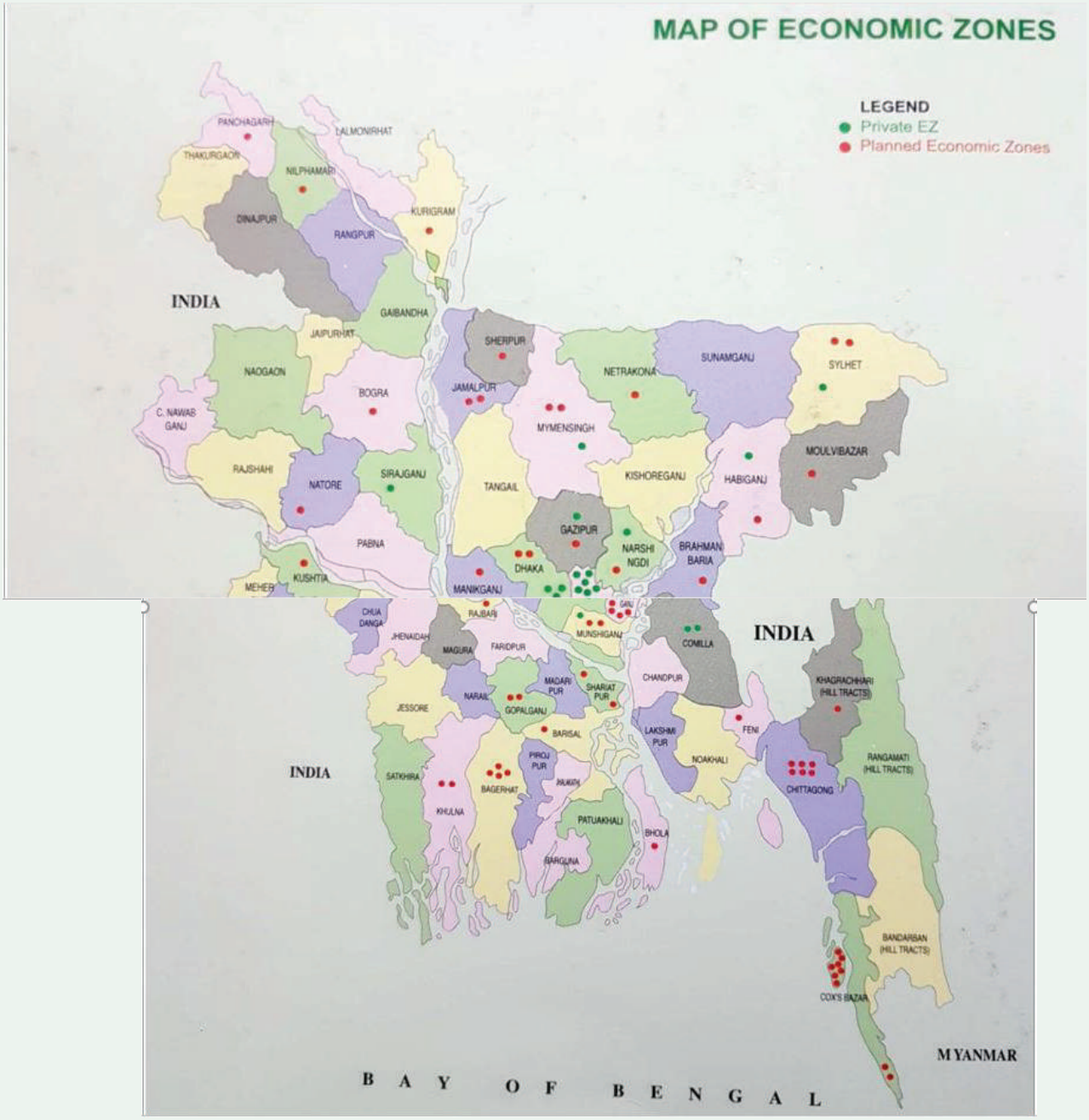
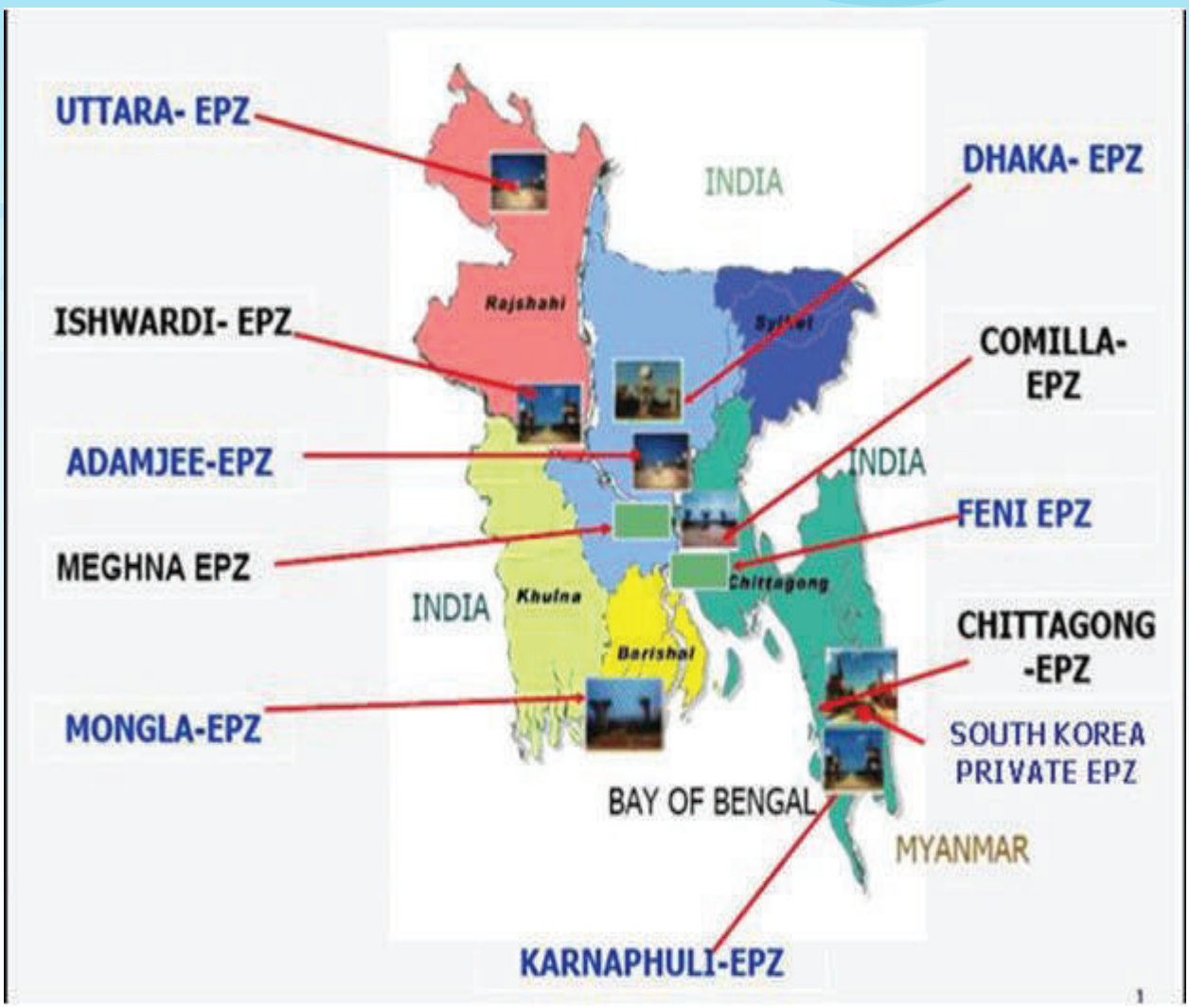


MAP 4: BANGLADESH PLAN OF SPECIAL ECONOMIC ZONES



Source: Mohammad A. Razzaque, Bazlul H. Khondker, & Abu Eusuf, Promoting Inclusive Growth in Bangladesh Through Special Economic Zones (London: Asia Foundation, Department for International Development, Overseas Institute for Development, 2018), 45.

MAP 5: BANGLADESH EXPORT PROCESSING ZONES



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Accessed: 27 September 2020

SLUM TALK: WATER MANAGEMENT, & EQUITABLE & SUSTAINABLE DISTRIBUTION

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Equitable water management is the key to achieving the sustainable development goal of the 'right' to clean water and sustainable water resources management. As a public good, water shall be available, accessible and affordable to everybody in society. Good governance suggests that equal rights over allocation of resources and managing water supplies equitably and sustainably would positively impact an individual's well-being. It is expected that good governance would lead to a 'good' outcome for all, regardless of men and women or rich and poor.

Ensuring equal water distribution in a megacity like Dhaka is challenging due to population growth, unplanned urban expansion, and climate change. It becomes more challenging when the structure of the local communities are hierarchical. People living in informal settings (socially and economically disadvantaged) are generally more deprived of equal well-being and participation. The city consists of 4,000 informal settlements, is home to 3.5 million people, and is an example of a local community facing a shortage of water supply and lack of clean drinking water. The discussion of water management is often narrowly focused on service delivery, ignoring the dynamics of broader context and structure inequalities that shape the outcomes differently. Also, the problem lies in the general assumption that good governance in the water sector will positively affect the users. Such a linear relationship tends to ignore the reality as to how governance works out in practice and whether equal results can be achieved at the individual label. Therefore, it is pertinent to understand how the different mechanisms used locally during water management affect individuals differently.

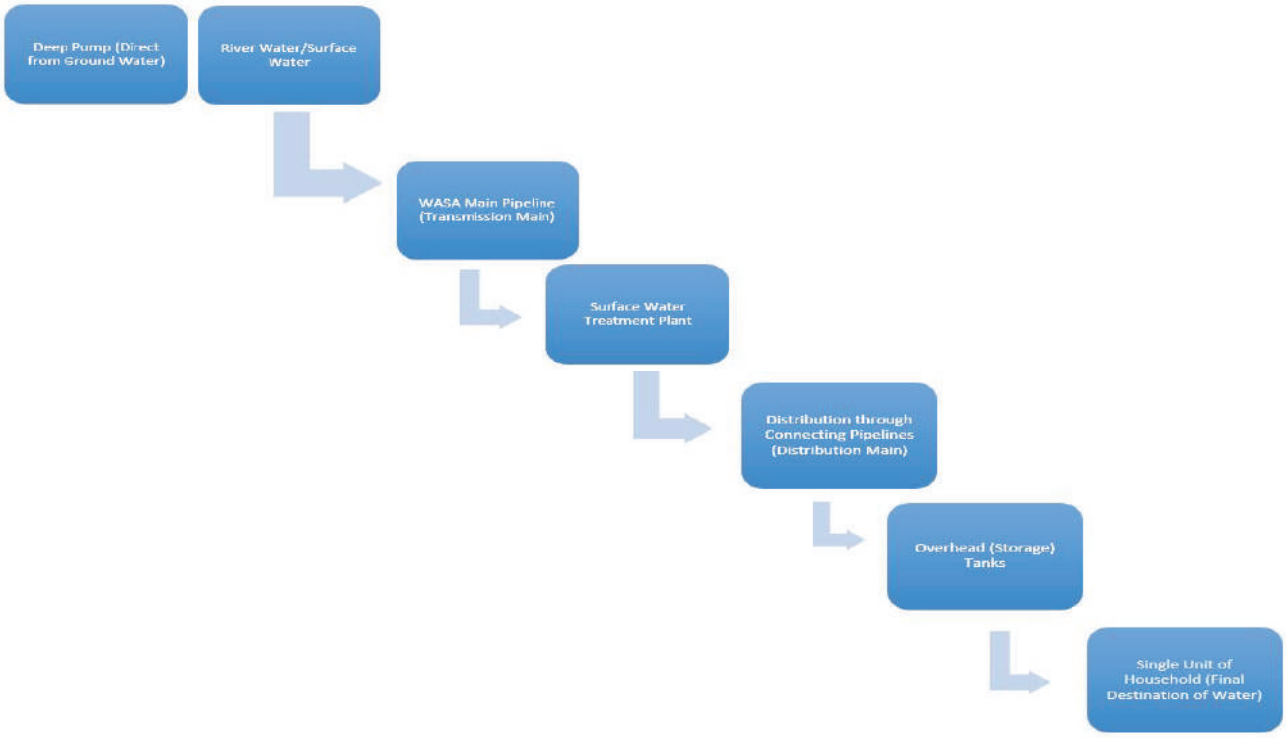
One framework of water governance builds on crucial three key elements (Frank and Cleavers, 2007): resources (non-material and material), mechanisms (formal and informal) and outcomes, can be a helpful tool to understand equitable water governance. As per the framework, every individual is entitled to material and non-material resources that set how individual rights over access to resources are shaped and claimed at the local label (Cleaver and Hamada, 2010). Mechanisms include various arrangements in the process of water governance, and individual use to gain access to resources (Cleaver and Hamada, 2010; Ingmansson, 2018). The variety of arrangements includes formal and informal institutions, such as water user associations, hand pumps, pipes, and so forth. How an individual can use different mechanisms to get access to resources determines different outcomes for individuals. Outcomes cannot only refer to the access to water, including the quality, quantity, and availability of resources. But it also relates to impacts related to people's livelihoods, social relations, and the capacity for collective action. For the analysis, this paper looked at the three slums from two parts of Dhaka city; slums in Munda and Kamlapur from Dhaka South zone 1 and slum in Kafrul from zone 10 in Dhaka North. The objective is to understand the structural inequalities hidden within the overall water management, essential for ensuring the equal outcome.

Dhaka is one of the fastest growing cities, hosting almost 18 million people, This will increase to 22.79 million by 2035, as per the Dhaka Structural Plan 2016-2035. The National Water Policy (NWPo) 1999 of Bangladesh is a milestone achievement towards developing a sustainable public and private water delivery system, in other words, towards good governance of water resources in Bangladesh (Gain and Schwab, 2012). Dhaka Water Supply and Sewerage Authority (DWASA) is responsible for administering water supply, drainage, and sanitation within the city. There are multiple policies, such as National Policy for Safe Water Supply & Sanitation (NPSWSS), 1998 National Policy for Arsenic Mitigation & Implementation Plan, 2004 (NAMIP), National Sanitation Strategy (NSS), 2005 Pro-Poor Strategy for Water and Sanitation Sector (PPSWSS), 2005 National Sector Development Programme (SDP) for Water Supply and Sanitation, 2010, are aimed at ensuring people's access to safe water and sanitation service at an affordable cost. Some of those policies have sought to change traditional service delivery arrangements and increase the sector's capacity. These policies also recognize the essential roles of the NGOs (non-government organizations) and the private sector in service development and delivery. Some significant projects, such as the WASH (water, sanitation and hygiene) project, Municipal Water Supply and Sanitation project funded by different international development partners, contributed to the decentralization of services and encouraged users' participation in planning, development, operation, and maintenance of WSS facilities (GoB, 2014). Some of the existing national and global dominant policies as material resources set the context for water governance arrangements (Ahlers and Zwarteveen, 2009). Policies to promote the commercialization of water services became instrumental for the neo-liberal ideas, as commonly seen around the world (Frank and Cleavers, 2007), which has no difference in the case of Dhaka drinking water management. Such commercialization of policy is the most suitable governing paradigms for water management, are translated into mechanisms in the name of individual tariffs (Ahlers, 2005). Researchers pointed out that such a shift in policies towards treating water as an economic good had prioritized income-generating use of water and neglected important social factors shaping access (Cleaver and Hamada, 2010).

The access to water is mediated through mechanisms as per the framework, include different country-specific and context-specific arrangements. Both formal and informal arrangements are usually taken for organizing water delivery to the individual. As a formal institution, Dhaka Water Supply and Sewerage Authority (DWASA) distributes drinking water within the city.

The existing DWASA water management system follows a linear avenue starting from groundwater and ending at the household level (see Figure 1). The management chain begins from the groundwater deep tube wells and surface water treatment plans. As the final report of the Water Supply Master Plan (2013) for Dhaka city mentions, more than 650 wells contribute to the entire city's water supply, which comprises 78% of the supplied water.

Figure 1: DWSA Water Management System



The next stage of the water supply management scheme includes small distribution pipes up to 300 nm, known as the distribution main, which generally lie along the roadways and carries water from the DTW (depth to water) or the transmission mains to the household. A single unit of family, hence, be the final destination of water. Different households have their mechanisms to collect and store water, such as storing water in a bucket or tub or creating a community hub. Apart from such informal arrangements, WASA introduced ATM booths for water distribution, from where individuals buy water by using cards. In addition, the Government has also run different area-specific programs such as Water Supply Network Improvement Project (DWSNIP) for distributing water to other households.

The outcomes of the water management process are seen as the impact upon individuals' well-being or livelihood. As per the framework, it is mentioned that individuals can use different mechanisms to access water, and lead to different outcomes in several ways of life (Cleaver and Hamada, 2010). These outcomes include other domains ranges from quantity, quality and timing of water supply to how an individual can use the resources to improve their well-being. The existing water management practice is limited to providing service delivery to each household and ignoring how each interface of the framework impacts individuals differently.

The study area, MODS Zone 1 and Zone 10, are left with deteriorating facilities as WASA lacks the means to deliver the water to many households with less infrastructure efficiently. However, the available sources are not sufficient to distribute the ample amount of water required for the people of each zone. While there is no dedicated water treatment plant for MODS Zone-10, this requirement is usually fulfilled by intra-zone transmission mains that conjoin the DTWs and manage water supplies from the source area to the needed site through extension pipes. According to the interviewees, those extension pipes are poorly maintained, have leakages and are even shared by many households. The MODS Zone-1 distribution mains were not only mixed up with the distribution mains of other areas instead, but they were also often installed in a very haphazard manner, transfused with the distribution pipelines of the sewerage channels making the water undrinkable, contaminated and smelly.

Such poorly maintained water infrastructure has impacted the quality of the water. None of the areas would get a whole 24 hours of water supply each day. Thus, they have to save water in temporary storage. Kamlapur (Zone 1) being closer to the railway station, the water crisis is less severe. The people living in the slums near the station would roughly get the supply four times a day. In Mugda slums, the people would get water twice a day, but the water would contain bad smells and dirt. The worst scenario would be found in the case of Kafrul (Zone 1). It has a complex form of urbanization structure compiling both well-off and impoverished communities living on both sides of the same road or in different small streets (golis, in Bengali) of the same locality. Interestingly, one house in the locality would get enough water supply for a day, while there could be a situation when the most adjacent house would not even get the supply for two days straight.

For households being considered 'private spaces', the responsibility to store and boil water lies upon the female family members. Women have to spend considerable time doing household chores as water has to be used restrictively. In Mugda, women were more engaged in small business around their household and thus could have off and on presence at their houses when the water needed to be saved. In the North Kafrul slum, the women primarily serve as domestic workers or caretakers of other [nearby] families. Domestic workers had to wait long at their workplaces for ample water supply when they needed to wash the clothes or dishes or do other tasks involving cleaning. When this domestic worker returned home, she faced the same situation. In both Kamlapur and Mugda, at least the members could trace a definite water supply time, which they would dedicate, for storing it. In Kafrul, the situation was so uncertain that the homeowners would ask the tenants to seek rents in different areas. Some of the homeowners even left the area and lived in places with a lesser crisis.

There are also other mechanisms used that facilitate access to water. To solve the water crisis, DWASA took different initiatives in Zone 1 and 10, such as 'Water ATM Booth', where registration schemes and cards were being used to grant the population uncontaminated water. As the water distribution infrastructure is not developed and water is unreliable, these different tools are essential to ensure water access for the households. Some of the interviewees referred to those ATMs as their sources of pure drinking water. Only a few can afford to buy water for all the necessary household works. Thus the low-income household or women-headed household is the one who has to spend more time accessing water. This means less time for paid labour to earn money, resulting in them being unable to improve their economic situation and well-being.

The discussion on good governance rarely paid attention to the reality and how the service delivery systems are adapted locally. This is partly because water policy and practice are often narrowly focused on service delivery to single households as one unit. Notably, the responsibility of managing water resources at the household levels fall upon only women disproportionately. They also play significant roles in shaping the arrangement of water use and allocation. Yet, the process costs women disproportionately by impacting their well-being. The household dynamics and social norms do not get enough attention as an invisible tool of causing more cost to women's life. The overburdened responsibility, the stressed related to managing scarce resources, more time allocation are often identified as concerns affecting individuals from low economic backgrounds differently. Such hidden cost of the water management process is more visible when we examine the different outcomes of different mechanisms are in practice for accessing the water. The burden of the work is often acute in the informal setting where individuals are involved in informal jobs, and the responsibility of water management especially leaves women less time for their participation in the labour force, paid work, or other economic activities. This understanding of inherent gendered inequalities is essential for achieving equitable outcomes and sustainable water management.

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DHAKA'S TRAFFIC, TRANSPORTATION SYSTEM, & WORKFORCE: JAMS, JAMS, & JAMS

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As a growing mega city without any appropriate urban design, Dhaka's residents typically lose 3-4 hours to traffic congestion each day. Traffic-jams and stress are correlated (*The Conversation*, 2017): society becomes demotivated, stressed and anxious, with typical citizens exposed to Autonomous Nervous System (ANS) impacts. In interviews, school principals correlate traffic-jams and mental distortion, with fading concentration whose consequence ultimately affects the workability of a population. Two questions:

(1) What strategic design could help Dhaka combat traffic-jam?
(2) Can resilient Dhaka infrastructures produce a sound workforce?

Dhaka-based *Bangladesh Association of Child and Adolescent Mental Health* (BACAMH) deals with these issues. Prevention of mental disorders and deficiencies of children and adolescents stand out. Another organization, *Maters Trust*, also works on addressing mental health, but it has only a few components to address the mental stress caused by the system at large. Not many local organizations address the systematic and local environmental stress. According to a World Health Organization (WHO) report on Bangladesh's mental health, there is no specific mental health authority in the country, and mental health services are not organized in terms of catchment/service areas. Only a meager 0.5% of the total health budget is allocated to mental health in Bangladesh and the country does not have strong mental health policy (WHO, 2007).

Need for Resilient Infrastructure: The Empirical Setting

Livability is at stake in Dhaka: traffic-jams caused by messy planning, and oversized population coexist with slum expansions, air pollution and water-logging. In winter, it is typical for Dhaka to experience Air Quality Index (AQI) scores over 200 (good air is with AQI score below 50). By the year 2035, Dhaka will have more than 35 million people, almost double today's. Therefore, Dhaka's messy and uneven urbanization lacks planning and leads to poor livability. As a growing mega city without any appropriate urban design, Dhaka's residents typically lose 3-4 hours to traffic congestion each day. In Bangladesh 1.5% of the country's GDP is lost due to traffic jam (Figures, 2011).

Currently the Greater Dhaka traffic-jams are intense due to the construction work of the Mass Rapid Transit (MRT) and the Bus Rapid Transit (BRT). The previously built unplanned roads and infrastructures are the major sources of congestions that now contribute to massive traffic congestions. Issues of water logging due to poor sewerage systems and open path-holes and improper infrastructures with partial implementation of such infrastructural projects added with illegal road-side shops and illegal parking space, and with no proper sustainable transport system and no traffic rules, traffic jams become a stressful day to day experiences. As such the monsoon season is a nightmare for the Dhaka city dwellers.

The current project of *Rajdhani Unnayan Kortipakhkhya* (RAJUK) which is being implemented in the eastern Dhaka, also seems to face the challenges of greater Dhaka if the urban planners are not concerned about resilient infrastructures and a proper transport system in the area. Since most of Dhaka is built on the *Modhupur Sal* forest tract, the new extension of Dhaka to the east (Purbachal) lies outside and is more vulnerable to flooding. Greater Dhaka has already issues of waterlogging due to poor sewerage systems and improper road infrastructure. Expanding Dhaka eastwards, eventually faces three salient challenges to further growth: flooding, congestion and complications (Bird and et al, 2018).

The World Bank proposed building such a neighborhood to reduce the pressure from the western part of Dhaka, which is densely populated and unevenly built. Though Purbachal is of high significance, it seems to inherit the shortcomings of the old systems: no provisions for feeder roads, violation of construction codes and no proper sewage disposal. The area is prone to flooding, for which the World Bank study suggests three critical interventions: (1) building the eastern embankment along the Balu River to lower the vulnerability to flooding which in turn would increase the available land for development (simulations project 119 square kilometers of East Dhaka will be able to accommodate 6 million people); (2) developing critically important transport infrastructure to generate additional land and enhance its quality to make east Dhaka more accessible; and (3) reducing the cost of doing business in the area as east Dhaka is a potential high-value-added district expected to have better jobs and much higher income population. The World Bank proposed eastern Dhaka to be built largely on green pastures and river-banks, which are in close proximity to the river transit routes and proposed highway corridors (World Bank, 2018). With such a mix of blue and green infrastructure, Purbachal which is the future township of extended Dhaka could be a model town with an innovative living infrastructure.

FIGURE 1: INFRASTRUCTURE-WORKFORCE RELATIONSHIP: MIND & MATTER

Theoretically, the place of mental stress within an urban work-commute network can be best captured by the structural (functional) approach to understand the complex integration of stakeholders at all levels. Figure 1 shows the variable *mental stress* is associated with (i) resilient infrastructure, and (ii) sustainable urban transport system which ultimately affects the mental stress level of workforce.

FINDINGS AND DISCUSSIONS:

A World Bank report in 2017 stated that congestions in Dhaka eats up to 3.2 million working hours a day. The average driving speed has dropped from 21 kilometers an hour to less than 7 kilometers an hour in the last 10 years ("Traffic jam", 2018). A Japan International Cooperation Agency (JAICA) report in 2010 stated that as the urban transportation in Dhaka Metropolitan Area (DMA) mostly relies on road transport, where all modes of transportation coexist (for example: car, bus, auto-rickshaw, rickshaw, etc.), serious traffic-jams and health hazards caused by the traffic pollution, including air pollution, can be expected (JAICA, 2010).

Both traffic congestion and air pollution have a negative impact on Gross Domestic Product (GDP) as it imposes a significant cost in terms of both health and productivity.

Traffic jam and its impact on mental health on future workforce:

Surveys and interviews (focused group discussion=FGDs) show interesting mental stress features for future workforces (i.e., Generation Z and the current workforce, the Millennial). Traffic-jams impact human mental state at a cognitive level, which lowers one's response inhibitive ability. At the physical level, this affects blood pressure, altering Autonomic Nervous System (ANS) and changing body temperature. In the long-run, as an individual's immune system's ability to withstand pressure is reduced, the emergent workforce gets demotivated from work and the traffic congestion time lost also demotivates sociability and conversations. This is exactly what is being reported by the Millennial or Generation Y, which already comprises of more than 50% of the global workforce. However, Generation Z, which will enter the workforce by 2025, reveals that they have an attention-span of 8 seconds (Kleinschmit, 2019). It is likely that they are more prone to the impact of traffic-jams at a cognitive level. Interestingly, The FGD results show they are quite comfortable using their mobile phones while stuck in the traffic-jam. Of 150 Generation Z individuals surveyed, 86% (130 respondent) did not report being affected by the traffic-jam as they were busy on their mobile phones, using instant messaging *Apps* or watching movies on *YouTube* or listening to music, be it offline or online. The findings though reveal the generation's characteristics of being digital natives (or *phigitals*), physical with ANS symptoms (Khan,2018). Only 30% complained of headaches, backaches and tiredness and while in the traffic jams and their unwillingness to socialize after returning home. A quarter of the respondents (25%) mentioned they are not comfortable listening to or watching the television after they are stuck in traffic jams for at least 2-3 hours.

Greta Thunberg: " . . . blah, blah, blah . . . ."
Jessica Tartila: " . . . jams, jams, jams . . ."

Generation Y, on the other hand, are highly impacted at cognitive levels as well as at their physical level. About 95 out of a sample size of 120 (79%) of Gen Y lose their concentration and get demotivated to work or converse while they reach their workplace or back home. They are more prone to exhaustion: 50% said they return home tired, not because of their office work load but more so because they have to be travelling long hours sitting in the traffic-jams.

In interviews with school principals, it could be deduced that they find children, most of whom are Generation Alpha (born after 2015), to be very exhausted as the week days come closer to the weekends. Their observation vies for the fact that those children who travel by school-bus remain more exhausted than those who travel by private cars. Thus the school principals correlate traffic-jams and mental distortion, with fading concentration as a consequence.

The consequences of traffic-jams not only impact mental stress, but individuals also get affected by the air pollution caused by the vehicles and the construction of road infrastructure which remains incomplete most of the time. Of 270 respondents, 37% complained of breathing issues and sinusitis and 27% complained of ANS symptoms.

As Dhaka is prone to flooding, water-logging due to poor sewerage systems and stagnant water – people who suffer these realities compromise their mental health. The survey result shows that 67% of the people who do not have their own transport and uses public transports, are frustrated and feel stressed when they are stuck by water-logging; and 62% of the people who

have their own transport, are equally frustrated because their vehicles are stuck during monsoon season and because it hampers their mobility. A picture below reflects the sufferings of the people due to water logging and urban flooding.

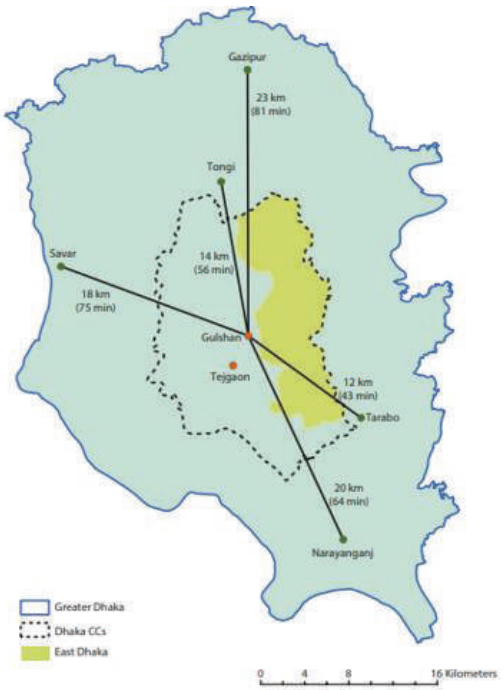
Courtesy: *The Daily Star* (September 2015)

Courtesy: *The Daily Star* (July 13, 2019)

Grater Dhaka Congestions: Reforming and Restructuring

Greater Dhaka comprises of the conurbation of the city's surroundings, which includes Gazipur in the north), Savar (to the West) and Narayanganj (to its south) and Norshingdi (north-east). The World Bank's report, *Toward Greater Dhaka* (2018), propose revitalizing old Dhaka in the South near Narayanganj, retrofitting West Dhaka near Savar and also building satellite towns on the outskirts of Dhaka City Corporations (DCC).

Figure 2: "Toward Greater Dhaka" Map



Source: Toward Greater Dhaka

Land Use and planning of Dhaka: Greater Dhaka needs to launch a restructuring program as a part of resilient infrastructure building in order to reduce its traffic congestions and thereby increasing the livability of its people. The World Bank has proposed retrofitting West Dhaka through its waterfront revitalization as the area is suffering from illegal encroachment, haphazard growth and pollution. The other proliferated idea for West Dhaka revitalization is the regeneration of Hazaribag tannery into Brownfields amidst impractical relocation of the homeowners which might face resistance and years to complete.

It requires the urban planners and policy makers to reform and restructure the urban ongoing projects and also there is a need to understand the importance of completing all the incomplete roads and transport projects on an urgent basis.


Courtesy: *The Daily Star "A Normal Day for Dhaka Dwellers"*

At present Dhaka's Strategic Transport Plan (STP) 2005-2008 serves as the basis of urban transport planning in Dhaka, influencing infrastructure-building until 2030. STP projects include: (1) Bus Rapid Transit (BRT) – red, blue and yellow lines; (2) Metro Rail Transit; and (3) 50 highway projects and the three elevated expressway (Airport to Kutubkhali, Gabtoli to Azimpur, and Ashulia to Airport). All these projects are not yet completed, however their premature implementation brings severe consequences of road congestions and air pollution in the city.

The unplanned infrastructures of the Greater Dhaka accompanied by poor sewerage systems needs attention. Compartmentalizing the water bodies, infilling of natural channels and lowlands for urban infrastructure have not only been reducing the area, but are causing massive water-loggings and flood hazards in various parts of the city (Islam et al, 2012). Accordingly, Dhaka city has lost 36% of its water bodies to earth filling in nine years, considering the Detailed Area Plan (DAP) adopted for the capital in 2010 ("36% of Dhaka's . . .", 2019).

Flood Water Management: Dhaka city was designed with a large number of water bodies including lakes, canals, wetlands and natural depressions-marshes and swamps. Supposed to facilitate the retention of excess storm runoff and the over flow of rivers, many of these water bodies are now filled with structures pollution.

Canals and the drainage connectivity: The canals and drainage connectivity is hampered by the human settlement due to increasing slums, urbanization through land filling and waste dumping. According to Institute of Water Modeling (IWM), there are 50 canals in Dhaka which were to be used for the purpose of natural drainage system, water reservoir and water transportation (Asif Ishtiaque et al , 2014). Most of these canals are now encroached with severe consequences that impact the waterlogging in Dhaka city and hence traffic congestions. For example, the Kalyanpur canal is getting dumped with waste disposal and is a great place for slum extension and 40% of this canal is illegally grabbed. The other one is the Abdullahpur canal which is obstructed at several places by pisciculture and the local influential people are involved in such projects. Policies are urgently needed here to stop future mental stress.

Building parking structures, underpasses and sidewalks: In interviews with city dwellers, illegal parking due to lack of parking structures and narrow roads significantly contribute to traffic congestions. The responses suggest that the narrow roads be widened or underpasses be constructed for the smooth flow of the traffic and all forms of vehicles. There is no provision for sidewalks in Dhaka city,making walking risky for adults but particularly for children.

Purbachal: Future Township- A Case

Dhaka Structure Plan 2016-35 recommends that East Dhaka be used for urbanization – a township known as Purbachal. Though Purbachal, is a low-lying plain prone to flooding, the private developers have taken the lead in its expansion which reflects upon the market vitality in Bangladesh (World Bank, 2018). Present plans suggest this new township is also likely to resemble the messy, congested Dhaka. Two urban design and recommendations could help Purbachal sustainability and a stress-free workforce.

Resilient and water sensitive infrastructures in Purbachal: Since the area is flood prone, it also requires water-sensitive and resilient infrastructure designs for its sustainability. It could use and implement unpaved surfaces which would not only be better for water management but also for underground life (Kabir and Khan, 2013), and fast-track planting trees to reintroduce nature and filter out pollutants to make the air breathable (Gammon, 2015). Plants also help us mitigate the loss of biodiversity and reduce 'urban heat island effect'. Milan's 'Vertical Forest' embodies all aspects of living infrastructure with 15,000 plants. Purbachal could do so too.

Dense and Mixed Use Developments: Sustainable transport also benefits from dense and mixed-use housing. However, the new Dhaka City-Purbachal nexus could, through its numerous mega projects currently being constructed, also inflict potential damage over far wider geographical arenas, thus compounding the densely populated and crumbling communities. These are achievable only through a well-coordinated, centrally-managed initiative to tailor what is being haphazardly built to produce a better mix of fresh air, drinking water, trees and greeneries, swales, water and road connectivity, and the typical metropolitan distribution of residential, commercial, industrial, recreational, and transit arenas every aspect of living infrastructures. Hatirjheel Lake – the largest water body inside Dhaka, is a stellar exception that portrays living infrastructure and proves that outstanding planning and its remarkable execution is possible in Bangladesh.

Sustainable Urban Transport System (SUTS)

Any sustainable urban transport system must include opportunities for recreation and social interaction, and accessibility (Todd Goldman and Roger Gorham, 2006). Since the street is one of the main elements of urban design, a SUTS pattern of street networks makes the city unique (Khan A. , 2018). A street network consists of high street, main street, overpass, skyway, freeway, boulevard, avenue, esplanade, alley and so forth. For a SUTS, these typologies of streets have to be ensured for the smooth and easy access of people to their destinations without any stress. Dhaka, has numerous uneven and path-holed roads, roads and highways under construction for ages, and with almost no legibility. There is no proper place where residents and visitors can both navigate and no proper visual details are used to provide an understanding of routes and destinations. Another SUTS contribution incorporates Semiotics on the roads, with Internet infrastructure also chipping in with navigation. Though *Google Map* is at our disposal, a mobile app with proper Global Positioning System (GPS) such as the Metropolitan Transportation Authority (MTA) in New York City may be launched. However such an *app* needs proper public transport available and in uniformity in time intervals. Dhaka's reality is not likely to support those Internet infrastructures due to unavoidable traffic congestions and unruly vehicles, however, the public transport which are mostly privatized could be streamlined in terms of time intervals and make the bus drivers and the travelers both adapt to the system. If the privatized public transport cannot be streamlined in the beginning, as a lot of advocacy is required, government-owned public transports could do so.

Transportation Planning and the land use: Dhaka could do with new planning paradigms, like smart growth (SG) and new urbanism. "SG is a land use planning paradigm which indicates that traffic problems should be minimized by transit alternatives, effective demand management and providing a balance between land use and transportation planning" (Gulhan and Ceylan, 2016).

Trip generation involves interaction between land use and transportation. Any investment on transportation will affect land use patterns, urban densities and housing prices (Gulhan and Ceylan, 2016). Since conventional planning paradigms primarily build the environment and later tries to address the arising transportation problems, Dhaka's Transport Planning and Urban Design and Planning require a shift to SG strategies.

CONCLUSION

Dhaka's residents typically lose 3-4 hours to traffic congestion each day, making society not a voluntary covenant of a demotivated, stressed and anxious person with major ANS impacts. With a proper infrastructural design and proper planning of the sustainable urban transport system that society can achieve traffic jam-free space ultimately reducing mental anxiety and building a sound workforce. Understanding city designs and planning to build a resilient infrastructure and a sustainable transport system would help ease mental anxiety, and produce a stress-free Generation Z and Alpha society.

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CLIMATE CHANGE & POST-DISASTER MENTAL HEALTH BURDEN IN BANGLADESH

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Climate change vulnerability and adaptive capacity are place- and context-specific. Climate change affects people's mental as well as physical health. Bangladeshis experience the impacts of climate change through increased frequency, intensity and impacts of floods, droughts and cyclones. Climate change not only affects people's health and wellbeing directly, but it also impacts negatively on their work burdens, opportunities and capacities through changes in their livelihoods.

Right after any natural disaster, it is logically to ensure survivors receive the basic requirements to sustain life, such as shelter, food, safe water and sanitation. However, after such a severe emergency, many people plunge into unrecognizable psychological or mental health problems. Indeed, serious mental health consequences of natural disasters in Bangladesh have yet to receive the attention they ought to have. The post-disaster response strategy of Bangladesh has focused on the physical needs of survivors, through the provision of shelter, food and medical care. However, the mental health care of the victims of natural disaster is abysmally ignored.

Many people who experience natural disasters for the first time happen to be resilient. Basic support after an event should be sufficient to prevent mental health outcomes. However, stress, anxiety or fear that lasts for several weeks or impacts an individual's daily activities and quality of life may indicate the necessity for additional mental health resources and support. No one is immune from the stress of drought, severe weather or disasters, or the changes to our environment that who are experiencing. Anyone can experience mental health impacts due to climate change.

The World Health Organization (WHO) estimates that globally more than 350 million people of all ages suffer from depression. Across the world more than 800,000 people take their own lives each year because of this. While there is no way of knowing what proportion of these is influenced by the effects of climate change, the numbers are stark. Yet mental health tends to be low on the lists of priorities of governments and non-governmental organizations.

As a result, WHO says we are facing a global human rights emergency in mental health. The Boxing Day tsunami of 2004 shows what kind of impact environmental disasters can have. Research suggests that 57 per cent of tsunami victims were suffering post-traumatic stress six weeks after the disaster. In 2011 Australian researchers found that climate-related disasters can have a major impact on the mental health of those affected.

People living in Bangladesh who live near the coastal zone, small islands, peri-urban cities are particularly vulnerable. Children and women are among the most vulnerable to the resulting health risks, and will be exposed longer to the health consequences. The health effects are also expected to be more severe for elderly people and people with infirmities or pre-existing medical conditions. Areas with weak health infrastructure in Bangladesh will be the least able to cope without assistance to prepare and respond.

Measuring the health effects from climate change can only be very approximate. Nevertheless, a WHO assessment, taking into account only a subset of the possible health impacts, and assuming continued economic growth and health progress, concluded that climate change is expected to cause approximately 250,000 additional deaths per year between 2030 and 2050; 38,000 due to heat exposure in elderly people, 48 000 due to diarrhea, 60,000 due to malaria, and 95,000 due to childhood under nutrition.

According to the World Economic Forum Report 2018, globally, one in four people was affected by mental health problems (e.g., anxiety, depression, stress, and mental disorders) at some point in their lives and approximately 450 million individuals suffered from these illnesses due to inequalities in educational attainment, income, accommodation, social support services, violence, human-made tragedies and natural disasters, including floods, cyclones and storms.

Weather variations in Bangladesh, caused by climate change, is leading to an increase in the spread of infectious diseases and affecting mental health of people, says a new World Bank Report. It is especially affecting mental health of those living in large cities like Dhaka and Chattogram, adds the report. With further climate change predicted, more physical and mental health issues are likely to emerge. The weather pattern also affects mental health. More people suffer from depression during winter while the level of anxiety disorders increases with temperature and humidity. Furthermore, women are at higher risk than men of depression, while men are more susceptible to anxiety, the report adds. The report further suggests that by strengthening health systems, Bangladesh can deal with outbreaks of infectious and other climate-sensitive diseases.

Direct consequences of severe climate disturbance are well documented. After the Asian Tsunami, the incidence of moderate to severe forms of psychiatric disorders including anxiety, depression, phobic disorders, and adjustment disorders was 30% to 50%. Among residents after Hurricane Katrina, the 30-day incidence of anxiety-mood disorders and PTSD was 49.1% and 26.4%, respectively. The incidence of PTSD and self-harm increased over time, and even 2 years after the disaster, high psychiatric morbidity was evident in a representative sample of 815 pre-hurricane residents.

The impact of climate change on mental health is a relatively new field of enquiry, but it should not be underestimated. The connection between climate change and mental health may not always be clear, even to those who are affected. Each individual will react to climate change differently based on a variety of factors such as living place, occupation and previous significant interactions with the environment. People in Bangladesh, who have survived droughts, floods, tropical storms and similar extreme weather events often lose their homes and their families. As a result, they can experience post-traumatic stress disorder, severe depression and other mental health problems. In Bangladesh, where the impacts of climate change are at their most severe, there is less access to mental health services, so symptoms go untreated and unchecked. An effective post-disaster service for the vulnerable populations on a sustainable basis is a fundamental right of the people.

CLIMATE & OCEAN RISK VULNERABILITY INDEX (CORVI), CHATTOGRAM RISK ASSESSMENT

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Independent University, Bangladesh, has been undertaking an international research project named Assessing Risks in The City of Chattogram, Bangladesh, Using the Climate and Ocean Risk Vulnerability Index (CORVI) since 2020. CORVI study produces a coastal city risk profile that analyses climate fragility threats and pinpoints issues where resources both financial and technical – should be directed to build and increase resilience. This landmark research, financed by the Ocean Policy Research Institute and the Sasakawa Peace Foundation, is also regionally noteworthy, because Bangladesh was chosen among the eight South Asian countries as a case study to apply the CORVI approach for analyzing the coastal city risk of climate change and disaster.

One of the greatest concerns facing the globe today is climate calamity. None denies the impact on the existing human civilization of climate-induced disaster as a threat. In underdeveloped countries the disaster has severe negative repercussions, and the poor are most frequently harmed due to their relative ability to adapt and resilience. According to the UN Development Policy (UNDP), 980 natural-hazard disasters alone cost the world economy more than US$210 billion. In particular, the average cost of catastrophe recovery is $29 billion per year, for the world's 77 poorest countries.

Coastal cities in emerging economies and Small Island Developing States are at the forefront of the climate emergency. Rising sea-levels, extreme weather events, and warming temperatures amplify the vulnerability of city residents, even as migration to coastal cities increases. The world population is predicted to grow to 10 billion over the next decade, with almost 40% of the world's people living within 100 kilometers to the coast.[1]

Coastal urbanization can become a vicious cycle in this setting, concentrating people and property in regions vulnerable to growing climate and ocean hazards. Destroying natural defenses, such as mangroves, erodes a city's resilience to coastal floods and adverse storm impacts. These consequences are disproportionately felt by impoverished areas and businesses.

Recognizing the interconnected and cascading nature of physical changes, environmental degradation, and population changes, governments, international organizations, and the business sector are requesting tools to assist them in quantifying challenges to sustainable development. As a result, the Stimson Center developed the innovative CORVI tool to assess a varied range of threats to generate a risk profile for coastal cities. In response to growing climate fragility threats in coastal poor countries, a joint OPRI research project in 2019 with the Stimson Center, a Washington, D.C.-based policy think tank, was initiated. The collaborative initiative intends to conduct a complete assessment of climate and ocean hazards in order to assist coastal towns in Asia and the Pacific in developing resilience.

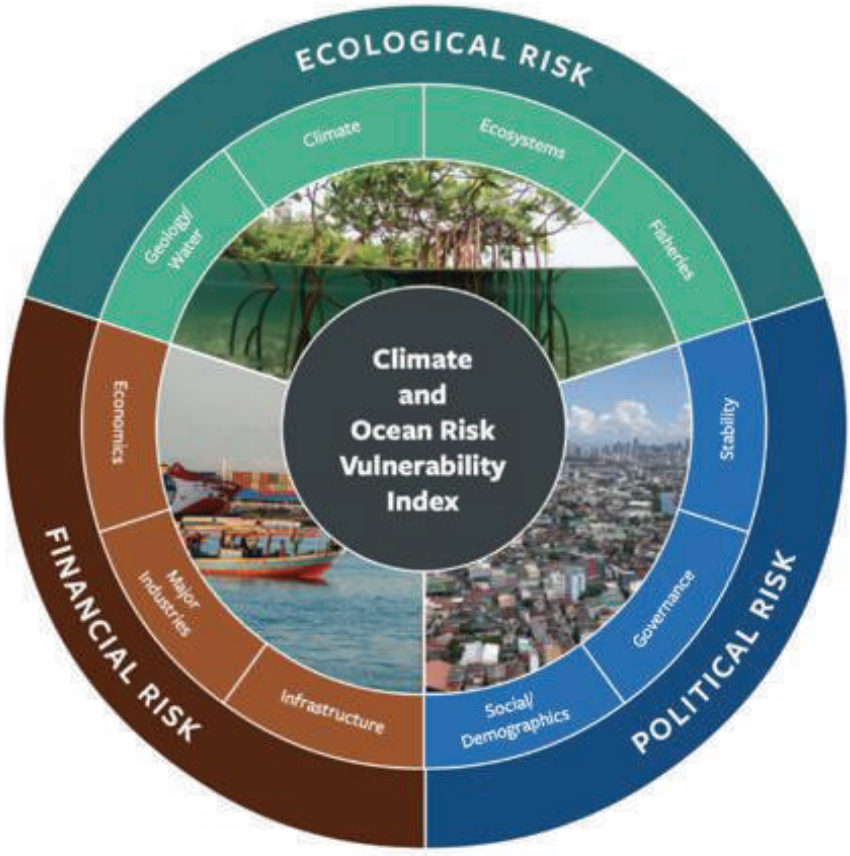
[1]UN, "Factsheet: People and Oceans," The Ocean Conference, United Nations, New York, June 5-9, 2017.

This assessment identifies areas of greatest risk and channels investment to build resilience where it is needed most. By combining empirical and structured expert judgement survey data, it measures ecological, financial, and political risk across 10 categories and close to 100 indicators. The risk is classified into four categories: low, medium, medium to high, and high risk.

Low risk scores mean that either the coastal city has successfully built resilience in the issue area or the indicator is not as relevant for understanding risk in that city. Medium risk scores indicate that while resilience has been built to address the specific risk, future changes could destabilize resilience gains. Medium-High risk scores mean that current measures are insufficient and more attention is required to build resilience against future climate security impacts. High risk scores indicate that the issue area represents a key threat to the coastal city with the potential to undermine the security of its residents.

Bangladesh is widely seen as one of the most vulnerable countries to climate change. According to the recent Global Climate Risk Index (2019), Bangladesh ranked 7th top-climate change and disaster-affected country in the world and 2nd in Asia. The country is defined by the delta, with almost one-third of the country lying less than 5 (five) metres above sea level. Given the ambition for Bangladesh to be a developed country by 2041, addressing the expected impacts of climate change is essential, there is a need for an integrated approach to protect the coastal cities in the Bay of Bengal. To better understand the status of coastal cities in terms of diverse climate and ocean risks at the city level, it is recommended that an assessment of a coastal city in Bangladesh be conducted. For this purpose, Assessing Risks in The City of Chattogram, Bangladesh Using the Climate and Ocean Risk Vulnerability Index (CORVI) is assessed. The assessment is scheduled to be done on the 31st of March 2022.

Figure 1: Climate and Ocean Risk Vulnerability Index



The major expected outputs to apply CORVI methodology would assist the coastal city in planning by:

- **developing and utilization of CORVI index** in the context of a coastal city in Bangladesh, which will further use, in a similar context, in other coastal cities;
- CORVI index giving base data and policy direction to government and city planners for the implementation of **Bangladesh Delta Plan 2100** and devising innovative policy solutions and attracting international funding to build resilience; and
- **assisting public and private investors** by providing a detailed assessment of climate fragility risks designed to improve investment decisions that target actions for effective resilience building in coastal cities.

As part of using CORVI methodology, a validation workshop took place on 30th September 2021 at the Conference Hall of Chattogram City Corporation (CCC). The CORVI team highlighted the key findings of the assessment. According to the CORVI analysis, Chattogram poses a bigger ecological and economic danger. Seven of the 10 indicators in the ecological, economic, and political risk domains have medium to high-risk scores. In his lecture, Mr. Islam, the CORVI research lead, stressed that CORVI's conclusions being equally significant for policymakers and private investors because Chattogram is critical to the country's economic stability, as well as to the South Asian countries that rely on revenue from the Bay of Bengal. The City Corporation Mayor has stated that it is highly crucial to take actions in sustaining the environment and combating climate change in Chattogram, as the city plays a very vital role in the economic growth of Bangladesh. The workshop was attended by representatives from government bodies, academicians, researchers, development authorities, activists, NGOs, and journalists.

Image 1 Validation Workshop, 30th September 2021; in this picture from right side Dr. Emadul Islam; Amb Retd Tariq A karim, Dr Niaz Ahmed Khan and the Mr. Rezaul Karim Chowdhury, Mayor, Chattogram City Corporation (CCC)

CLIMATE FINANCE AT UNFCCC COP26: BANGLADESH'S EXPECTATIONS

Prof. Mizan R Khan, Ph.D

Deputy Director, International Centre for Climate Change & Development (ICCCAD);
Program Director, LDC Universities' Consortium on Climate Change (LUCCC);
and Lead Negotiator of Climate Finance since 2001

We have perhaps come across the Working Group-1 findings of the Assessment Report 6 of the Intergovernmental Panel on Climate Change (IPCC), in which I have earlier served as a lead author. The Report came up with mortal warnings against the impending threats from increasing impacts of extreme climate events, which have become the `new normal.' The UN Secretary General has aptly termed the findings of the Report as `Code Red for Humanity' Actually, this latest IPCC AR6 came up with the highest confidence ever that climate change in recent decades is unequivocally human-induced, leaving no room for any speculation. Obviously, the agenda of Loss and Damage, which the developed countries tend to subsume under adaptation, has got a boost with the publication of this assessment. In this climate emergency, the poor and marginal communities and low-income countries are hit first and hardest. They barely have any adaptive capacity, thus pushing millions further into poverty. Covid-19 assaults on economies and livelihoods in these countries have added fuel to the fire. Under this disquieting scenario, as a lead negotiator on climate finance with the Bangladesh delegation to the UNFCCC (United Nations Framework Convention on Climate Change) process since 2001, let me flag few issues that the Conference of the Parties 26 (COP26) is expected to deliberate and deliver for the most vulnerable countries like Bangladesh:

1. The issue of climate finance stands at the core of the whole UNFCCC negotiation process for the last two decades. However, this appears to be the second most intractable issue, after mitigation, in the UNFCCC agenda. There are lots of controversies, particularly with mobilization of the pledged $100 billion a year by 2020 by developed countries since Copenhagen in 2009, as well as with adaptation financing in particular. The availability of climate finance against the estimated needs by various agencies varies from $100 billion to about $400 billion a year. Against this, current delivery of net climate is finance stands at around $19-22 billion, as estimated by OXFAM (2020), which published its shadow report against the OECD (Organization for Economic Cooperation and Development) claim (2020) of delivering $78.9 billion in 2018. The latter is inflated by double/triple counting as well as by presenting loans as climate finance and not its grant equivalence.

2. This is where comes the urgent need of defining what kinds of money can be regarded as climate finance. There have been several initiatives to agree on this issue, including attempts by the Subsidiary Body of the Scientific and Technological Advice (SBSTA), the technical arm of the UNFCCC. But there has been constant opposition by many developed countries, as the grey areas allow for subjective interpretations by powers that be. So, COP26 is expected to come out with an agreed set of criteria to define climate finance.

3. Though there is some increase in adaptation finance to the LDCs (less developed countries) in recent years, it is less encouraging when compared to total volume of climate finance in 2016-18: financing for LDCs represented only 14. We believe that this share is extremely low and insufficient to meet the needs and priorities of the LDCs, considering the special vulnerabilities and their estimated adaptation needs. According to the UNEP (United Nations Environment Program, 1972) adaptation finance gap report (2016), looking forward to 2030, adaptation costs are likely to be in the range of US$140-300 billion per annum. Development partners and global agencies have pleaded for a 50:50 allocation between adaptation and mitigation, but it is not complied with.

4. Foreign and domestic investment play a paramount role in promoting the economic 4. There is a significant trend of increasing the share of climate finance provided to LDCs in the form of loans. From 2016 to 2018, 66% of climate finance provided to LDCs were loans (OECD, 2020). These were granted not only for mitigation but also for adaptation actions which, to a large degree, supports activities that are not revenue generating. Because of its nature, adaptation relies heavily on grants. Yet grants only represented 33% of public climate finance for the LDCs during the period 2016-2018. It is important to emphasize that the use of loans worsens the level of indebtedness to cope with a climate crisis that we, as LDCs (less developed countries), have contributed the least to cause. Further, due to COVID-19 Pandemic, the debt burden of lower-income countries is likely to go up given the vast investments needed for recovery. So, over years, this will surely create a new `climate debt trap', over and above the big debt trap that many countries are already in.

5. We believe that international public finance mobilized from public exchequers of developed country parties will never suffice for the growing needs of support in developing countries, so we support for some auto-generation mechanisms, such as a levy on air and maritime transports, on which there is near consensus globally. Even with a small levy imposed on such travels, a sizeable fund can be created independent of the public treasury support. This can contribute to climate actions, particularly adaptations, preferably in the particularly vulnerable countries (PVCs), which number around 100 UNFCCC parties. However, citizens from the PVCs can be allowed for a grace period for such levies.

6. There is now an increasing trend of putting focus on private sector for mobilizing adaptation finance through public sector leveraging. But that is not succeeding yet. So far, only about 6% of leveraged finance has moved to the LDCs, and even those went to energy, banking and financial sectors in select LDCs. As adaptation largely is of public goods' nature and does not generate instant revenue, private sector shows not much interest. As private financing is uncertain totally, and adaptation to climate change is based on anticipatory planning, private financing does not in most cases fit the bill for adaptation in the LDCs.

7. The role of the Standing Committee on Finance, established in 2010 under the UNFCCC, with a number of tasks including mobilization of climate finance, could not be realized as yet. Obviously, our expectation is that COP26 will adopt a decision inviting the SCF (Standing Committee on Finance) to focus on this task, so that more than hundred billion dollars can be mobilized a year by 2024, only to begin with a new and enhanced scale, keeping $100 billion as the floor, which was agreed under the Paris Agreement.

8. It has been observed that a significant part of project/programme money dedicated to developing countries, including the LDCs, is shared among different intermediary layers before it reaches the target groups. This compromises the effectiveness – both the quality and quantity - of pledged climate finance. We may recall the LDC Vision of delivering 70% of climate finance down to the local level by 2030. Bangladesh now leads the track of locally-led adaptation (LLA), and we urge that more support reaches the local level, where actual adaptation actions happen. We also support scaling the Expedited Direct Access initiated first by the Adaption Fund and then by the Green Climate Fund, which includes the provision of grants to sub-national/local actors, so that they can initiate projects and manage activities on their own.

9. Further, the perennial problem of access to climate finance continues to persist. Despite repeated pledges to expedite access to finance by agencies including the GCF, things are not improving. As adaptation needs are urgent in the LDCs, the period of a project approval still takes two to three years. We need to shorten this time for accessing climate finance. For this, we will propose a two-pronged approach: one the one hand, the funding agencies need to shorten the time for their review process of proposals, while capacity building needs to be strengthened in the LDCs for project development and fiduciary management.

10. Finally, we observe in recent years that increasing share of ODA (Official Development Assistance) is now diverted even in the LDCs to mitigation and adaptation activities, but the mission and nature of ODA is totally different than that of climate finance. The latter has been agreed under the climate regime to be new and additional, adequate and predictable. Developed countries have agreed to these obligatory provisions under the UNFCCC and the Paris Agreement. But there is a disquieting trend – while climate finance goes up a little in absolute terms, overall global ODA has stagnated in recent years, with a trend of its going down. This is a double loss for the low-income countries which desperately need enhanced support of global public finance to have their noses above water under the triple distresses of climate crises, COVID-19 and debt burden.

NEXT FIFTY YEARS OF BANGLADESH

Professor Saleemul Huq
Director, International Centre for Climate Change and Development (ICCCAD)

As Bangladesh celebrates its first fifty years as an independent country, there is indeed much to celebrate, while also much that remains to be done in the next fifty years.

I will share my personal reflection of what were some of the key factors in making it successful in the last fifty years and what are the new challenges and investments needed to make the next fifty years even more successful.

The key factors in our past successes have started with the foundation laid by the Father of the Nation Bangabandhu Sheikh Mujibur Rahman in providing a democratic constitutional governance system which , despite occasional lapses, has largely remained intact.

Sound subsequent economic policies and investing in the young girls and boys through education have paid dividends in enabling a successful readymade garments sector as well as other commercial and industrial sectors.

Based on this excellent foundation the country is now poised for taking off in a radically new direction of becoming a global leader in the global knowledge based economy which will enable the next generation of girls and boys to engage in the global knowledge economy without leaving the country. This is already happening to some extent and has the potential to be taken to a much higher level in future.

Another challenge, which is also an opportunity, is the global climate change issue which is already affecting Bangladesh but is going to affect every country,both rich and poor, in coming decades. Bangladesh has the opportunity to become a global leader in adaptation to human induced climate change and that knowledge can become another major export for the next generation of our young girls and boys.

These ideas of leapfrogging Bangladesh from the current position to becoming a leader in the knowledge based global economy, requires us to invest in education and capacity building of our young girls and boys, and universities have an extremely important role to play in making this happen.

I would argue that Bangladesh already has the physical infrastructure in over a hundred universities around the country in both public as well as private sector. The quality of these Universities, in conventional terms ranges from very good to very poor. But in respect of what is needed for Bangladesh to make the leapfrogging into the global knowledge economy that I have envisaged above, all of the universities are not at all suited to delivering what is needed.

This is because the education system of the country is based on rote learning for passing exams and for enabling graduates to get white collar jobs which is totally inimicable to make the transition to knowledge based economy where the future lies.

As Bangladesh celebrates its first fifty years as an independent country, there is indeed mucHence we now need to try, as quickly as possible, to change the way we teach and capacitate our young girls and boys to excite their thirst for knowledge and spirit of entrepreneurship and produce the future employers and not just employees. This is absolutely possible but not if we just continue with business as usual.

We need to make a very quick and steep paradigm shift from the current quantity based outcomes of higher education to a much more quality based outcome by changing the ways we teach in order to enable our girls and boys of today to flower into global leaders of the knowledge based economy of the future.

It is entirely possible if we start quickly and invest well.

REFLECTIONS FROM U.N. REFERENDUM MISSION IN WESTERN SAHARA (MINURSO): A 'COLD PEACE'?

Dr. Lt Colonel Kawser Ahmed (Retd)
Executive Director, Conflict And Resilience Research Institute (CRRIC),Manitoba, Canada.

Introduction

I reported to the forces headquarters (FHQ) of MINURSO, in Layyoune, arguably the capital of Western Sahara, in the late afternoon of January 2000. The airport reception area looked neat. However, the prominent presence of uniformed personnel reminded me that this part of the world was under occupation, and my duty was to keep the peace between conflict parties – in this case, the Royal Moroccan Army (RMA) and the Polisario Front (FPOL). After the onboarding process at the FHQ, I was assigned to the remotest camp near the Algerian border called Bir Lahlou (infamously known to the U.N. peacekeepers as Bad Boys House). On 10 January 2000, I officially discovered myself in a peacekeeping role amid scattered camels and an impending sandstorm. The Bangladesh Army usually provides 3-4 U.N. military observers for the mission each year.

The currently known Western Sahara had two parts (Saguia el-Hamra and Rio de Oro), which Spain occupied. In 1957, Morocco claimed it. Mauritania also claimed the territory in 1963 due to its vast phosphate mines and lucrative aquatic resources on the Atlantic coast. In the early 1970s, the Spanish Sahara's indigenous peoples (i.e., the Sahrawis) resisted Moroccan claims. They launched rebel operations under the *Popular Front for the Liberation of Saguia el-Hamra and Ro de Oro (FPOL)*. The Moroccan king came up with a novel idea and marched nearly 200,000 volunteers and occupied the better half of the territory – this is historically known as the Green March. According to the U.N. Security Council resolution 690 of 29 April 1991, MINURSO was deployed following settlement proposals accepted on 30 August 1988 by Morocco and the FPOL. The plan provides for a transitional period for the preparation of a referendum. The Sahrawis would choose between independence and integration with Morocco – the single most crucial mandate that the mission set out to achieve. As of writing this piece, the referendum has never been organized.

'Cold Peace' vs. 'Hot Negotiation'

As a U.N. military observer, I participated in the mission and patiently observed the conflict for over 20 years. In the following paragraphs, I attempt to explain why the mission perpetuates what I term 'cold peace' that greatly disfavours the indigenous Sahrawis' right to self determination.

First, a close look at the listed mandates of the mission reveals two distinct categories: a) primary mandates (total two) – to "organise and ensure a free and fair referendum and proclaim the results" supporting which identification and registration of qualified voters are necessary; and b) secondary mandates (total seven) that can be broadly classified as confidence-building and humanitarian assistance activities. Thus, after thirty years of MINURSO's inception, it begs the question, even after failing to achieve its primary mandate (i.e., to hold a referendum) why the mission still exists?

Consequently, the U.N. still considers the mission useful even if it has spectacularly failed to deliver anything but apparent 'peaceful separation of conflict parties' on the ground.

Second, Western Sahara conflict observers argue that the mission's presence can at least maintain peace between two hostile parties, as if, once the mission withdraws, the place will turn into a conflict zone. Like me, those who have served in FPOL controlled territories might suggest otherwise, and an analysis of hundreds of SITREPs and mission reports might also substantiate the fact that MINURSO's withdrawal from the area would not make any difference in RMA's continuing occupation in the area.

Nearly 1,800 km long 'Berm' (sand wall) that divides occupied area into two, is manned by RMA with sophisticated weapon system and not by the FPOL rebels. Pundits justifying the U.N.'s involvement in the area conveniently ignore that FPOL is essentially a rag-tag group of fighters and is minimally supported by Algeria. Although they have some weapons, they stand nowhere compared to the well-trained and equipped RMA. The military balance of power between the RMA and FPOL is hugely asymmetrical. It appears that the U.N. does not take into consideration such a fact.

Third, Morocco has already occupied the best part of Western Sahara that houses phosphate mines, a beautiful Atlantic coastline with rich fishing, and, above all, the touristic sites where the Paris-Dakar rally takes place each year. Consequently, the mission's presence emboldens Morocco to maintain the status quo in the area, as any ceasefire violation goes against the FPOL. This is not to suggest that FPOL must relaunch its military operation to break the status-quo; the presence of the U.N. in Moroccan-occupied territory is how the status-quo has never been broken in the past 30 years.

Fourth, endless high-profile political dialogues in France, Washington D.C., and elsewhere have not produced any tangible conflict resolution mechanism. In the meantime, Morocco has achieved its 'strategic demographic engineering project' in the occupied area by settling hundreds of Moroccans. Now, many Sahrawis are also stranded in the occupied zone. On the other hand, thousands are languishing in the refugee camps of Tindouf in Algeria, while some are wandering in the desert. With no end in sight of the promised referendum, the 'best loser' is the indigenous Sahrawis as their livelihood dwindles, and they become disillusioned about self-determination. It again begs the question; does it take 30 years for the U.N. to consider the ground reality and recalibrate its mandates?

Finally, Morocco has powerful allies in the geopolitical arena, such as France and the United States. During the 'war on terror' period, both the Sahara and Morocco have become geographically essential spaces for the U.S.'s endless and aimless fight against terrorism.

The mission has inherited several U.S. statesmen as special representatives of the secretary-general. They added their names in the long list of failed diplomats to bring any meaningful revision to the mission mandate due to overwhelming pressure from their respective countries. In their defense, many argued that the mission had maintained peace, although not in an optimal condition, yet a 'peace' nonetheless. And this is precisely what Morocco gains from – peace at the cost of the right to self-determination of Sahrawis.

Conclusion

MINURSO could not achieve its primary mandate in the past 30 years. As a result, the dream of self-determination, which is a fundamental human right of Sahrawis, has been obstructed to a great extent due to the mission's existence. Naturally, now one should ask the vital question: is it worth running a mission for over 30 years, given its yearly expenditure of around $52,350,800 (projected budget of 2018/19)? Even if the material cost is understandable, the human cost of the 'cold peace' is immeasurable.

Note: the author was an UN military observer from Bangladesh Army from 7 January 2000 to 15 February 2001.

BANGLADESH AND THE UNITED NATIONS PEACEKEEPING MISSIONS

Major General M Ashab Uddin,ndc,psc,M Phil (Retd)
Former Ambassador;
Adjunct Faculty, Independent University, Bangladesh (IUB)

U.N. peacekeeping helps countries navigate the difficult path from conflict to peace. It has unique strength, including legitimacy, burden sharing, and abilities to deploy troops and police from around the world, integrating them with civilian peacekeepers to address a range of mandates set by the United Nations Security Council and General Assembly. The vision of modern peacekeeping is no longer limited to peacemaking and peace-building, rather to the assurance of human security in both pre- and post-conflict arenas and to the settlement of peace agreements. The end of intra-state conflicts and the emergence of modern nature of warfare have generated multidimensional responsibilities of peacekeeping beyond traditional activities. In this era of the fourth generations of UN peacekeeping, strengthening state capacity and removing state fragility could be one of the major outlines for UN peacekeeping operations.

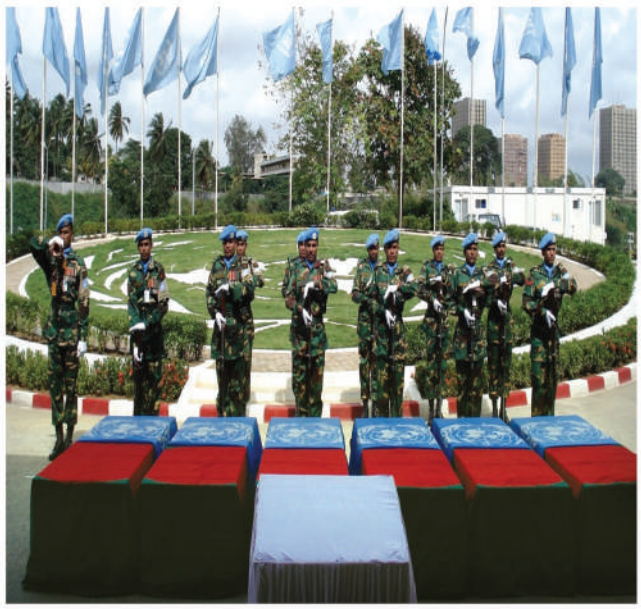
One of the major sources of national motivation of Bangladesh for Global Peace is the glorious Liberation War. In 1971, the country experienced genocide, persecution, suffering, displacement, torture and horror of humanitarian crisis. The vow for establishing peace and security emanates from the principles enshrined in the Constitution of Bangladesh. The Preamble to the Constitution reads "We may prosper in freedom and may make our full contribution towards international peace and co-operation in keeping with the progressive aspirations of mankind". Besides, the national intent is clearly pronounced through the foreign policy of Bangladesh. One of the four basic principles of the foreign policy is "**Friendship to all, malice towards none**". It also formulates "World Peace" as one of the basic principles of her foreign policy. There is varied significance of these principles, such as Bangladesh's beliefs in '**culture of cooperation**' over '**culture of conflict**', peaceful settlement of disputes and peaceful changes in international arena.

Bangladesh started the peacekeeping journey in the year 1988 with contribution in Iran-Iraq under United Nations Iraq-Iran Military Observe Group (UNIIMOG). Since then, the contributions of Bangladeshi Peacekeepers continued to grow remarkably. Out of total **71** peace missions since 1948, Bangladesh has successfully participated in **55** missions. So far, **1,75,757** peacekeepers from Bangladesh Armed Forces and Police have participated in UN missions in **40** different countries. Currently Bangladesh is among the top troops contributor counties, deploying **5,312** peacekeepers in the United Nations, mostly in Africa. Out of **23** current UN sponsored mission, Bangladeshi peacekeepers are currently deployed in **08** peacekeeping missions in 08 different countries.Our Father of the Nation **Bangabandhu Sheikh Mujibur Rahman** expressed his great concern on global peace. He said "**I want to reiterate our full confidence on the human being winning impossible and overcoming difficulties**". As such our country is also committed to restore world peace. To attain that, our peacekeepers are conducting some supporting activities in the form of CIMIC (Civil-Military Cooperation), include:

- medical campaign, health education program and cattle treatment
- distribution of sports items and writing materials
- training on computer, engineering tools (Mason / Carpenter / Welder)
- campaign on public awareness
- agriculture and farming

In strengths, challenges and opportunities Bangladesh possess many strengths suitable for peacekeeping endeavors. **First**, as mentioned, Bangladesh has constitutional guidance and a well-trained armed force protecting civilians. The country gets its inspiration from its constitution. **Second**, there is a domestic consensus to commit assets towards global peace. Unlike many issues that become politicized and divisive, there is an understanding among the different political parties that the state should contribute to UN peacekeeping missions. Neither the constitutional obligation nor national policy for global peace have ever been contested. Committing assets for global needs under the UN is one of the only consistent parts of its foreign policy without any domestic backlash.

There are many challenges for the Bangladesh armed forces when it comes to peacekeeping missions. **First**, there is the difficulty of upgrading its armed forces' posture, given that the budget for peacekeeping missions is limited. Bangladesh will need to provide more resources and military equipment if it wants to protect its troops. **Second**, the issue of a rising number of casualties is always a concern, for instance, eight Bangladeshi peacekeepers were killed by a roadside bomb in central Mali in two different incidents 2018 and 2019. Accepting body-bags back home is always difficult and challenging. **Third** is the existence of parallel authority. Peacekeepers need to co-exist alongside national or coalition forces whose mission could be different from the UN's mission. **Fourth**, there is the jurisdictional issue, in which one country may not want to cross over into the border of another country. **Fifth** is the UN's budget issue. Peace and security without money is unsustainable, and in order to face the increasing challenges posed by a complex security environment, Bangladesh has taken some timely measures, such as institutional capacity building by establishing the Bangladesh Institute of Peace Support Operations Training (BIPSOT) in 2002.



Although Bangladesh is a leading troop contributing country in UN Peacekeeping mission, it may face challenges in future to hold this position. Likely challenges may be as follows:

- competitive environment
- asymmetric threat in the UNPKO
- own safety
- adverse terrain and weather
- huge wear and tear of contingent owned equipment (COE)
- language barriers

Performance of the Bangladeshi peacekeepers has been well appreciated in from all corners. Bangladeshi peacekeepers are known for their pro-active operational measures, deep sense of commitment and excellent professionalism. They have also earned great reputation for having no caveats and their adherence to UN chain of command. The United Nations is encouraging to deploy more female peacekeepers and Bangladesh currently deployed 17.5% female observer's/staff officers and 2% female contingent members. Few significant achievement of Bangladeshi Peacekeepers include:

- Bangla being constitutionally recognized as second state language of Sierra Leone
- Many places in Liberia, Ivory Coast, Sudan, South Sudan, and so forth, named as Bangladesh by host political leadership
- Few roads constructed by BD Peacekeepers are named as "Bangladesh Road" by the host Government
- Female Engagement Team of Bangladeshi Peacekeepers in South Sudan and Mali received Force Commanders Commendation

Despite of the multidimensional challenges, Bangladeshi peacekeepers could earn good names for the country, by successful accomplishment of the Mission Mandated task. In almost all the mission we could earn the hearts and minds of the locals. The reasons behind our success in UN Peacekeeping Operations are:

- selection of qualified personnel as peacekeepers
- follow strict discipline
- neutrality during UNPKO
- respect to cultural diversity
- positive attitude towards UN mandate
- humane attitude with the locals
- professionalism in performing UNPKO
- commitment to establish global peace

Bangladesh is keen to expanding its partnership with the UN and other partners to strengthen UN Peacekeeping operations and contribute its part to maintain global peace and security. The country is proud of the service and sacrifices of the peacekeepers in the past and remains committed to respond to UN's call for participating in future Peacekeeping missions.

Major General (Retd) M. Ashab Uddin, ndc, psc, Mphill was a General Officer Commanding (GOC) in Bangladesh Army (2007-2012). He is also a former Ambassador to state of Kuwait and Republic of Yemen. Presently he is an Adjunct Faculty in the Independence University, Bangladesh (IUB)

US-BANGLADESH RELATIONS: PAST, PRESENT AND FUTURE

Farooq Sobhan
Former Ambassador
Distinguished Fellow, Bangladesh Enterprise Institute

Introduction

US-Bangladesh relations during the past five decades have experienced many ups and downs. In the early years, the Nixon administration's support for Pakistan during Bangladesh's Liberation war in 1971 cast a shadow over that relationship. The feeling of animosity towards the United States was further accentuated by the then Secretary of State of Henry Kissinger's oft quoted reference to Bangladesh as a 'basket case'.[1]

However, it should be recalled that the US Congress, the US media and public opinion in general in the United States supported Bangladesh and its Liberation War and were extremely critical of Pakistan and the army action in Bangladesh. Three Senators, Ted Kennedy, Frank Church and William Saxbe, denounced the Nixon White House for its "systematic oppression" and played a leading role in mobilizing support for Bangladesh.[2]

The United States recognized Bangladesh on April 4, 1972 and established diplomatic relations on April 8,1972. On May 18, 1972 the US Consulate General in Dhaka was redesignated as the US embassy. The US initially provided 300 million dollars as humanitarian assistance. Given Bangladesh's close relations with the Soviet Union and India, relations with the US during the period 1972-1974 can best be described as bumpy. There was some improvement following the meeting between Bangabandhu Sheikh Mujibur Rahman and President Gerald Ford in Washington on October 1, 1974.[3] This meeting was followed by the visit of Dr. Henry Kissinger later the same month to Dhaka.

The period from the assassination of Sheikh Mujib in August 1975[4] until the visit of President Bill Clinton to Dhaka in March 2000[5] was a period when Bangladesh, for the most part, was not on the US radar screen. Perhaps the most noteworthy event during this period was the Microcredit Summit held in Washington in February, 1997[6], which was co-chaired by Prime Minister, Sheikh Hasina and First Lady Hillary Clinton. During the visit, Sheikh Hasina met with the Clintons at the White House and this meeting paved the way for Bill Clinton's visit to Dhaka in March 2000.

[1] Saleemul Huq & James Totton, Basket Case No More? Bangladesh's Successes Portend Resilience in Face of Change, New Security Beat,February 17, 2014. www.newsecuritybeat.org/2014/02/ basket-case-more-bangladeshs-development-successes-portend-resilience-face-change

[2] Gary J Bass, The Blood Telegram, Random House Publishers India, 2013.

[3] Foreign Relations of the United States, 1969–1976, Volume E–8, Documents on South Asia, 1973–1976, US Department of State. https://history.state.gov/historicaldocuments/frus1969-76ve08/d37

[4] Lawrence Lifschultz, A long road in search of the truth - August 15, 1975, Dhaka Tribune, August 14th, 2018.

[5] President Clinton arrives in Bangladesh for historic visit, March 20, 2000. https://edition.cnn.com/2000/ASIANOW /south/03/20/clinton.bangladesh/index.html

[6] Remarks by the First Lady at the Microcredit Summit, The White House, September 19, 1997.https://clintonwhitehouse4.archives.gov/textonly/WH/EOP/First_Lady/html/generalspeeches/1997/19970919-16145.html

US: the single biggest apparel market for Bangladesh

On May 18, 2000, the Trade and Development Act[7] was signed into law by President Clinton. This trade act provided duty free and quota free access to a select group of countries from Africa for their apparel exports to the United States. By then the United States had become the single biggest market for Bangladesh's apparel exports; apparel exports accounted for over 75% of Bangladesh's exports worldwide and 95% of Bangladesh's exports to the United States.

The Trade and Development Act set in motion a major effort on the part of Bangladesh to secure quota-free and duty-free access for Bangladesh's apparel exports to the United States. Although the lobbying efforts for duty-free and-quota free access to the US market during the two terms of George W. Bush were unsuccessful, there was nonetheless a significant increase in apparel exports from Bangladesh to the United States. By the end of 2008, Bangladesh exports of apparel had reached 3.6 billion dollars.[8] But in the meantime, Bangladesh had begun to attract attention in the United States as a result of a spate of terror attacks in Bangladesh during the period 2003-6.[9] This resulted in putting counter-terrorism and tackling of extremist groups at the top of the US agenda in Bangladesh.

Security cooperation

During the Obama years, counter-terrorism and preventing and countering violent extremism (P/CVE), remained at the top of the US agenda in its relations with Bangladesh. When Secretary of State Hillary Clinton visited Bangladesh on May 5, 2012, an agreement was signed for the senior officials of the two countries to hold periodic dialogues on diverse subjects, ranging from defence and security cooperation, to economic and trade cooperation. During the past eight years as many as twenty-four such dialogues or meetings between senior officials of the two countries have taken place. These dialogues added a new dimension to the bilateral relations between the two countries and created a better understanding of the position of the two countries on a wide range of issues.

Three key events

During the period 2013-2016, three events had a major impact on US-Bangladesh relations. First was the Rana Plaza tragedy on 24 April, 2013, which resulted in the death of over 1100 persons, mainly garment workers[11]. The tragedy resulted in extensive adverse publicity on Bangladesh in the US media. The issue of labour rights and safety in factories were highlighted. The Rana Plaza tragedy eventually led to the cancellation of trade concessions extended to select export products from Bangladesh under the Generalised System of Preferences (GSP), under which a few export items received duty free access to the US market. It also resulted in the establishment in December 2013 of the Alliance for Bangladesh Worker Safety, a grouping of 29 major companies in the United States, for the main part buyers or importers of apparel and 714 apparel manufacturing companies in Bangladesh. Alliance undertook a programme for improving safety and working conditions in the factories. The five-year programme ended on 31st December, 2018 and resulted in significant improvements in the 714 factories.[11]

[7] The Trade And Development Act Of 2000, The White House, May 18, 2000. https://clinton whitehouse4.archives.gov/textonly/WH/New/html/20000531_10.html

[8] Bangladesh Trade Summary 2008, World Integrated Trade System.wits.worldbank.org/CountryProfile/en/Country/BGD/Year/2008/Summary

[9] Hiranmay Karlekar, The Terrorism that Stalks Bangladesh, Global Asia, March 2008. www.globalasia.org/v3no1/cover/the-terrorism-that-stalks-bangladesh_hiranmay-karlekar

[10] The Rana Plaza Accident and its aftermath, ILO. www.ilo.org/global/topics/geip/WCMS_614394/lang--en/index.htm

[11] Empowering the garment workers: Impact of Alliance in Bangladesh, Financial Express, Bangladesh, August 27, 2020.

The second major event was the terror attack on the Holey Artisan Bakery restaurant in Gulshan, Dhaka on 1st July, 2016. The terror attack was staged by a group of Bangladeshi extremists which claimed affiliation with ISIS (Islamic State of Iraq and Syria). The Bangladesh government rejected the claim that the group was linked to ISIS; according to the government the attack was carried out by a local terrorist group, *Neo-Jamatul Mujahideen Bangladesh*. The attack resulted in the death of 22 civilians, 2 policemen and five terrorists.[12] The existing security cooperation between the United States and Bangladesh was in the aftermath of the terror attack, further strengthened, and this remains an area of high priority for both countries in their bilateral relations.

The third event was the military crackdown by the Myanmar army during the last week of August, 2017 which resulted in the massacre of thousands of Rohingyas in the Rakhine province, while some 800,000 Rohingyas were forced to seek refuge in Bangladesh. In addition to the Rohingyas who had earlier fled Myanmar, the total today of displaced Rohingyas in Bangladesh is approximately 1.2 million. The Rohingyas have been living for the past three years in makeshift camps in the border district of Cox's Bazaar. The Rohingya issue has been given the highest priority by the Bangladesh government. Mobilizing international support for the safe repatriation of the Rohingyas, holding Myanmar accountable for committing genocide, mobilizing humanitarian assistance amounting to one billion dollars a year for the Rohingyas and dealing with a host of security related problems in the camps, are just some of the problems that currently preoccupy the Bangladesh government. The United States has been at the forefront in extending support to Bangladesh on the Rohingya issue. It has provided 1.2 billion dollars in assistance for the Rohingyas during the past three years, this includes a commitment of 200 million dollars[13] at the conference held at the United Nations in New York on 22 October, 2020 on the Rohingyas.

Recent US engagement with Bangladesh

After the assumption of office by President Donald Trump in January 2017 the United States continued to view Bangladesh as an increasingly important partner in the South Asian region. During 2017, two Acting Assistant Secretaries of State visited Dhaka while the Bangladesh Foreign Secretary also visited Washington D.C. in 2017 for meetings with US State Department officials.[14] In March 2018, Lisa Curtis, President Trump's Deputy National Secretary Advisor for South Asia, visited Bangladesh and held meetings with both the Foreign Minister and the Foreign Secretary and also visited the Rohingya camps in Cox's Bazar. She reiterated US commitment to continue to support Bangladesh in resolving the Rohingya crisis.[15] Ms Curtis's visit was followed by the visit of the USAID Administrator, Mark Green, to Bangladesh where he announced 44 US million dollars of aid for the Rohingyas in the camps.[16]

In July 2018, Bangladesh's then Foreign Minister, Mahmood Ali, visited Washington DC to attend a conference on Advancing Religious Freedom and held meetings with Stephen Brownback, Ambassador for Religious Freedom and US Deputy Secretary of State John Sullivan. Both officials expressed their appreciation to Mahmood Ali for Bangladesh's humanitarian role in providing refuge to the displaced Rohingyas.[17]

[12] Holey Artisan cafe: Bangladesh Islamists sentenced to death for 2016 attack, BBC News, November 27, 2019. www.bbc.com/news/world-asia-50570243

[13] U.S. Announces Humanitarian Assistance at the International Conference on Sustaining Support for the Rohingya Refugee Response, US Department of State, October 22, 2020.

[14] Bangladesh and Bangladesh-US Relations, Congressional Research Service Report, US Congress. October 17, 2017.

[15] Lisa Curtis: US will work towards the safe return of Rohingya, Dhaka Tribune, March 3, 2018.

[16] Other countries need to step up for Rohingyas: Mark Green, The Independent, May 16, 2018.

[17] Govt committed to promoting religious freedom: Mahmood Ali, The Dialy Star, July 26, 2018.

The former US Defense Secretary, Mark Esper's, phone call to Sheikh Hasina on September 11, 2020[18], the briefing of the Bangladesh media by Deputy Assistant Secretary, Laura Stone, on the Indo-Pacific Strategy on September 15, 2020[19], the Partnership Dialogue between Salman Rahman and Keith Krach on September 30, 2020[20] and finally, Deputy Secretary of State Stephen Biegun'svisit to Dhaka on 14-15 October, 2020[21], can collectively be described as a five-week period of unprecedented engagement between the US and Bangladesh. At one level the US initiatives can be viewed as a part of the sharp deterioration in Sino-United States relations and the decision on the part of the United States to mobilize support for the Indo-Pacific Strategy to counter China. More specifically, the United States, perhaps at the request of India, felt that a special effort was required to enlist the support and active involvement of Bangladesh in the Indo-Pacific Strategy and at the same time persuade the Bangladesh government not to get too close to China.

The sharp deterioration in Sino-Indian relations in May-June 2020[22], following the border clashes on the Sino-Indian boundary, perhaps prompted the United States to view Bangladesh and in particular, its relations with China, with a certain degree of concern. It was felt that there was a need to ensure that Bangladesh did not grow too close to China in the way that Nepal had done. Bangladesh's geo-strategic importance made it a key player in the evolving cold war in South Asia. One obvious way of wooing Bangladesh was to intensify high level interaction between the United States and Bangladesh. The second was to try and get Bangladesh to become an active participant in the Indo-Pacific Strategy. The third approach was to widen and deepen the economic, trade and investment cooperation. The fourth was to try and expand the defence cooperation between the two countries. The fifth possible objective was to bolster support in the region for India against China. In addition to Mr. Biegun's visit to Bangladesh, later in October 2020, Secretary of State Pompeo following his visit to India visited Sri Lanka and the Maldives. In previous years such hyper-activity in the region on the part of the United States may have been viewed with a certain degree of concern by India, but the sequence of the visits suggested that the United States and India were working in close coordination, unlike, for example, in the case of the elections in Bangladesh in January 2014.

The Foreign Minister of Bangladesh, AK Abdul Momen, following the meeting with Stephen Biegun said "the good news is that Bangladesh is getting more attention due to (our) economic growth, stability and geo-political location. We'll have more solid relations achieving more goals"[23]. Steve Biegun, on the other hand said "we're committed to growing our partnership in this regard to advance a free and open Indo-Pacific. Bangladesh will be a centerpiece of our work in the region". In September 2020, when Foreign Minister Momen was asked to comment on the Indo-Pacific Strategy (IPS), he said "we're sure we'll be effectively engaged in any future Indo-Pacific alliance if it's found to be purely economic in nature". The essence of the message conveyed to the United States by the Bangladesh side was that Bangladesh wanted good relations with both the United States and India but at the same time wanted to maintain its ongoing cooperation in diverse fields with China.

[18] US defence secretary calls PM, discusses military cooperation, Dhaka Tribune, September 11, 2020.

[19] Online Press Briefing with Deputy Assistant Secretary of State Laura Stone, SCA, and JoAnne Wagner, Deputy Chief of Mission, U.S. Embassy Dhaka, September 15, 2020. https://bd.usembassy.gov/online-press-briefing-with-deputy-assistant-secretary-of-state-laura-stone-sca-and-joanne-wagner-deputy-chief-of-mission-u-s-embassy-dhaka

[20] Outcome Document of the High Level Economic Partnership Consultation between Bangladesh and the United States, Ministry of Foreign Affairs, Dhaka, October 5, 2020. https://mofa.gov.bd/site/press_release/82da139c-ddb9-4634-a05f-7bb66c037b0c

[21] Deputy Secretary Biegun's Visit to Bangladesh, U.S. Embassy Dhaka, October 16, 2020. https://bd.usembassy.gov/deputy-secretary-bieguns-visit-to-bangladesh

[22] Ankit Panda, The Origins of Today's Sino-India Tensions, The Diplomat, June 24, 2020. www.thediplomat.com/2020/06/the-origins-of-todays-sino-india-tensions/

[23] FM: Bangladesh's growth, geopolitical position drawing global attention, Dhaka Tribune, October 15, 2020.

Bangladesh did not want to get involved in the growing confrontation between the United States and China and would support the economic and business aspects of the IPS, as distinct from the defence related IPS aspects. In fact, in a speech at a conference in Dalian in 2019, Prime Minister Hasina elucidated her IPS thinking through a five-point proposal where she stated, "any initiative in the Indo-Pacific should include creation of an environment of peace-harmony-stability of all countries; focusing on entire aspects of sustainable development; engaging countries based on mutual trust and mutual respect for mutual benefit; focusing on wealth creation for all, development must be inclusive; and creating fair competition not rivalries."[24]

US-Bangladesh relations during the four years of the Trump administration can best be described as friendly and cordial. The focus on the Bangladesh side was to seek US support on the Rohingya issue and on trade and investment issues. The focus on the US side was on the IPS, security and defense cooperation and, at the tail end of the administration, zeroed in on US efforts to wean Bangladesh away from China. For instance, in early November 2020, the United States and Bangladesh navies undertook a joint naval exercise in the Bay of Bengal. The US navy stated that such as an exercise was a "continuing commitment to work with the Bangladesh military to address shared maritime security concerns in the region and strengthen partnerships to ensure a free and open Indo-Pacific region."[25] While such exercises may bear more significance now due to the United States placing a high priority on the IPS, the fact remains that such exercises have been a regular part of United States-Bangladesh military cooperation for many years.

For the most part this was a relationship of low priority for the United States and conducted at the level of senior officials. During the Obama years, the issue of free and fair elections, human rights, freedom of the press, labour rights, and various other governance related issues, could be described as irritants in the bilateral relationship. These issues although not entirely forgotten during the four years of the Trump administration, did not receive the degree of attention that they had received during the eight years of the Obama administration. It was only in October 2020 year that the issue of violation of human rights by the Rapid Action Battalion (RAB) surfaced in the shape of a draft bipartisan resolution in the Senate.[26]

US-Bangladesh Relations: Opportunities and Challenges

After the election of Joe Biden as the 46th US President in November last year, there was much speculation in the Bangladesh media, talk shows on TV and in *Zoom* meetings about Bangladesh-US relations during the next four years? First and foremost, Bangladesh would like to further strengthen and widen its cooperation with the United States; to continue the high-level interaction witnessed during the last administration of President Trump.

Bangladesh would like to see the Biden administration continue the strong political and economic support extended by the current administration to Bangladesh on the Rohingya issue. In September 2021, the US Ambassador to the United Nations Linda Thomas-Greenfield announced that the US government was providing nearly $180 million in additional humanitarian assistance to Myanmar, Bangladesh, and other parts of the region to support the Rohingya refugee crisis. Total funding provided by the US, including the latest amount, now totals over $1.5 billion since the crisis began in August 2017.[27]

[24] PM places 5-point proposal to make Indo-Pacific initiative successful, Prothom Alo, Bangladesh, July 2, 2019.

[25] Bangladesh and US navies conduct a naval exercise in the Bay of Bengal, Naval Recognition, November 9 2020.www.navyrecognition.com/index.php/news/defence-news/2020/november/9249-bangladesh-and-us-navies-conduct-a-naval-exercise-in-the-bay-of-bengal.html

[26] Extrajudicial Killings: 10 US senators for sanctions on Rab high-ups, The Daily Star, October 29, 2020

[27] United States Announces Nearly $180 Million in Humanitarian Assistance for the Rakhine State/Rohingya Refugee Crisis, US State Department, September 22, 2021 https://www.state.gov/united-states-announces-nearly-180-million-in-humanitarian-assistance-for-the-rakhine-state-rohingya-refugee-crisis/

The United States would also like to continue the ongoing strategic dialogues as well as the training programmes for the armed forces and the police.

However, for the present, it appears unlikely that the Bangladesh government will sign any defence related agreements such as the General Security of Military Information Agreement (GSOMIA) and the Acquisition Cross-Servicing Agreement (ACSA)[28], which the United States would like to conclude with Bangladesh.

On the geo-political front Bangladesh will seek to continue its present policy of "Friendship will all, malice to none"[29]. In other words, Bangladesh will seek to maintain close relations with India, Japan and the United States on the one hand, and with China, on the other. It will continue to support both the Belt Road Initiative as well as the IPS. In the event that relations between the United States and India, on the one hand, and China on the other, remain strained, there is every likelihood that the pressure on Bangladesh to side with the United States and India, as well as its partners in the Quad, Japan and Australia, will increase.

For Bangladesh, a major challenge will be the growth and expansion of its exports to the United States, its largest export destination. Between January-May of 2021, apparel exports to the United States grew by 15.4% to $2.58 billion, compared to $2.24 billion during the same period in 2020.[30] RMG manufacturers and experts believe that the rebound in exports occurred as some orders were shifted from China and India due to the Coronavirus pandemic crisis.

Given the impact of COVID-19 on the US economy, the prospects of increasing trade and investment in the near term are not very encouraging. Bangladesh, however, recognizes the economic fallout of the pandemic and that it will have to become much more competitive in the US market. It will have to intensify its lobbying efforts to get GSP restored and at the same time continue its efforts to get zero tariff access to the US market or at the very least some reduction in the present tariff rates. Very importantly, Bangladesh will have to give special attention to diversifying its exports to the United States. There are strong indications that over the next few years the United States can become an important market for Bangladesh's pharmaceutical products. Some experts in Bangladesh believe that negotiating a Free Trade agreement with the United States should be given the highest priority by Bangladesh and that this is the only way that Bangladesh can expand its exports to the United States.

The United States has been a major investor in Bangladesh, in particular in the oil, gas and energy sector. US companies have also invested in banking and insurance and power generation sectors. The United States is currently the largest source of foreign direct investment in Bangladesh. At the end of 2017 the United States accounted for 23% of the stock of FDI in the country. *Chevron* is the single largest foreign investor in the country, producing some 55% of Bangladesh's domestic natural gas. Bangladesh can be expected to make every effort to attract FDI from the United States during the next few years. Bangladesh is keen to attract some of the US companies which are either planning to or are in the process of relocating out of China, to come to Bangladesh. In the discussions between Salman Rahman and Keith Krach the subject of US investment in Bangladesh was discussed in great detail.[31] Indeed, attracting FDI from the US is already being given the highest priority by Bangladesh.

[28] US, Bangladesh in talks on twin deals, New Age Bangladesh, October 18, 2019.

[29] Bangabandhu's foreign policy still relevant to resolve crises, The Independent, Dhaka, March 19, 2020.

[30] Bangladesh apparel export to US rises by 15.38pc in Jan-May, New Age, July 3, 2021.

[31] Outcome Document of the High Level Economic Partnership Consultation between Bangladesh and the United States, Ministry of Foreign Affairs, Dhaka, October 5, 2020. https://mofa.gov.bd/site/press_release/82da139c-ddb9-4634-a05f-7bb66c037b0c

In July this year, the Bangladesh Securities and Exchange Commission (BSEC) organized a major roadshow on trade and Investment in Washington DC, New York, Los Angeles, and In Santa Clara in Silicon Valley. The high-level delegation was led by Mr. Salman Rahman and included Senior Secretary Finance, Commerce Secretary, External Relations Division Secretary, Chairman BIDA, Chairman BEPZA, Chairman BSEC as well as senior BSEC officials.[32]

Bangladesh certainly welcomes and encourages President Biden and his administration to continue to restore confidence in the global multilateral system, including its support to the United Nations and to UN Peacekeeping operations, of which Bangladesh remains leading contributor of troops in some of the world's most volatile places.

Bangladesh also appreciates the quick lead the United States has taken on combating the global climate change crisis. Soon after taking office, President Biden appointed former Secretary of State, John Kerry as the US Special Presidential Envoy for Climate Change. Mr. Kerry visited Bangladesh in April 2021 to personally invite Prime Minister Hasina to participate in the virtual Leaders' Summit on Climate hosted by President Biden, held on April 22-23 and attended by 40 world leaders. Mr. Kerry's visit to Bangladesh, one of the world's most vulnerable countries to climate change, has signified that President Biden is giving the utmost priority to the issue.[33] The United States also rejoined the Paris Agreement on Climate Change which President Trump pulled the US out of in 2016.

In the area of vaccine diplomacy, President Biden committed himself to supply Covid vaccine free of cost to several developing countries around the world, including Bangladesh. On September 1 this year, Bangladesh received 1 million doses of the Pfizer vaccine from the United States under the COVAX scheme.[34] This was followed four weeks later with the delivery of an additional 2.5 million Pfizer doses donated by the US government.[35]

There are however a few issues which may continue to prove contentious between the two governments, including human rights, freedom of the press, free and fair elections, human trafficking, the treatment of minorities, and labour rights. It is still too early to say the degree of importance these issues will be given by the Biden administration in its relations with Bangladesh and whether it would prefer to focus on areas of convergence or on areas of divergence.

In the aftermath of the Covid pandemic and the four years of the Trump administration, President Biden and his team will have to continue to invest a large amount of their time and energy in dealing with domestic issues, in particular, the pandemic, the economy and trying to heal the wounds of a divided nation. As such, much will depend on Bangladesh's ability to establish a good working relationship with President Biden and his administration, as well as with Congress. It has been 21 years since a US President has visited Bangladesh and 25 years since Prime Minister Sheikh Hasina met with the Clintons in the White House. There can perhaps be no better way for the bilateral relationship to be elevated to a higher level than through a summit level meeting in either Washington or Dhaka. But for a summit meeting to take place Bangladesh will have to press a lot of buttons, leverage its growing Diaspora, enlist the support of the private sector and civil society at home and do its best to enhance the image of the country abroad. Bangladesh has earned a lot of kudos for its economic performance and its social indicators;it needs to leverage this through a highly proactive diplomacy, both at home and abroad.

[32] US investors: Bangladesh showcases its capital market potential, Dhaka Tribune, July 30, 2021.

[33] US Envoy Kerry Discusses Climate Challenges in Bangladesh, The Diplomat, April 10, 2021.

[34] Bangladesh receives 1 million Pfizer vaccine doses, Dhaka Tribune, September 1, 2021.

[35] U.S. Donates 2.5 Million More Pfizer Vaccines to Bangladesh, US Embassy in Bangladesh, September 28, 2021. https://bd.usembassy.gov/us-donates-2-5-million-more-pfizer-vaccines-to-bangladesh-092821/

DIPLOMACY AT FIFTY AND BEYOND

Ambassador Nasim Firdaus
Former Ambassador

Fifty years of independence is an important milestone for Bangladesh, as the country will celebrate its Victory day on sixteenth December 2021. On this day in 1971 every Bangladeshi at home and abroad waited in anticipation for the Pakistani forces led by Lieutenant General Amir Abdullah Khan Niazi, Martial Law Administrator Zone B and Commander Eastern Command (Pakistan) surrender their arms to "Lieutenant General Jagjit Singh Aurora, General Officer Commanding in Chief of Indian and *Bangladesh** Forces in the Eastern Theatre" and accept defeat in a war. This event was the biggest defeat not only in military terms but also a diplomatic failure for Pakistan. On the other hand, surrender of 93,000 soldiers of the mighty Pakistani forces in the newly independent Bangladesh was the visible sign of recognition of the diplomatic endeavors of Bangladesh government in exile.

Ernest Satow's seminal work, *Guide to Diplomatic Practice*, defined diplomacy as the "application of intelligence and tact to the conduct of official relations between the governments of independent states... by peaceful means…" Modern day scholars have defined diplomacy as the management of international relations by negotiation. Conducting the business of negotiation necessitates existence of a robust foreign policy. Formulation of a robust foreign policy and its implementation is dependent upon relations with other countries which, *inter alia*, depend on the political philosophy of its leaders.

At the time of independence Bangladesh had three major tasks on hand: building strong relationship with other states, ensuring territorial integrity and security of the state, and branding the country as a land of opportunities. For Bangladeshi diplomats the task had already begun when Pakistan government cracked down on its own people. Pakistani diplomats of Bangladeshi origin defecting from *Pakistan* embassies around the world formed the core of the Bangladesh Foreign Service. They worked with the Provisional Government in exile for the recognition of atrocities committed by Pakistan and to gain recognition for Bangladesh as an independent and sovereign country by the international community.

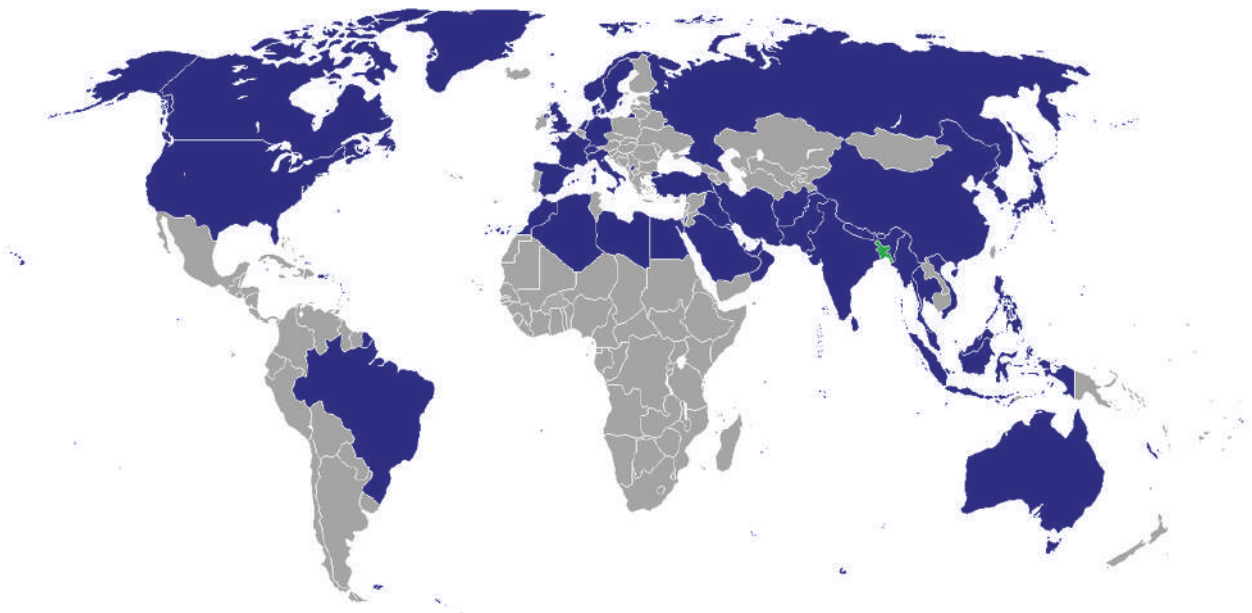
In the initial years of independence Bangladesh was keenly aware that the fastest and best way to protect its territorial integrity and ensure security was to be recognized as an independent country by all members of the United Nations, including Pakistan. Its focused attention was therefore placed on this when the Government applied for UN membership in 1972. However, its membership bid to the UN failed both in 1972 and 1973. The Peoples Republic of China (since becoming a permanent member of the Security Council by unseating Republic of China in October 1971) used its first veto to block Bangladesh from membership of the UN. Bangladesh continued its effort by seeking membership of different UN organs independently so as to create pressure points for its bid until it was admitted to the United Nations on 17 September 1974.

Meanwhile, in February 1974 Pakistan recognized Bangladesh. Following its U.N. admission, Bangladesh decided to continue seeking elected positions within the UN system to strengthen its presence on the international stage. The following year it was elected Vice President of the United Nations General Assembly. Its biggest UN electoral victory in the came in 1979 when Bangladesh became a non- permanent member of the Security Council. Ever since Bangladesh has continued to contest elections in different organs of the UN system securing several positions that it has sought.

In the meantime Pakistan and India signed the Simla Agreement to formally declare cessation of war between the two countries followed by the tripartite Delhi Agreement between India, Pakistan and Bangladesh, signed on 28 August 1973 for exchange of prisoners of war between India and Pakistan, and also the return of Bangladeshis stranded in Pakistan.

Bangobondhu's dictum '*friendship towards all malice towards none*' established the country's foreign policy imperatives in the simplest yet most comprehensive terms. He was fully aware of possible implication of the the *Indo–Soviet Union Treaty of Peace, Friendship and Cooperation* (signed in August 1971) on the 25 year Treaty of Friendship and Amity between India and Bangladesh, signed on 19 March 1972. Between his release from Pakistani prison in 1972 and his assassination in 1975, Sheikh Mujib had literally travelled the world meeting regional and international leaders to gain their support for Bangladesh assuring them of his commitment to neutrality, despite the two treaties mentioned above. During this period he also declared to make Bangladesh "Switzerland of the East" implying that the newly independent country would not participate in any war and would always remain neutral as Switzerland had done throughout its history. In framing Bangladesh's foreign policy he envisioned a conflict-free peaceful South Asia that would ensure territorial integrity and security for all countries in the region including Bangladesh.

Figure 1: Diplomatic Missions in Bangladesh



Source: Wikipedia

However, following his assassination on 15 August 1975, diplomatic relations of Bangladesh took a big hit. Support for the country from the international community, especially India, dwindled. To offset the negative impact that jolted the country, Bangladesh took several initiatives to bolster its international relations. In 1980 it mooted the concept of a regional cooperation platform, as was envisioned by Sheikh Mujib that would promote peace and prevent war between member states. Following on this, the South Asian Association for Regional Cooperation (SAARC) was launched in 1985. Bangladesh once again sought and won a non-permanent seat at the UNSC for 2000-2001 term and engaged in other regional and international forum with renewed vigor. Strengthening bilateral relations provides for strengthened trade and investment relations with important partners, in particular the international donor community. Bangladesh did falter on this when it came under different military regimes at different times. However, determination and resilience of the people of Bangladesh helped to make course corrections at several points in its history to allow elected political governments room to maneuver.

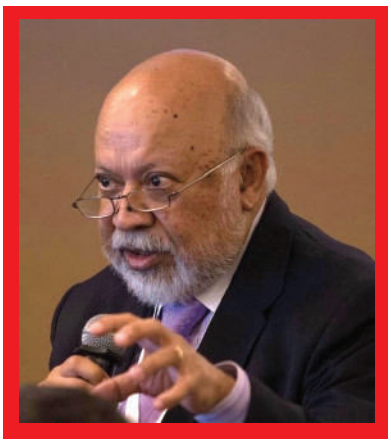
Continued success in international relations is to a great extent dependent on a country's achievements in its domestic front. Impressive economic, trade and industrial growth coupled with social and political stability painstakingly earned in the last fifty years of independence has opened up new opportunities for Bangladesh. It was fortunate to have had remarkable achievements in reaching the targets of the Millennium Development Goals. Renowned homegrown NGOs and civil society played their part in reaching some of these goals, such as in primary education; girls education; reducing maternal and child mortality rate; women empowerment and so forth. It seems also to be progressing well in achieving the targets laid out in the Sustainable Development Goals. This may however be impacted adversely due to the ongoing COVID 19 pandemic.

As it prepares to shed the LDC status and embark on the path to middle income country (MIC), there remains a great deal of work still to be done. It needs to further improve its image around some economic, social, cultural and religious issues which have been left behind unattended for far too long and is in need of urgent attention. These include radical thinking on ensuring gender equity; women's empowerment and leadership opportunities; and a strong implementable policy against sexual harassment. Ensuring tolerance for religious freedom in a predominantly Muslim country should not be entrenched in freedom for religious practices for minority religions only but it also must encompass freedom for all citizens including women to choose their destiny without hate or hindrance.

The initial years after independence were spent on establishing diplomatic relations with as many countries as possible and seek assistance from developed countries for sheer survival. Most of the foreign assistance received at the time was food aid, balance of payment support, and official development assistance. Over the years this kind of assistance gave way to trading of goods with favourable terms, such as removal of tariff and non tariff barriers and such other LDC-based benefits, transition to a MIC (middle-income country) status will cost Bangladesh many of these benefits over the next couple of years. It must now begin to prepare to negotiate deals under very different terms. Strengthening diplomatic relations with countries in Asia, Africa, South America and with post-Brexit United Kingdom will be important in the days ahead. In the last decade Bangladesh opened new embassies in Africa, South America and elsewhere which not only helps to forge new friendships but also to explore new markets for Bangladeshi goods and services. There is also need for revisiting the agenda in its existing Missions in North Africa.

When the government of the day is stable, transparent and committed to the welfare of the people and when the country's domestic policies dovetail reasonably well with its foreign policy Bangladesh could be on the first step to becoming Switzerland of the East.

*Italics inserted by Author



IMAGINING A BAY OF BENGAL ECONOMIC COOPERATION FRAMEWORK AS FIRST STEP TO LARGER INTEGRATED COOPERATION: WHAT ROLE BANGLADESH?

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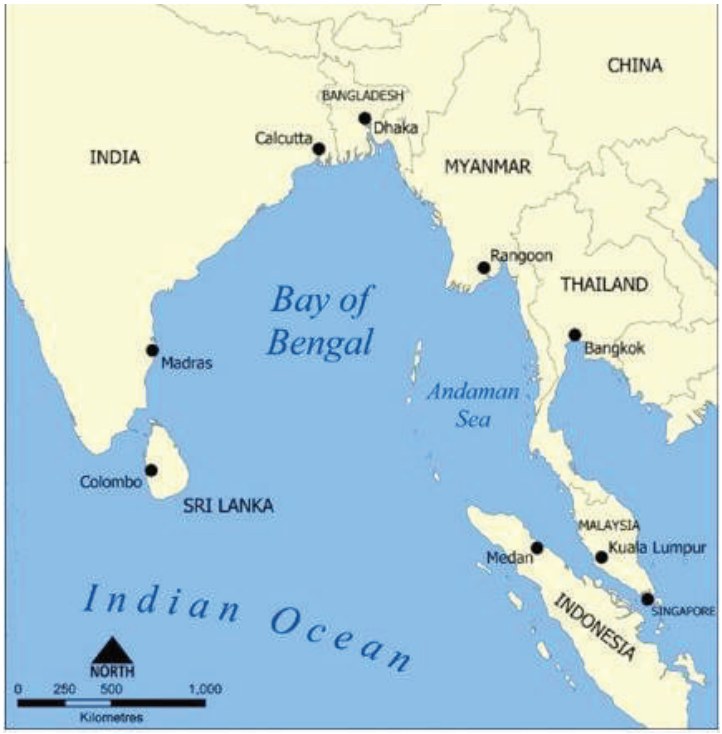
The Bay of Bengal is a central and pivotal part of the Indian Ocean and of growing strategic interest and importance to global actors. It is, notably, the largest Bay in the world. As an integral component of the Indian Ocean, it may, contextually and conceptually, be viewed as the lesser or "Central Bay" located in the north-eastern part of the "The Great Middle Bay" that is the Indian Ocean. It is bounded by the coastlines of its immediate or core dependent littoral states, namely India on the west and northwest, Bangladesh on the north, and by Myanmar, Thailand, the Andaman and Nicobar Islands of India on the east and Malaysia and Indonesia bounding its south-eastern flank. Its southern limit may be described by the parabolic line drawn from the southernmost extremity of Sri Lanka across to the north-western tip of Sumatra (Indonesia).

Figure 1: The Bay of Bengal and the Andaman Sea



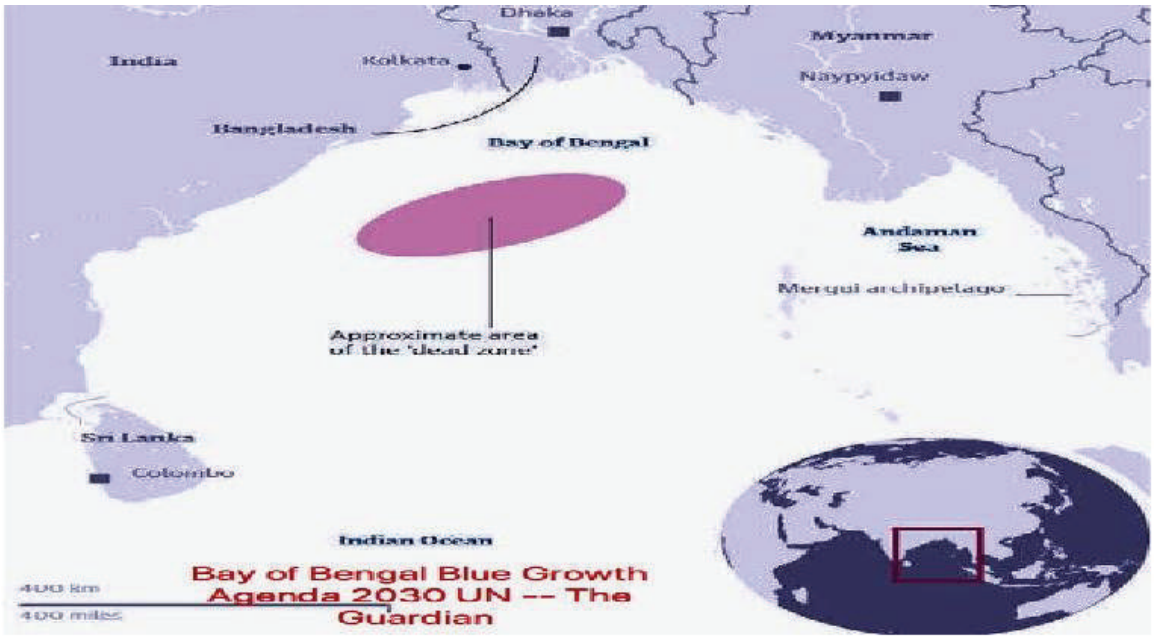
Source Wikipedia by Norman Einstein, September 15, 2005

Occupying an area of approximately 2,172,000 square kilometers, it has several major rivers draining into it, among them notably the Ganges–Hooghly, the Padma, the Brahmaputra–Jamuna, the Barak–Surma–Meghna, the Irrawaddy and Salween from Myanmar, the Godavari, the Mahanadi, the Brahmani, the Baitarani, the Krishna and the Kaveri (southern Indian rivers). It serves several important and large ports that ring it: Colombo and Hanbantota (Sri Lanka; Chennai, Kakinada, Vishakhapatnam, Tuticorin, Kolkata-Haldia, Paradip, Port Blair, Dhamra (India); Mongla, Chittagong, Payra and Matarbari (Bangladesh). The Irrawaddy and Salween Rivers in Myanmar drain into the Andaman Sea that is an integral part of the Bay of Bengal, hosting Myanmar's ports of Sittwe, Kyaukphu, Thandwe, and Mawlamyn among others. Important Malaysian ports directly or indirectly served by the Bay are Penang and Port Klang (Malacca Straits). Indonesia is set to develop the port and an economic zone at Sabang, located at the tip of Sumatra and the Malacca Straits. All these ports link with Singapore, the major seaport and transhipment point for the Indo-Pacific oceanic regions. The Bay of Bengal washes the Sundarbans forests (in Bangladesh and West Bengal coasts).

The entire Myanmarese coast also used to have mangrove forests that appear to have largely languished and almost disappeared except for small patches along the Arakanese coastal area. There were similar coastal mangrove forests in all other Bay littorals, at some point long ago, but these invaluable carbon sequestering and atmosphere oxygenating forests have completely disappeared.

Relatively recently, the Bay of Bengal also has been found to host a 60,000 square kilometers Dead zone, occupying water depths of between 100-400 meters. It is still an enigma and considered by scientists as being at a tipping point that would adversely affect not just our individual and collective wellbeing but perhaps also have harmful impact on other oceans.

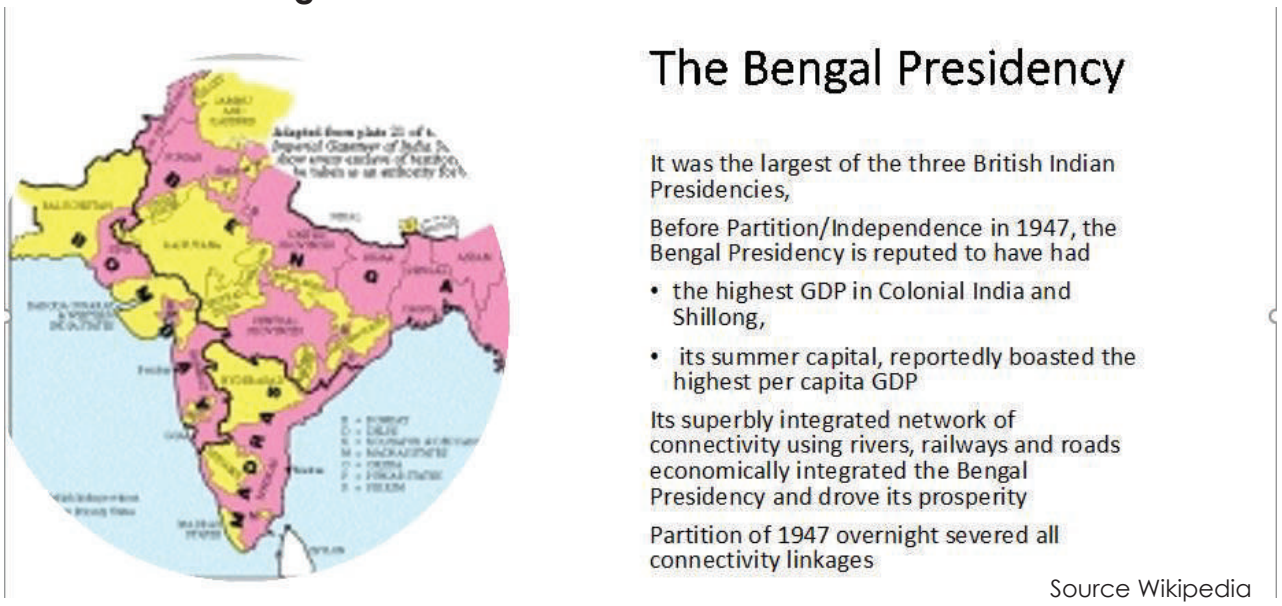
Figure 2: The Dead Zone in the Bay of Bengal



Bengal's historic role in the Bay of Bengal (BOB)

As will be seen from the map at Figure 1, Bangladesh occupies the central location at the apex of the triangular shaped Bay of Bengal. Indeed, between 1905-1911, it briefly replaced Calcutta (now Kolkata) as the capital of the then Bengal Presidency, which was the largest of the three colonial administrative divisions of British India. The Bengal Presidency, at its peak in the early 19th Century extended from the present-day Khyber-Pakhtunkhwa of Pakistan in the west to Burma, Penang, and Singapore in the east. Most of this Presidency's extended territories were gradually incorporated into other British Indian provinces or Crown colonies. With partition of Bengal in 1905, Dacca (now Dhaka) became the capital and Shillong the summer capital of the truncated province, but with the reorganization of Bengal in 1912, the reorganized Presidency embraced initially the provinces of United Bengal, Bihar, Orissa and Assam.

Figure 3: The Presidencies of British Colonial India



Bernier, the seventeenth century physician and traveler, in his historiography of his travels had described Bengal not only as the granary of the east, but also the common storehouse of cotton and silk not just of "Hindoustan or the [British] Empire of the Great Mogol only, but of all the neighbouring kingdoms, and even of Europe". Notably, Bengal alone accounted for one-third of the total population of British India at that time and yielded over one-third of the aggregate revenues of the Indian Empire. At the peak of Moghul rule in India, Bengal alone is said to have contributed at least 40% to the then global GDP.

Before Partition/Independence in 1947, the Bengal Presidency is reputed to have had the highest GDP and Shillong, its summer capital, reportedly boasted the highest per capita GDP (Karim). There can be no doubt that the superbly integrated network of connectivity using rivers, railways and roads that economically integrated the Bengal Presidency landmass was the mainstay of its then politically integrated administration under British colonial rule prior to Partition. The Partition of 1947 that overnight severed all connectivity linkages, transform what had been arguably the most integrated region in the world into the least integrated.

The Calcutta-Dhaka ports had stood at the very heart of the chain of ports (coastal and inland) that the British built: from Karachi in the west, traversing down to Bombay (Mumbai), Madras (Chennai), around Cochin (Kochi) to Vizag (Vishakhapatnam), Puri, Calcutta (Kolkata), Narayanganj, Chittagong (Chattogram), via Rangoon (Yangon) in Burma, Penang and Kuala Lumpur in Malaya to Singapore.

Is imagining a Bay of Bengal Economic Cooperation framework realistic?

Table 1: Bay of Bengal Countries – Population* (thousands)

	1950	2015	2030	2050	2100
WORLD	**2,525,149**	**7,349,472**	**8,500,766**	**9,725,148**	**11,213,317**
Sri Lanka	8,076	20,715	21,536	20,836	14,857
Bangladesh	37,895	160,996	186,460	202,209	169,541
India	376,325	1,311,051	1,527,658	1,705,333	1,659,786
Myanmar	17,527	53,897	60,242	63,575	56,026
Malaysia	6,110	30,331	36,107	40,725	40,778
Thailand	20,710	67,959	68,250	62,452	41,604
Indonesia	69,543	257,564	295,482	322,237	313,648
Total	**536,186**	**902,513**	**2,403,731**	**2,417,367**	**2,296,240**

The Bay of Bengal embraces a vast geo-spatial area, with combined population close to 2 billion (close to 25% of total global population) and GDP-PPP of USD over 16.5 trillion. Notably, the core Bay of Bengal countries, namely Sri Lanka, India, Bangladesh, Myanmar, Thailand, Malaysia and Indonesia, today account for a population of almost 1.9 billion.

Of the above, the landlocked states of India, namely Arunachal, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and West Bengal comprise 149.38 million (2018).

Table 2: NE Indian states and Sikkim population (2018)**

Arunachal	1.68 million
Assam	35.01 million
Manipur	3.27 million
Meghalaya	3.53 million
Mizoram	1.59 million
Nagaland	3.20 million
Sikkim	0.66 million
Tripura	4.54 million
West Bengal	95.90 million
TOTAL	**149.38 million**

The adjacent states with interest, namely Bhutan, Nepal, Singapore, Vietnam, Cambodia and Laos comprising account for an additional over 150 million.

Table 3: Adjacent states with interest*

	1950	2015	2030	2050	2100
Bhutan	177	775	886	950	793
Nepal	8,483	28,514	33,104	36,159	29,677
Singapore	1,022	5,604	6,418	6,681	5,593
Vietnam	24,810	93,448	105,220	112,783	105,076
Cambodia	4,433	15,578	18,991	22,545	23,928
Laos	1,683	6,802	8,489	10,172	10,411
Total	**40,608**	**150,721**	**173,108**	**189,290**	**175,478**
Grand Total (1+2)	**576,794**	**2,053,234**	**2,576,839**	**2,606,657**	**2,471,718**

*Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP.241 (https://population.un.org/wpp/publications/files/key_findings_wpp_2015.pdf)

** Source: https://indiapopulation2019.com/

The core states have a combined GDP-PPP of $16.58 trillion, while landlocked and adjacent states with interest add another $ 1 trillion.

Table 4: Bay of Bengal Countries – GDP, PPP (Current international $) 2019

Core Bay of Bengal states	**(million $)**
Sri Lanka	297,760.02
Bangladesh	809,376.04
India	9,560,219.60
Myanmar	290,208.10
Malaysia	946,342.40
Thailand	1,342,165.13
Indonesia	3,338,143.99
Sub-total (1)	**16,584,215.30**
Land-locked/Adjacent states	
Bhutan	9,428.61

Nepal	102,075.68
Singapore	579,762.51
Vietnam	809,994.33
Cambodia	75,558.09
Laos	58,593.99
Sub-total (2)	**1,635,413.21**
Grand Total (1+2)	**18,219,628.50**

This is nothing to be sneezed at, even if dwarfed by figures boasted by China ($23 trillion), US ($21.4 trillion), and the EU ($17 trillion). Actually, combined GDP of core and adjacent countries would overtake that boasted by the European Union.

China	23,487,797.98
USA	21,433,226.00
European Union	21,406,737.98
Euro Area***	17,364,938.80
OECD members	64,208,359.36

Source: The World Bank, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD

*** Euro Area countries: Belgium, Germany, Ireland, Spain, France, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Greece, Slovenia, Cyprus, Malta, Slovakia, Estonia, Latvia, Lithuania.

While SAARC countries' total intra-regional trade (trade amongst themselves) today accounts for only 5% of their total global trade (trade with other countries), ASEAN has a more respectable 25% intra trade while EU and North America boast of 40-50 per cent.

One may, therefore, reasonably imagine an economically integrated Bay of Bengal community certainly to significantly increase their current comparatively abysmal figure, given their comparative advantage in population, demography and demonstrated entrepreneurial vigor. If these states, collectively, could overcome the inhibitions and disorder fostered by the post-colonial neo-Westphalian mind-sets spawned in them since 1945 or the birth of the "new World Order", they contain within themselves, collectively, vast potentials for prosperity and development that would dwarf the awe-struck descriptions of prosperity of this region recorded by Bernier, Ibn Battuta and numerous Oriental and Occidental traders-scholars-historians who visited this region since the 4th Century BC.

Such a Bay of Bengal configuration would embrace a greater SAARC part and significant ASEAN part, forming virtually a bridging Bay of Bengal community of countries which who are of great value to both South and West Asia on the west and Southeast and East Asia on the east. However, this imagined region does not have a self-conception of a cohesive community yet.

If the Bay of Bengal littorals could evolve towards comprising a Bay of Bengal Community (BOBC), replicating EEC and ASEAN evolution, possibilities for prosperity for all the littorals would be almost limitless. Given their comparative advantage in population, demography, and entrepreneurial vigor, it is poised to become the "economic cockpit" of greater Asian region -- or, conversely, the battleground for unbridled but disastrous contestation by competing powers, whether regional or global.

It is very clearly self-evident that it is in Bangladesh's vital self-interest to strive for some measure of economic cooperation that could lead to beginnings of integration in the distant future. However, should the Bay of Bengal itself become ecologically endangered because of environmental factors resulting from multiple factors already besetting it, all countries' economic and political stability would be endangered. Therefore, the countries need to seriously engage in proactive dialogue that would serve to protect the Bay of Bengal Commons and also translate into common economic prosperity for all. Since all littorals will be adversely affected if the Bay's ecology becomes adversely compromised, they will need to come together and collaborate with each other not only to save the Bay but also to equitably and in sustainable manner continue to harvest it for the many benefits that it offers. Can Bangladesh take on this challenge? In my view, it must.

The current raging global pandemic that has driven down the global economy to rival the Great Depression (1929-39), has not only completely disrupted global value and supply chains, and upended powerful and smaller economies that could have seriously destabilising consequences on the socio-political scenario currently prevailing; it has also had devastating consequences for the South Asian region, not least on its smaller entities. Now, more than ever, the situation demands a rediscovery of our prior collective, but differently configured, regional self.

Bangladesh should consider once again playing a central and pivotal role in the Bay of Bengal, re-evaluating its strategic importance, opening up the potentials of the Blue Economy of the Bay of Bengal, and also addressing meaningfully the seriously grave looming ecological, environmental and geostrategic challenges. These threaten us all from the devastating effects of global warming and climate change that are undermining further the already devastated ecology of the region and gravely impact economic livelihood and food and health security of its peoples. The current situation arising from the COVID-19 Pandemic have gravely exacerbated the situation and cannot be left unaddressed. The current global, regional and national situations make abundantly clear not only the seminal but now increasing importance of the Bay of Bengal in the global Oceanic ecosphere, but also its swelling importance as a developing region for geo-strategic contestation between global and regional powers.

Bangladesh must safeguard its own interest and play a leading, even catalyzing role, in concert and collaboration with its "land-locked" neighbours in India, Nepal, Bhutan and also embrace all Bay of Bengal littorals, girdling the Bay from Indonesia to Sri Lanka. Such a strategy would bear critical centrality to Bangladesh's own sustained economic development and growth as well as its very survival as a nation.

Bangladesh's future prosperity, indeed, its very continuing existence, depends more than it imagines on the Bay of Bengal. It therefore needs first to better understand this great Commons and undertake concrete work to demonstrate its serious interest. Undertaking and sharing the knowledge gleaned from addressing issues closer to itself will also enable it to position itself to take the lead in efforts to bring Bay littorals closer together, to better manage and preserve the larger well-being of this commons for the sake of prosperity for all. But how do we get there? For this we may try and glean some lessons from the European and Southeast Asian processes?

Gleaning lessons from European and ASEAN transformation

Europe's transformation did not take place in one great leap forward. Efforts at unification by force (conquest) had been attempted by Napoleon and Hitler but did not succeed.
Ideas about voluntary grouping of the European states on terms of equality date back to only after the First World War (era of European Cosmopolitanism). Count Coudenhove Kalergi of Austria had called for a United States of Europe in 1923. Aristide Briand, French Foreign Minister and his German counterpart Gustave Streseman had also voiced such ideas in 1929. Their efforts failed in face of rising nationalism and the growing neo-imperialist tide (do these phrases ring a familiarly now?). What changed this tide was the growing realization by divided Europe of their sudden great weakness and vulnerability. The devastation from two World Wars, in which Europe was the main theater, shorn of their colonial might and wealth wasted in wars, and the emergence of two new hegemons (political, military & economic), namely the USA & USSR, finally compelled them to move closer together, with the conviction born out of suffering that their continent needed to come and work collaboratively with each other rather than being ceaselessly in a state of war. European cooperation was as much a rationale for self-preservation as a means for improving collective quality of life. Once this realization dawned on peoples and their leaders, there was a mushrooming growth of numerous regional organizations/groupings initially not connected with each other, such as:

- The Organization for European Economic Cooperation (1950)
- The European Coal and Steel Community (ECSC)- 1951
- The Western European Union (1954)
- The European Atomic Energy Community (EAEC or EURATOM) 1957

All above efforts finally led to formation of a more cohesive European Economic Community (EEC) in 1957. The EEC later transformed into the European Community (EC), that was the precursor of the European Union (EU), setting up a mechanism for regular meetings of their foreign ministers for political cooperation and coordinating their respective foreign policies to bring them in alignment. Significantly, Belgium, Germany, France, Italy, Luxembourg, and the Netherlands took the lead in most of these initiatives.

What set apart this body from others? The original six ceded (or ***pooled***) part of their national sovereignty (derived from the Westphalian order of 1648) in order to form a cohesive, indissoluble economic and political unit, a regional body with sovereign powers of its own, largely independent of the comprising states, that could adopt laws, regulations and rules that had force of national laws. This pooling of national sovereignty became known as "integration". The most notable and remarkable enabling factor in this organic evolution was the Franco-German reconciliation that became the cornerstone of the new European order and enlarged the reconciliation process across Europe. (A testimony of this remarkably resilient reconciliation is on public display for the citizens of Dhaka in the jointly constructed Franco-German Embassy premises in Baridhara!) These two former bitterly visceral enemies willfully decided to cooperate, collaborate and work with each other to set up a coherent, integrated economic framework, in which border checks and other barriers across borders were minimized, if not entirely removed, facilitating free movement for persons, goods, services and capital; it translated into higher living standards, impressive economic expansion, and generated vast opportunities for employment. Notably, in 1992, 15 members signed the Maastricht Treaty on formation of European Union (EU) that formed a single political and economic union that also envisaged an eventual monetary union. On January 1,1999, 11 of the members launched the European Monetary Union or EMU, that signified birth of the Euro – set to challenge the supremacy of the US dollar.

In short, in Europe, centripetal forces were at work after the devastation wreaked on that continent by two successive World Wars within a short span of time, completely destroying the old Colonial Order and leading to its replacement by a new integrated order. It is another matter that today the UK has opted to sever its ties with the European Union, driven more by the revival of narrow nationalism at the expense of broad Cosmopolitanism.

In neighboring Southeast Asian region, there were also similar centripetal forces at work, notably because the region did not suffer the horrendous fall-out of a partition of any of its component nation states, although there was a history of uneasy, even hostile relations among several of them. Two of them, Malaya and Singapore (both former British colonies) did experiment with forming a federative union named Malaysia, but inter-communal suspicion and tensions existed between its majority Malay community and the minority Chinese community in this configuration. When this latent tension threatened to spill out into open bloodshed, sagacious and far-sighted statesmanship, on both sides, decided that it was better for both to separate through a civil divorce that would still enable both to enter into cooperative arrangements with each other and with other neighbours. One major entity in the region was never colonized (Thailand), so it did not possess the nefarious legacy of "divide-and-rule" colonial policies employed in other colonized regions elsewhere. But in my view, there were two elements that made the Southeast Asian experiment conducive to success: one was what regional scholars of sociology describe as a spirit of "berkampung" (roughly translated as "togetherness") running as a common thread culturally across the region; the second, and perhaps more importantly, truly far-sighted statesmanship on the part of the largest regional entity Indonesia, (in terms of size, population and military strength) which decided to step back and allow psychological space to the smaller neighbours to feel intrinsically secure as well as grow. ASEAN too, gradually evolved through an organic process to develop the ASEAN Political Cooperation mechanism that became integrated in their periodic meetings, much like the European model, facilitating largely a coordination of their foreign policies to be in alignment when addressing issues external to the region.

In the European process, therefore, without the largest entities (formerly bitter enemies) collaborating to jointly shepherd the regional integration agenda forward, that integration perhaps would have proved elusive. In the ASEAN case, the abdication by the largest entity from playing a dominating role was critically important and reassuring for the smaller entities. However, in both regions, the process was dominated by one critically important and defining factor – a centripetalism that aided integration. In both instances, pragmatism trumped nationalism and ultra-nationalist jingoism.

Tragically, this was in sharp contrast with the dominant centrifugalism that became enshrined in the "Partition syndrome" that marked the political situation in South Asia and continues to still dominate the mindsets of peoples and their respective leadership in South Asia. It is doubly tragic that the narrative of the Partition, essentially spawned in the early part of the twentieth century, so totally obliterated the earlier millennia-old narrative of a sub-continent that had coexisted together like a vast "joint family', with its myriad members many a times squabbling bitterly amongst themselves, but largely coexisting peacefully amongst themselves. Tragically, the more recent narrative of the thirties threatens to rear and reassert itself today with greater venom, that will not leave any of the regional countries untouched. In this age of globalization and instant communication, where time and space have become virtually meaningless, the line of distinction between what is internal to a country and what is external have become very fuzzy and blurred.

The Idea of forming a Bay of Bengal Community: why should Bangladesh take leading role in championing regionalism in a divided region?

So today, in the South Asian region still dominated by centrifugalism to a large extent, and old divisive narratives suddenly reawakened to new life, why should Bangladesh take on a championing role for advocating regional cooperation in the Bay of Bengal region?

First and foremost, and most remarkably, Bangladesh may be the smallest of the partitioned rumps of the historical and civilizational Indian sub-continent, but it has proved adequately, and convincingly, over the last half century that it is by no means an inconsequential entity, in economic or geo-political terms. Bangladesh's current economic success is enviable, boasting the highest growth rate in the region and arguably the best HDIs comparatively. It today enjoys strong and the best of relations with both Asian giants that flank it, India and China, both of whom greatly value their multi-faceted bilateral relationship with Bangladesh. Bangladesh has value for them, not only as a very promising and one of the fastest growing economies today, but more importantly perhaps as an invaluable bridging pathway to larger sub-regional and inter-regional connectivity and cooperation.

Bangladesh as a relatively newly emerged nation has consistently punched above its weight, displaying vision and the gumption to take on bold initiatives that put larger powers to shame. It had played a vigorously seminal role in the formation of SAARC in 1985 through very determined and skillful diplomacy. When the larger regional process appeared stalled and brought meaningful forward movement in the SAARC process to a dead halt, it robustly and successfully championed sub-regional cooperation that resulted in the formation, in 1997, of the South Asian Growth Quadrangle (SAGQ) (that, unfortunately, went into prolonged hibernation immediately after formation) and the BIMSTEC. The latter nevertheless remained somnolent and largely inactive and unproductive for over two decades.

Bangladesh's diplomacy once again breathed fresh life into the long hibernating SAGQ and the largely somnolent BIMSTEC processes through doggedly pursuing, since 2011, the idea of sub-regional cooperation among the Bangladesh-Bhutan-India-Nepal configuration (BBIN) and its final formation as an intergovernmental platform in 2015. Since 2009, Bangladesh has palpably demonstrated its willingness to revive, and reassume, its historically important role as hub of connectivity between South Asia and Southeast and East Asia, towards which end it has invested in developing world class infrastructure to assuming the role. It has assured everyone that it will play its due role in safeguarding security and integrity of vitally important maritime commerce routes; in responsibly harvesting the vast Blue Economy potentials; and in playing a visionary leadership role in climate change mitigation, including developing greater ecological resilience for tackling climate change. Also, significantly, as a moderate, democratic and secular state it has convincingly proved its credentials as a bulwark against terrorism and fundamentalism. On all counts, therefore, it is well-positioned today for playing a bridging role as dynamic catalyst for multi-faceted regional cooperation among countries of the larger Bay of Bengal region.

True, there are lurking dangers and emerging challenges that will test the resilience not just of Bangladesh but of all the countries of the Bay of Bengal region as well. Foremost among these is the Rohingya refugee crisis caused by Myanmar's irresponsible and unacceptable treatment of its own minorities – Myanmar is everything that Bangladesh is not. Current continuing fulmination within Myanmar do not augur well either for that country or its people or the larger region itself. The growing populist and increasing communally polarizing politics now being played out in many places globally but particularly in the immediate neighborhood, signaling assertion of majoritarian pre-eminence and intolerance over tolerant inclusiveness also will inevitably spawn counterforces, domestically and intra-regionally, fueling divisiveness at the expense of cohesive cooperation.

With sagacity and far-sighted statesmanship at the helm, Bangladesh could still be at forefront of championing the incremental expansion of the current BBIN-BIMSTEC process into a wider Bay of Bengal Economic Cooperation (BoBEC) configuration – or what one may describe as a BIMSTEC-Plus configuration. Who knows that pursuit of this cause will not lead to eventual organic formation and development of a vibrant Bay of Bengal Community (or even a Bay of Bengal Union), for the benefit and well-being of all peoples of the Bay region as well as preserving the ecological integrity of this great Bay of ours?

Keeping in mind the volatility of the regional situation to our west and east in this region, let us also not forget here that there are two vigorously competing narratives with global dimensions that converge, and threaten to clash, in the waters of the Bay of Bengal, namely the Indo-Pacific and BRI concepts. One would do well to recall here the UN General Assembly Resolution 2832 of 1971 that had declared the Indian Ocean as a Zone of Peace.

The Bay of Bengal regional countries, in their own greater interest, should consider reviving applicability of that UN Declaration to cover the Bay of Bengal region in today's context, welcoming all forms of economic and development cooperation initiatives that would be universally beneficial but precluding military competition that would harm all.

Bangladesh will be taking over as the IOR Chair later this year. However, while the goals of this body are totally laudable, the IOR is also beset by many conflicting or competing visions that tend to act as a drag upon the larger process of Oceanic regional cooperation going forward. Just as I view the problems of regional cooperation at the macro level, the pathway to that larger IOR cooperation must be through smaller sub-regional cooperation first among a group of like-minded entities who find themselves in similar straits. Let us take the first step towards trying to ensure that our own Bay of Bengal first becomes a Zone of Peace, Friendship, Neutrality and Tranquility, free from disputes, with open passage for all peaceful maritime access, for sustainable cooperative conservation of its integrated ecosphere and managed harvesting of its blue water resources, facilitating connectivity between our peoples for our comprehensive growth, development, and self-fulfillment. We must play a leadership role in working in close concert with our Bay neighbours in drafting a framework agreement for governance of these existentially important Commons.

The views expressed in the article are the author's own. This article is a compendium of several previous publications of the author on the subject in different journals at different times.

Ambassador (Retd.) Tariq A Karim, a retired long-serving career diplomat, is currently the Director of the Centre for Bay of Bengal Studies at Independent University, Bangladesh. He was a Distinguished International Executive in Residence at the University of Maryland. He is now a member of the Advisory Board of the National Bureau of Asian Research (NBR) of Seattle and Washington D.C., USA, and also Honorary Advisor Emeritus to Cosmos Foundation, Bangladesh and Singapore.

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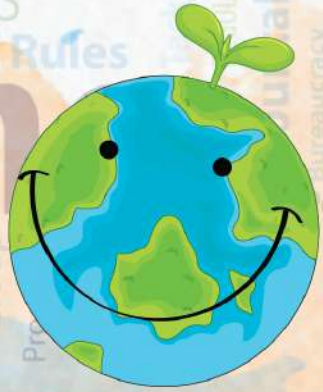

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