Indian Perspective on Rising Sea Levels as Existential Threats: *Tough Times Call for Tough Measures*

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Worldwide spread of COVID-19 pandemic in around 213 countries has made the leaders realise that non-traditional challenges and threats are no more in dormant stage. Rather, they are actively impacting and have the potential to damage the world ecosystem by messing up with the socio-political order set up by nations. Moreover, even earlier, environmental, social and economic factors have gained traction in the national security discourse. Current crisis reveals that these non-traditional factors will take precedence over the traditional ones in the coming years.

Despite several warnings from climatologists and experts especially the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) decades ago on occurrence of many pandemics, nobody listened![1] Similarly, global warming and climate change theories have had a mixed reaction from world leaders, experts, and the public.

Rise of "climate change scepticism" is attributed to this confusion that arises wherein one bloc, the *epistemic sceptics* doubt the status of climate change as a scientific and physical phenomenon. *Response sceptics*, the other bloc, on the other hand, doubt the efficacy of action taken to address the issue.[2] The latter accepts climate change threats but are either facing socio-politico-economic constraints or are minority voices. This has led to no substantial progress in the area. Notably, the two complimentary challenges – global warming and climate change – are a looming challenge to the West; they will cause existential threats to many littoral and low lying nations especially in the East.

Of all the probable issues pertaining to global warming and climate change such as land degradation, heat waves, desertification, water scarcity etc; sea-level rise (SLR) is the most compelling. SLR has the potential to threaten global peace and security by submerging land

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areas and thus low lying countries such as Bangladesh, coastal parts of India and many South East Asian countries are vulnerable to the phenomenon. According to an Intergovernmental Panel for Climate Change (IPCC) 2019 report, by 2050, while 300 million people globally live on land that will subsequently flood because of SLR; around 36 million Indians in coastal areas are estimated to be at risk due to inundation and flooding.[3] In India's case, as per the report, this is a seven-fold increase from previous study which estimated 5 million Indians at risk. Coastal areas of Mumbai, Kolkata, Odisha, Gujarat, Chennai and Kochi are at high vulnerability. Situation of other Asian countries is no better and of the 300 million populations globally, 75 per cent live in six Asian countries, namely, China, India, Vietnam, Thailand, Indonesia and Bangladesh. Further, IPCC report has warned of one metre rise in SLR from 2100 onwards at an annual rate.[4] Therefore, there is no doubt that SLR is an existential threat to most Asian countries.

Notwithstanding that SLR is a climate-induced threat; it is also a human driven phenomenon. Anthropogenic factors such as population pressure, increasing demand for natural resources, incessant deforestation and land degradation owing to rapid urbanization are responsible for pushing sea-level rise to risky extremes.[5] Moreover, resultant submergence of land in coastal areas leads to mass displacements of population from periphery areas to the core and this in turn causes further population pressure on fixed resources available. Sometimes, these mass movements take form of illegal migration and cross-border displacement. Case in point being, mass movement of Bangladeshi illegal migrants to India especially in North Bengal, Indian Sunderbans Region and North East India.[6] Such migrations owing to environmental problems give rise to environmental refugees who seek asylum in neighbouring countries until the situation back home comes back to normalcy. However, in coming years, it might result in permanent displacements.

If subsidence of low lying areas and mass displacement of population were not enough, SLR has the tendency to bring in structural changes due to tectonic shifting of plates and land masses. This will result in changing of latitudinal and longitudinal coordinates and thus will create boundary issues amongst nations. German geophysicist Alfred Wegener's *continental drift theory* can well be referred to understand this concept. Wegener argued that all the continents once coalesced and formed *Pangaea* (meaning whole in Greek) and later on due to shifting of tectonic plates and climate change, the huge mass broke to form seven continents. Fossil evidence found in the continents reveals that *Pangaea* must have existed. According to geologists, *Pangaea* formation and destruction is a cyclical process. Therefore, the current

crisis with regard to climate change and global warming leading to rise in sea-levels finds resonance with *Pangaea* theory. Even though, this is unlikely to happen in short time, long term impacts of it cannot be ignored. Thus, it should be worrisome to all the nation states as it will lead to mass structural changes. [7]

As, 75 per cent of the population impacted by SLR resides in Asia and has created "a new migrant crisis" in Bangladesh[8]; thus, little delving into the situation becomes necessary. India's case becomes important as most of this movement has serious repercussions on the country. According to a US Accountability report of 2019[9], the state departments and foreign aid agencies "have not done enough to combat climate change-induced migration in developing countries" and that Bangladesh's case is not only precarious but "particularly vulnerable".

As per few experts, while Bangladeshi's have developed a coping mechanism against floods but the damages done by climate change will have a permanent effect and that is a huge concern for the population. Climate change has been disrupting the traditional rain patterns in the country, has brought in droughts in some areas, unexpected deluge, and boosts silt-heavy runoffs from glaciers which lead to an increase in flooding and river-bank erosion. Moreover, given that the country is low lying, around one-fifth of it is vulnerable to flooding during rainy season. Of the nearly 165 million populations, one-third lives along the southern coastal region which is vulnerable.[10] According to Internal Displacement Monitoring Centre, over the last decade, nearly 700,000 Bangladeshis have annually been displaced due to natural disasters, this number spikes during catastrophic cyclones like that of Alia in 2009 and the latest Amphan in 2020.[11]

Additionally, as per World Bank's 2018 estimates, nearly 13.3 million Bangladeshis are to be displaced by 2050 because of various impacts of climate change which will be country's "number-one driver of internal migration". Further, it threatens lives and futures of almost 19 million children in the country.[12] Thus, the country is at high risk of climate change especially of SLR which can be an existential threat to it.

On almost similar lines, India's 170 million populations in coastal areas are at the frontline of being exposed to climate change and SLR of which 36 million are vulnerable to flooding and inundation by 2050. Vulnerability to climate change was latest seen in May 2020, when a strong storm in the form of Cyclone Amphan hit the Bay of Bengal in almost a decade and displaced millions of people leading to mass evacuations. According to an estimate by IPCC,

India lost 235 square kilometres of land to coastal erosions during 1990-2016. In another estimate by Internal Displacement Monitoring Centre, nearly 3.6 million Indians were displaced annually during 2008-2018. Such huge loss both in terms of land and population displacement should be of immediate concern to the country.[13] Notably, Cyclone Amphan hit the Bay of Bengal and coastal areas of West Bengal and Odhisha at the time when the country was at the peak of already dealing with COVID-19. Thus, situations like this will only hamper India's capability to deal with it unless and until stricter measures to combat them are in place.

As mentioned, SLR is a threat to environmental and physical stability especially with regard coastal regions which are more prone to it. By displacing masses, it threatens human security and by putting extra pressure on the host communities it triggers the balance of food, water and health and social securities both of the host population but majorly of the migrants who would lose their livelihood. Given that the numbers affected by it are vast, thus, it certainly is an existential threat to few nations who are in high risk category and therefore a collaborative approach amongst nations to combat it and to stop its aggravation is required. Unfortunately, countries are still in the assessment stage of the perceived threats emanating from climate change and global warming that will lead to SLR. Therefore, while immediate measures against climate change will not be helpful and cannot be taken as alterations in nature takes time, however, certain preparatory measures can be taken to minimise the effect.

For starters, climate-induced migrants can be retained through climate change adaptation techniques, people's participation, by generating awareness etc. Interestingly, the 2015 Paris Agreement on climate change aims to limit temperature increase by 2100 to less than 2 degree Celsius above pre-industrial levels. Committed to the Agreement, India plans to cut down its emissions relative to its GDP by a third by 2030 from 2005 levels. Unfortunately, Western countries are not on the same page with regard to the Agreement and the US has signalled to pull out of it.[14] Therefore, Eastern states will have to work in tandem with each other to tackle the issue. Most of all, India and Bangladesh will have to bilaterally cooperate on this.

As of now, ministerial level talks on climate change and environment has taken place between the two countries. For instance, most recently, in November 2019, India's Environment, Forest, and Climate Change and Information and Broadcasting and Heavy Industries and Public Enterprises Minister Prakash Javedkar visited Dhaka to attend the 15th

Meeting of Governing Council of South Asia Cooperative Environment Programme (SACEP).[15] However, there is a growing need to escalate the engagements at higher levels especially when the pandemic like COVID-19 has unleashed nature's fury on humans and has made the world realise that it is high time that we take environment seriously lest it's too late!

Notes:

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[2] Stuart Bryce Capstick and Nicholas Frank Pidgeon (2014), "What is Climate Change Scepticism? Examination of the Concept using a Mixed Methods Study of the UK Public", *Global Environmental Change*, Volume 24, pp. 389-401.

[3]Vashnavi Chandrashekhar (2019), "7-Fold Surge in Indians at Risk Due to Sea Level", *The Economic Times*, 31 October, Available at: https://economictimes.indiatimes.com/news/environment/global-warming/7-fold-surge-in-indians-at-risk-due-to-sea-level/articleshow/71834564.cms?from=mdr#:~:text=The%20vulnerability%20of%20Asian%20coastal,rather%20than%20once%20a%20century., Accessed on 26 June 2020.

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[6]Sahana Bose (2013), "Sea-Level Rise and Population Displacement in Bangladesh: Impact on India", *Maritime Affairs*, Journal of the National Maritime Foundation of India, Vol. 9, Issue 2, pp. 62-81.

[7]S.G. Lucas (2005), "Pangaea", *Encyclopaedia of Geology*, Available at: https://www.sciencedirect.com/topics/earth-and-planetary-sciences/pangaea, Accessed on 30 June 2020.

[8] Tim Mcdonnel (2019), "Climate Change Creates a New Migrant Crisis in Bangladesh", *National Geographic*, 24 January, Available at: https://www.nationalgeographic.com/environment/2019/01/climate-change-drives-migration-crisis-in-bangladesh-from-dhaka-sundabans/, Accessed on 30 June 2020.

[9] United States Accountability Office (2019), Climate Change: Activities of Selected Agencies to Address Potential Impact on Global Migration, Report to Congressional Requesters, Available at: https://www.gao.gov/assets/700/696460.pdf, Accessed on 30 June 2020.

[10] Tim Mcdonnel (2019).

[11] Ibid.

[12] UNICEF (2019), "Climate Change Threatens Lives and Futures of Over 19 million Children in Bangladesh", 8 April, Available at: https://www.unicef.org/press-releases/climate-change-threatens-lives-and-futures-over-19-million-children-bangladesh, Accessed on 30 June 2020.

[13]Architesh Panda (2020), "Climate Change, Displacement, and Managed Retreat in Coastal India", *Migration Policy Institute*, 22 May, Available at: https://www.migrationpolicy.org/article/climate-change-displacement-managed-retreat-india, Accessed on 30 June 2020.

[14] G Seetharaman (2019), "Coastal Concerns: Rising Sea Levels Will Inundate Coastal Areas Sooner Than Projected", *The Economic Times*, 10 November, Available at: https://economictimes.indiatimes.com/news/politics-and-nation/coastal-concerns-rising-sea-levels-will-inundate-coastal-areas-sooner-than-projected-/articleshow/71985765.cms?from=mdr, Accessed on 30 June 2020.

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