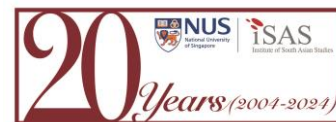


The Seminal Importance of the Himalayan “Third Pole” for Climate and Development Governance¹

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Summary

The future of the Himalayan region is linked inextricably with three 3C's – climate, connectivity and community. Of these, perhaps the climate cluster is primus inter pares among them – the other two feed into it as they walk hand in hand, weaving into our lives and existence, and affecting the survivability of not only our planet but also of our own species.

The United Nations Secretary-General, António Guterres, at a press conference at the UN (UN) in July 2023, famously said, “Humanity is in the hotseat...climate change is here. It is terrifying. And it is just the beginning...The era of global warming has ended; the era of global boiling has arrived...The air is unbreathable. The heat is unbearable...And the level of fossil fuel profits and climate inaction is unacceptable. Leaders must lead...No more hesitancy. No more excuses. No more waiting for others to move first. There is simply no more time for that.”² At the COP28 in Dubai, he asserted, “We are miles from the goals of the Paris Agreement – and minutes to midnight for the 1.5-degree limit...We cannot save a burning planet with a firehose of fossil fuels...So allow me to have a message for fossil fuel company leaders: Your old road is rapidly aging. Do not double down on an obsolete business model.”³

The UN Secretary-General is perhaps the conscience of humanity, but humanity appears to be paying scant attention to him.

The Hindukush Himalayas are of seminal importance to climatic changes affecting our planet. Stretching as they do 3,500 kilometres across from China in the east to Afghanistan in the west, they are referred to by climatologists as the world’s “Third Pole” because of the vast ice mass contained there. According to the Intergovernmental Panel on Climate Change’s Fourth Assessment report of 2007, “[the] Himalayan glaciers cover about three million hectares or 17 per cent of the mountain area as compared to 2.2 per cent in the Swiss Alps. They form the largest body of ice outside the polar caps and are the source of water for the innumerable rivers that flow across the Indo-Gangetic plains. Himalayan glacial snowfields store about 12,000 kilometres³ of freshwater. About 15,000 Himalayan

¹ This paper is drawn from the author’s keynote address on the subject at the inaugural session of the Himalayan Future Forum Conference in Kathmandu on 16 February 2024.

² Antonio Guterres, “Secretary General’s Opening Remarks at Press Conference on Climate”, 27 July 2023, United Nations, <https://www.un.org/sg/en/content/sg/speeches/2023-07-27/secretary-generals-opening-remarks-press-conference-climate>.

³ Emily Pontecorvo, “Humanity has opened the Gates of Hell” and “Nine More Times the UN Secretary-General Slayed”, 6 December 2023, <https://heatmap.news/sparks/cop28-guterres-best-quotes>.

glaciers form a unique reservoir which supports perennial rivers such as the Indus, Ganga, and Brahmaputra which, in turn, are the lifeline of millions of people in South Asian countries (Pakistan, Nepal, Bhutan, India and Bangladesh). The Gangetic basin alone is home to 500 million people – about 10 per cent of the total human population in the region.”⁴

According to a more recent study, “Between 2000 and 2019, glaciers in the High Mountain Asia region lost approximately 21 billion tons of mass per year, and even the most liberal estimates of glacier mass loss predict that the glaciers will shrink by about 40 per cent compared to 2019 volume by 2100.”⁵

Together with the oceans, which comprise over 71 per cent of our Planet Earth, the vast forested areas scattered across our seven continents, the hills and valleys through which rivers flow and that connect the mountains to the oceans, the Ice Caps of the Arctic, Antarctic, and the Hindu Kush Himalaya comprise one holistic ecosystem that has sustained Planet Earth for millennia, through maintaining an equilibrium between themselves and governing the variations in the climate through a natural process of balancing air flows and precipitation cycles.

The Himalayan glaciers help to sustain several major rivers in Asia. These rivers provide nearly two billion people with drinking water and irrigation systems used for farming. Additionally, they hold the potential for harvesting hydropower for millions of people living in South and Southeast Asia. They play a part in regulating the regional climate, as they influence monsoon patterns and help to ensure an ecological balance in surrounding areas. All scientific data in recent decades point to an alarming decrease in all three ice poles. The International Cryosphere Climate Initiative, formed in 2009 immediately after the Copenhagen COP15 and currently based in and operating from Vermont, the United States, and Stockholm, Sweden, in their *State of the Cryosphere Report 2023 – Two Degrees is Too High*, released in November 2023, asserted that the glaciers in Hindu Kush Himalayas are melting at unprecedented rates and could lose up to 80 per cent of their glaciers by 2021.⁶ Kathmandu-based International Centre for Integrated Mountain Development, in their report released earlier in the same year, had reaffirmed this.⁷ This would result in dangerous flooding and water shortages for nearly two billion people who live downstream of the rivers that originate in the Himalayas, with flash floods and avalanches becoming commonplace events. This would also seriously adversely affect the availability of fresh water for at least 240 million people who live in the Himalayan region, as well as 1.65 billion people who live downstream of the 12 rivers originating from the Himalayas.

⁴ IPCC, “IPCC Fourth Assessment Report: Climate Change 2007”, 10.6.2 The Himalayan Glaciers, https://archive.ipcc.ch/publications_and_data/ar4/wg2/en/ch10s10-6-2.html.

⁵ Aliyeh Elfar, “Glacier Melting in High Mountain Asia has the Potential to Overwhelm Hydropower Systems”, in *State of the Planet*, Columbia Climate School, 10 February 2023, <https://news.climate.columbia.edu/2023/02/10/glacial-melting-in-high-mountain-asia-has-the-potential-to-overwhelm-hydropower-systems/>.

⁶ ICCI, “State of the Cryosphere 2023: Two degrees is too high”, Chapter Three, Box 2023 Updates, p. 20; November 2023 www.iccinet.org/.

⁷ P Wester, S Chaudhary, N Chettri, M Jackson, A Maharjan, S Nepal and J F Steiner [Eds.] *Water, ice, society, and ecosystems in the Hindu Kush Himalaya: An outlook*, ICIMOD, (2023), <https://doi.org/10.53055/ICIMOD.1028>.

The current adaptation measures have proved to be grossly inadequate. Data reveals that Mount Everest's glaciers have lost 2,000 years of ice in just 30 years, while the Himalayan glaciers have disappeared 65 per cent faster since 2010 than in the previous decade. The losses of these glaciers, snow and permafrost are unprecedented and perhaps largely irreversible. Glaciers across the entire Himalayan region will lose 30 to 50 per cent of their volume by the year 2100 at 1.5°C or 2°C warming above pre-industrial levels. However, glaciers in the eastern Himalayas – in Nepal and Bhutan – will likely lose up to 75 per cent at 3°C warming and 80 per cent at 4°C warming.⁸

Flows in the region's 12 river basins, including the Ganges, Indus and Mekong, are likely to peak around the mid-century with adverse consequences for the more than 1.6 billion people who depend on these waters. The rise of waters in these rivers from increased glacier melt will not manifest as a steady flow but as possibly violent flash floods from the bursting of glacier lake dams that store huge quantities of fresh water. In October 2022, record high temperatures in March and April in the high peaks of Gilgit-Baltistan resulted in abnormally rapid melting of the Shisper Glacier, creating a lake that swelled and burst through a glacial dam. A torrent of water and debris flooded the valley below, damaging fields and houses, wrecking two power plants, and washing away parts of the main highway and a bridge connecting Pakistan and China. At least 200 glacier lakes are identified as being in a dangerous state and in danger of bursting. However, after the initial deluge following such outbursts, the water supplies of rivers will dwindle exponentially thereafter.

The consequences of losing this cryosphere are unimaginably foreboding. According to the World Meteorological Organization, the annual mean global near-surface temperature for each year between 2023 and 2027 is predicted to be between 1.1 degrees Celsius and 1.8 degrees Celsius higher than the 1,850-1,900 average, skewing snowfall and rainfall patterns increasingly out of sync with seasonality, adversely affecting all life species.⁹ There are reports of yaks having died due to a lack of fodder in India, Nepal and Bhutan, leaving farmers with huge income losses.¹⁰ The people of Bhutan, Nepal and the higher reaches of northern India are also adversely affected because of the loss of sustainable income due to the gradual disappearance of fodder that enables them to engage in yak herding, a major source of livelihood for them.¹¹ Other unique species also threatened by adverse changes to the climate of the diverse ecosystems include tropical and subtropical rainforests and temperate coniferous forests, with the timing of leaf-fall and fruiting being altered, resulting in decreased survivability of plants and threatening vulnerability of species, shifting of treelines, displacement of 90 per cent of endemic species in Sikkim Himalayas, browning of areas exposed to drought, and spread of invasive species threatening the health, sustainability and productivity of ecosystems native to the region. Additionally, mammals, insects, microbes, birds, amphibians and fishes are either becoming extinct or reportedly

⁸ Ibid.

⁹ Laura Paddison and Jessie Gretener, "Sounding the Alarm: World on Track to breach a critical warming threshold in next five years", *CNN*, 17 May 2023.

¹⁰ Byomkesh Talukder, Richard Matthew, Gary W vanLoon, Martin J Bunch, Keith W Hipel and James Orbinski, "Melting of Himalayan Glaciers and Planetary Health", *Current Opinion in Environment Sustainability* 2021, 50-98-108, Science Direct, www.sciencedirect.com.

¹¹ Kinga Dorji, Karma Dorji, DK Monger, Sonam Wangchuk and Vijay Raika, "Yak Mortality causes in selected Rangeland Areas of Bhutan", *Bhutan Journal of Animal Sciences*, Vol 6, Issue 1, pp. 56-62, March 2022.

experiencing genetic and behavioural changes and declining populations.¹² Fourteen species of butterflies, that play a vital role in pollination and eco-system preservation, have already reportedly become extinct from the Murree Hills of Pakistan;¹³ while endemic frog species are reportedly among the most impacted by climate change as they experience breeding problems and developmental deformities.

The loss of the Himalayan ice cap has grave consequences, as described above, not only for the people of the Himalayan region but for the plains, the deltaic region and the Bay of Bengal region. It will trigger a cascading set of chain reactions adversely impacting all parameters of human security – water security, food security, health security, habitat security, and livelihood security. At the very local level in Bangladesh, which connects the Himalayan mountains with the Indian Ocean through the Bay of Bengal, their ambitious development plans, like the Mujib Climate Prosperity Plan 2041 aim to building forward stronger by charting robust socio-economic development that fully integrates climate resilience and low carbon economic grow, or the even more ambitious, highly visionary Delta Plan 2100, that is essentially an adaptive techno-economic plan involving the interacting of holistic water Resources management of the river basins, land use, ecosystem management and climate change, will come crashing down, with unimaginable consequences for the country and the region.

While climate change is a global problem, it is increasingly clear that efforts so far at a global solution, in which every player is enthusiastically a part of the solution is not going to happen any time soon. While many countries are already working desperately to stave off disaster; woefully, they all work in silos. Our ready embrace four score years ago of the Westphalian model of nation-state and state sovereignty with inviolable borders led to our partitioning not only our lands but also the vast ecologically important commons that constitute our shared hydrosphere and natural commons. Most perniciously, it partitioned our very mindsets.

Ecological commons that can only thrive, survive and continue to sustain us are dying because the ecological integrity that had held them together – the mountains, the valleys, the forestry, the wildlife – and kept them healthy for millennia are now hostage to different versions of “resource nationalism”. The European Westphalian states, from which we blindly accepted the model of state sovereignty at our independence, learnt long ago to pool their sovereignty to manage their shared ecosystems and, in the process, also arrived at innovative ways of deriving benefit from these commons without undermining their national or cultural integrity. Our stubborn reluctance in the South Asian region to go that route for fear of ceding sovereignty is slowly stifling the life of these ecosystems.

¹² Himanshu Nitnaware, *Climate Change severely affecting biodiversity in Hindu Kush Himalayas: ICIMOD, Down to Earth*, 20 June 2023, <https://www.downtoearth.org.in/news/climate-change/climate-change-severely-affecting-biodiversity-in-hindu-kush-himalayas-icimod-90155#:~:text=Inper cent20Pakistanper cent2Cper cent2014per cent20speciesper cent20of,asper cent20teaper cent20shotper cent2Dholeper cent20borer>.

¹³ Saadat Nawaz, et al, “Effect of Climate Change on Butterfly population of selected Coniferous forests of Murree Hills and Adjacent Areas, Pakistan”, *Pakistan J Zool*, Vol 48(6), pp. 19, 63-69, 2016.

In South Asia, the partition of the sub-continent spawned in us this accursed “Partition Syndrome”, severing connectivity that used to be the driver of trade and economic development as well as the movement of not only humans, but other species across natural migration borders, and goods and services, ideas and cultural exchanges. It is this same syndrome that keeps us prisoners from engaging in cooperation that would address our development dilemmas and also translate into climate mitigation measures of beneficial consequence for all.

All of us need power as fuel for our industrial engines to chug at speed, without hiccups. While we in the South Asian region have a vast but latent, untapped reservoir of clean renewable energy (some estimates reckon this at being 200 Gigawatts) that we could transition to very easily if we wanted to, we have all fallen to being heavily dependent on imported fossil fuels, that are now clearly identified as the darkest culprit in global warming, and for which we pay exorbitant amounts. Our ambitions are huge but our quick realisation of those is stymied by an acute shortage of reliable power – and our singular inability, or sheer unwillingness, to work on regional collaborative ventures, our nemesis.

I had once envisioned, and openly and actively espoused, that at least in the Bangladesh, Bhutan, India, and Nepal sub-region of the sub-continent, we could collaboratively move towards putting in place an interlinked power grid of symbiotic interdependence that would not only be derived from clean, renewable energy but also impel us on water basin management in a holistic manner beneficial to all. However, our movement in that direction has been inordinately long and slow. The recent summit-level decision between Nepal and India to identify and upgrade a dedicated power grid line in India to connect with Nepali, Bhutanese and Bangladeshi grids is a huge leap forward, but we need to move fast to operationalise it. Questions related to the origin of investment funds for such power projects continue to bedevil this process. They can be overcome by entering joint venture schemes with other partners, like international development agencies or acceptable private sector, or the countries together forming a joint stock company and raising monies regionally through issuing clean energy bonds. We must also restore those severed connectivities to restore trust among the partitioned peoples of the sub-continent. However, we must not forget that at the heart of those connectivities are the communities of people who populate our lands. We must make them active participants in such activities.

While a global operational solution to our imminent global climate disaster appears to be a stubbornly elusive dream, the myriad local and national solutions that we are striving at can be given greater relevance through synergising those activities in a collaborative manner, through cooperation across communities within the nation-states, and then enlarging and expanding them to collaboration between states in the region. The new globalisation has to be a bottom-up, community-level fanning outwards, grassroots-spawned process.

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