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**Enhancing Climate Security in Pakistan:
A Bottom-Up Strategy**

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Abstract

The growing intensity of the weather events is creating a space for poly crises to breed. This in return, is creating an environment in which Climate Change, as a threat multiplier, is targeting several areas of interest. The major hit due to issues pertaining Climate crises, mostly, Climate out-migration has been endured by the National Security of the country, which as a consequence has generated dents in the economic architecture. In case of Pakistan, it has been aggravated because of the country's current political instability rooted in the economic downfall. This paper, thus explores the climate security challenges faced by Pakistan, advocating for a bottom-up strategy that emphasizes the role of local communities, provincial governments, and national policies. It also highlights the global context of climate change, its impact on vulnerable countries like Pakistan, and the urgent need for international climate finance to deal with the dual crises of economic instability coupled with loss and damage. In doing so, it builds up the argument for necessitating transformation in the global financial architecture to address Climate challenges, alongside the importance of debt relief and sustainable financial solutions for vulnerable countries to tackle the two-fold crises of

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security and economics emanating from Climate emergencies.

Introduction

The rise in the global surface temperature is currently at 1.15°C, and with each incremental increase, the frequency and intensity of human-induced climate disasters seems to be multiplying.¹ With this pace, the high intensity of natural disasters is inevitable. World Metrological Organization states that there is a 66 per cent chance that the world will temporarily exceed 1.5°C in the next 5-7 years because of strong El-Nino.² Unprecedented expansion and unsustainable exploitation of natural resources by countries is carried out extensively in the name of progress and growth since 1950. As a result, the human impact on the planet has surpassed the cumulative effects of billions of years of natural processes. We now live in the Anthropocene period, where homo sapiens have had an unparalleled impact on the earth in a relatively short span of time and due to that, unfortunately, the earth is projected to heat up by around 2.7-3.6°C by 2100, based on current policies of states, i.e., the Global National Determined Contributions (NDCs).³ As a consequence of this increased unsustainable exploitation of natural resources, the competition over natural resource is at rise. As seen in 2022, when humanity surpassed multiple safe limits of the earth's systems, it resulted in over 71 million forced migrations due to conflicts and climate-related disasters.⁴ Deforestation, agriculture, infrastructure development along with urban expansion are the major drivers of climatic polycrisis due to which globally 11% tree cover has been decreased during 2011-2021 .⁵ Therefore, even countries in the global north have started to experience the destructive effects of

climate change which were initially felt in the least developed countries. For instance, droughts and heatwaves led to devastating fires at a US military training centre in Germany, and the smoke from Canada's forest fires reached as far as New York City in the United States. Thus, making climate change an issue of national security. This was seen in 2022, when the US National Security Strategy (NSS) recognized the climate crisis as the most significant existential challenge of our time.⁶

To be specific, Pakistan's National Security Policy 2022-26 has also dedicated a portion of its policy documentation to this existential threat. Having its 80 per cent of dependency on the Indus Water Basin, Pakistan has emphasized greatly on its acute water shortage as a possible source of transboundary water conflicts. Being an agrarian economy, Pakistan's water stress is rapidly affecting the cropping patterns and per capita availability of water which in return is slowly challenging Pakistan's agriculture-based economy. This study, thus, looks into Pakistan's security dilemma that emanates from climate crises (from global to local perspectives) and presents feasible policy responses.

Historical Background

A history of UNFCCC, The Kyoto Protocol, and The Paris Agreement

During 1992-94, United Nation with 197 parties adopted and enforced United Nations Framework Convention on Climate Change (UNFCCC) framework to set out basic legal principles for international climate change cooperation, aimed at stabilizing global greenhouse gas (GHG) concentrations. To boost the effectiveness of UNFCCC, the signatories adopted and enforced

the Kyoto Protocol in 1997-2005, which pledged emission reduction targets for six GHGs from most polluting countries. First observation period was 2008-12 while the 2012 Doha Amendment established the second commitment period from 2013-20. From December 2015 to November 2016, 193 parties adopted the Paris Agreement,⁷ under which all parties shall submit their Nationally Determined Contributions (NDCs) and will review the aggregate progress on adaptation and mitigation every five years through a Global Stocktake (GST).⁸

Conference of Parties (COP) after Paris Accord

- In **Marrakech** during 7-18 November 2016, the first meeting of the parties to the Paris Agreement (CMA) took place.⁹ Multiple decisions were made on the Paris Agreement Work Program (PAWP) focusing on capacity building and assessment of available information in accordance with Article 9.5,¹⁰ “Warsaw International Mechanism¹¹” for “Loss and Damage” to enhance resilience against Climate change impacts, Technological development, and deployment mechanisms.¹²
- In **Fiji/Bonn** during 6-17 November 2017,¹³ COP launched Talanoa Dialogue, working as facilitator dialogue for taking stock of collective progress towards the Paris accord in the long term (2060-80).¹⁴ It also established the Fiji Momentum for Implementation for prioritizing implementation through PAWP. While climate finances (adaptation and mitigation) were covered by the Adaptation Fund, countries also aimed to develop local communities of indigenous people to hold executive authority under the Warsaw International Mechanism.¹⁵

- In **Katowice** during 2-14 December 2018, multilateral approaches are promoted in Article 6 of the Paris Accord.¹⁶ So, developmental work was done for PAWP in which parties adopted Katowice Climate Package which facilitates common interpretation and implementation of the Paris Agreement on the mitigation section of NDCs, GST, financial accountability, and adaptation communications.¹⁷
- In **Chile/Madrid**, during 2-13 December 2019, COP revisited Warsaw International Mechanism (WIM) under the guidance of Global Environment Facility (GEF) and **Green Climate Fund (GCF)**.¹⁸ Parties established the 'Santiago Network' to comprehensively address 'Loss and damage' and adopted a gender action plan for the Lima Work Programme (LWP).¹⁹
- In **Glasgow** during 31 October-12 November 2021, which happened just after Covid-19, parties finalized the Paris accord rule book, development of adaptation script in light of Article 6 and recognizing reporting format under Enhance transparency framework ETF.²⁰ Glasgow Climate Pact was adopted by parties, which covers three most important decisions of phasing down coal power, phasing out inefficient fossil fuel subsidies, and greater emphasis on adaptation in the global south while keeping the urgency for the global north on mitigation. Glasgow Dialogue on Loss and Damage was established which shows progress towards new collective approach on climate finance.²¹

- In **Sharm El-Sheikh** during 6-20 November 2022, COP concluded with 60 decisions majorly on climate finance.²² Regarding the Loss and Damage Fund, parties recognized the need of urgency but pledged to work out the necessary funding arrangements during COP 2023. Key element of this work program is based on urgently scaling up mitigation ambitions while developing Global Goal on Adaptation (GGA),²³ including the establishment of a work program on just transition to explore pathways to achieve net-zero carbon emissions. Parties also launched the selection process for the host of the Santiago Network Secretariat along with technical dialogue under the GST.²⁴

Bonn Climate Conference – SB58:

Inter-governmental Panel on Climate Change's (IPCC's) Sixth Assessment Report (AR6) clearly highlights the need of enhanced climate action. The 2023 Bonn Climate Change Conference took place on 5-15 June 2023, in which UNFCCC Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) featured over 20 agenda items which later served as a script for COP 28²⁵.²⁶ During the conference, spotlight was shed on major issues like loss and damage,²⁷ the new collective quantified goal on climate finance, and the first global stocktake (GST) pledged under the Paris Accord.²⁸ Calls were made for scaling up financial support for the developed countries in line with "Article 4.5" of the Paris Agreement, only then practical work programmes of mitigation and adaptation would be possible for implementation in the developing world.

These conferences serve as crucial forums that contribute significantly to the exploration of climate diplomacy and the advancement of key agenda items established during COPs. Subsequently, they facilitate effective monitoring through the Global Stocktake (GST).

Climate Diplomacy in that regard is an important step in ensuring the swift implementation of Paris Agreement and enhancing cooperation on Climate advocacy and outreach. Pakistan also played a very important role in the formation of the aforementioned Loss and Damage fund at COP27, however, its operationalization is still a concern for many on the receiving end. Nevertheless, the continuous effort on such advocacy ensures the effective mechanism or operational framework for it. It needs to be noted that this support is not about helping countries adapt to climate change, but about providing financial assistance to help them recover from the damage that has already been done.

Socioeconomic Climate Security: The State of Climate in Pakistan

The *State of Climate 2022* report released by Pakistan Metrological Department presents a grim picture of the climate dilemma in Pakistan. In January 2022, Murree and its suburbs experienced a heavy snowstorm causing deaths due to freezing temperatures and carbon monoxide poisoning. The year saw record-breaking rainfall in Sindh and Balochistan, resulting in devastating flooding, over 1,700 deaths, and displacement of millions. It was the fifth-warmest year on record, with exceptionally hot pre-monsoon months and six heatwaves. Strong winds were also observed, with the highest speed recorded at Lahore Airport. The rare phenomenon of a 'triple-dip'²⁹ with 'La

Niña' persisted for the third consecutive year, and a negative Indian Ocean dipole developed during June-September. These events highlighted the extreme weather conditions and climate patterns impacting Pakistan.³⁰

This year's COP28 designate president Dr Sultan Al Jaber visited Pakistan on 6 July 2023, at the invitation of then Minister for Climate Change, Ms Sherry Rehman. During his visit, he signed a Memorandum of Understanding (MoU) with the Ministry of Energy on securing alternative energy resources for Pakistan.³¹ This MoU came at a time when Pakistan is faced with an energy shortage caused by a global disruption in energy prices, triggered mainly by the Russia-Ukraine War. Hence, this initiative of enabling proper energy transition will prove to be effective as 40 per cent of Pakistan's primary energy supply is imported, making it prone to fluctuation at any given time.

In his session at the Foreign Service Academy, Jaber emphasized two key areas requiring immediate attention: fast-tracking transformation and bridging the gap. Furthermore, he highlighted the significant deviation from the trajectory outlined by the Paris Agreement's goal of limiting global warming to 1.5 degrees Celsius, particularly in the context of the G7 countries. He underscored the importance of inclusivity and holistic approaches for COP28, precisely emphasizing the need to bridge the gap between the Global North and Global South. The COP presidency published a long-awaited plan for this year's climate summit in which more clarity is given to renewables but sidesteps questioning fossil fuels phase-out timeline, which was rightfully criticized.³² "Today, I am calling on all of us to disrupt business as usual, unite around decisive action, and achieve game-changing

results,” Al-Jaber told officials attending the annual Ministerial Conference on Climate Action. He is aiming for brutally honest negotiations during this year’s COP for keeping the target of 1.5 degrees Celsius within reach and alive. At least 4 billion people already live in regions that experience severe water stress during peak summers, droughts are becoming more severe and breaking records in every part of the world. By 2030, without climate action, more than 100 million people will be pushed into poverty by climate change, and by 2050, 143 million people could become climate migrants. This means that the Climate migrants will be facing a grave challenge of economic stability in an unfamiliar environment, as a result of their lost livelihoods. This dire economic consequence is closely linked to security concerns, as heightened poverty rates are often associated with social unrest, conflict, and instability. Therefore, recognizing the inextricable connections between climate-induced economic vulnerabilities and broader security dynamics is paramount in formulating comprehensive strategies to address the multifaceted challenges posed by climate change. The next section of this paper will discuss the need for transforming the Current Financial Architecture that is inadequate in responding the security-economic interplay that is unfolding in the aftermath of Climate catastrophes.

Pakistan Climate Finance: Transforming the Current Financial Architecture

The major drivers of Climate Change are the anthropogenic activities that are fuelled by fossil fuel consumption. The world is not ready to give up on fossil fuels, but emissions technologies like ‘carbon capture’ or ‘solar radiation

management' are under consideration. The real success, however, lies in increasing the efficiency of the current energy infrastructure and establishing a timeline for phasing out fossil fuels. Both are out of the ambit of negotiations at this stage, unfortunately. As rightfully mentioned by DG-COP28 Majid Al Suwaidi, "There is no firm plan for phasing out fossil fuel in the near term." It is an established fact that state policies are not in line with the 1.5 or even 2 degrees Celsius target but Sultan Al-Jaber is laser-focused on ambitious NDCs documents for the first Global Stocktake (GST). Britain's Jim Skea who is the new head of the IPCC AR7 cycle acknowledged that the earth is moving towards an overshoot scenario, the scientific community is now aware and becoming alarmist because they are surprised by the speed with which extreme weather events occurred during 2023.³³

During his visit to Pakistan, Dr Sultan also presented a roadmap of his agenda that he aims to pursue during this year's COP. The main tenets of his strategy include developing an alternative energy system for the future. According to him, the world cannot unplug the old energy systems before structuring an alternative plan. Secondly, he drew attention to the importance of streamlining finance, which he believed is a tool and an enabler to fast-track the current climate pledges. He pointed out the need to transform the current financial architecture, multilateral development banks, and the international financial institutions, including both macro- and micro-level financial institutions and not limited to the World Bank and the IMF only. Thirdly, he called for ensuring the delivery of the promised \$100 bn to the climate vulnerable/affected countries. Fourthly, he stressed an action agenda rather than setting ambitious unachievable targets that

not only secures our food systems but also enhances ecosystems and accelerates adaptation. Finally, he mentioned an inclusive COP that leaves no one behind with all hands on deck, be it academia, scientists, scholars, and most importantly, the voice of young people.

The risk factor of investment, according to Dr Sultan, is a major hurdle for vulnerable countries due to which the private sector becomes sceptical before investing in green transformation. Presently, the private sector accounts for 81 per cent of climate-related investments in developed nations, while merely 14 per cent of such investments are directed towards developing countries, which are perceived as being associated with higher investment risks.³⁴ He stated that to mitigate these financial risks for vulnerable and low-income countries, the concessional fund helps reduce the risk. During the Summit for a New Global Financial Pact held in Paris on 22 June 2023, Nicholas Stern and Amar Bhattacharya delivered several noteworthy statements. In one of their statements, they estimated that an annual amount of \$1 trillion is projected to be required from external origins to address the issue at hand.³⁵ This funding entails approximately \$500-600 billion from private enterprises, \$250-300 billion from development banks, and \$150-200 billion from other nations in the form of concessional and debt-free finance.

World Bank and IMF – Transformational Steps

A holistic approach that facilitates the financial flow and facilitates alignment between numerous project developers and public as well as private financiers is the need of the hour. This would not only ease the transition for the global south but would also de-risk the investment uncertainty for the stockholders.

Besides, it is also important to implement measures to alleviate and temporarily halt debt burdens among low- and middle-income nations. These countries, grappling with the escalating impacts of climate change, face the predicament of accumulating additional debt in their pursuit of recovery. A substantial portion of low-income nations, approximately 60 per cent as indicated by the IMF, find themselves in or on the brink of debt distress.³⁶

The accelerating impacts of climate change, and the need to avoid much larger impacts in the future, bring urgency to scaling up action on adaptation and resilience. The World Bank Group is making adaptation and resilience a key priority for ambitious climate change targets for financing states and corporations. Three core objectives are to boost adaptation financing—in which the World Bank is trying to ramp up its direct adaptation climate finance to reach \$50 billion over the next 8 years for reconstruction and development—drive a mainstreamed, whole-of-government programmatic approach in which multilateral development banks (MDBs) directly answer climate financing risk assessments, and application of financial tools during the planning phase of a project through the development of a new rating system which creates an incentive based on adaptation and resilience.³⁷ Successful adaptation finance is not only about making incremental or piecemeal investments, but also about planning and development in an innovative manner. The target should be to enhance tolerance against climate shocks while promoting early adaptation actions which can protect assets and reduce losses from extreme weather events like the floods of 2022. The World Bank is trying to launch a coordinated approach towards mobilizing the private sector into climate adaptation programmes with a Maximizing

Finance for Development (MFD) approach. Mobilizing project-level finance investments that are integrated with climate risk management assessments.

MDBs shared a common vision for climate-finance based on SDGs and Paris Agreement. During this annual IMF-WB annual meeting, it was decided to review the vulnerable countries' climate profiles and update financing operations accordingly.³⁸ In that regard, the formation of two tools took place, known as, the Capital Adequacy Framework (CAF) and the Methodological Principle for Assessment of Paris Agreement Alignment of New Operations climate finance.³⁹ The aim of these tools is focused on climate disasters and establishing the Resilience and Sustainability Trust (RST) which holds financial arrangements based on policy-based loaning. Most of the time, the major problem faced by developing countries that hinders their easy access to these funds is the lack of effective planning in the submitted proposal. Cooperation between multilateral banks with one-window thematic funds is improved for co-financing in countries so that they can easily access international financing. The initiatives are aimed at streamlining internal procedures to achieve better leverage for low/middle-income countries—LICs and MICs—and small island developing states. Options are explored for enabling voluntary channelling of Special Drawing Rights (SDRs) through MDBs, including the innovative mechanism like restructuring the financial architecture, which is designed by the African Development Bank (AFDB) and the Islamic Development Bank (IDB). Similarly, the additional mobilization of resources at the local level is essential through the private sector by improving innovative Financial risk-sharing tools. Blended finance

instruments are extensively monitored for making the flow more efficient and strengthened through Multilateral Investment Guarantee Agency (MIGA's) an insurance toolkit.

Pakistan Climate Financial Outlook

In such crucial times, when Pakistan grapples with an economic crisis, political instability, and climate emergencies, this visit was a pinnacle moment for Pakistani youth and scholars to interact with the President COP28 himself, present their case for Climate Justice and advocate for pushing the Global North to turn their pledges into projects in the pipeline. This era indeed presents an Arc of vulnerability for countries like ours that struggle with such grave challenges, while lacking in all three, scale, capacity, and capital.

Pakistan's economy was buffeted by significant shocks over the past year. The severe impact of the floods, the commodity shock, and the biblical shrinking of external and domestic financing conditions put together extreme pressure with policy backsliding. During 2022, multiple factors stalled Pakistan's macro-economic growth which majorly includes the inflation rush, international reserves depletion to very low levels, and fiscal and external pressures for debt repayments. Despite the effect made during Extended Fund Facility (EFF), the macroeconomic conditions were not stable due to which the state of Pakistan pitched support under a new Stand-By Arrangement of \$3 billion.⁴⁰ The objective is to support the immediate efforts to stabilize the economy. Given Pakistan's high vulnerability to climate change and related calamities, adaptation is among its most urgent and existential challenges. IMF green budgeting

efforts reveal that climate-related spending already amounts to about 1 percent of GDP. The state authorities recently published the Pakistan National Adaptation Plan 2023, which is focused on accelerating critical “no-regret” measures and investments. Which includes “Public Financial Management - PFM” for enhancing capital expenditure efficiency through climate “Public Investment Management Assessment (PIMA)” supported by IMF technical assessment tool.

Climate Pledges

Thus, on one hand, the expectations from this year’s COP might have been elevated with the ambitious statements made by COP28 President Dr. Sultan Al Jaber. However, on the other hand, the distrust remains, as the high emitters, the G7 and G20 fail to keep up with their pledges, and the proof of which lies in UK’s recent plan bailout from the flagship £11.6bn climate pledge.⁴¹ It’s important to mention that we are currently at 1.15°C and during July humanity witnessed 17.23°C which was 2°C warmer than Earth’s mean temperature over the last 12000 years. Without a strong commitment from the Global North, it is unbearable for vulnerable countries to protect their communities from the risk of far-off emissions. Therefore, the ambitions this year must transform into actions and pledges shall become tangible commitments unless global leadership takes decisive steps toward emission reductions, this temperature will become the new normal, making liveable conditions unliveable.

As per that latest estimate, Pakistan has 908 cubic meter per capita water availability in 2021, making this region vulnerable to water resources. Due to extreme oscillation in weather patterns like monsoon seasonality and increasing average mean

temperature make this region prone to hyper arid conditions with 150 warm days ($T > 35$) per year. It is undeniable that rise in temperature and water scarcity influence food production via direct or indirect impacts on crop growth process. Pakistan's economic cycle is highly dependent upon its agricultural setup because around 43% of the country's labor force is within this sector and contributes majorly to country exports around 19-21% of GDP.

The Way Forward

The available data depicts a dismal picture and clearly establishes that Pakistan is confronted with lack of community-led initiatives, limited capacity with limited knowledge, and insufficient local level indicator database.

To deal with these interlinked challenges posed by climate change, there is a need to revisit its policy making and implementation strategies to effectively curb the challenges of climate change. A key area of intervention is building resilient communities through adaptation. Adaptation is a complex and on-going process. It requires a cycle of activities, like understanding present and projected climate change impacts, identifying options for action and developing plans, implementing, and mainstreaming adaptation actions, monitoring progress, evaluating the effectiveness of actions, and using lessons learned to calibrate investments and prioritize actions.

Pakistan needs to address issues of coordination and implementation. The 18th Amendment to the Constitution has made the provinces fairly autonomous, thus, reducing the role of the federal government in effectively monitoring its policy

guidelines. It has led to lack of coordination between stakeholders at the national, provincial, district and tehsil (sub-district) levels. This reduces policy effectiveness across sectors and impedes effective governance. In addition, the problems faced by different provinces are of a varying nature of capacity and finances. To tackle climate change scientifically with minimum available resources, there is a need to recalibrate policies that favour a bottom-up inclusive approach which avoid a tunnel vision and provide a holistic plan. In order to do this, it is essential that information must be provided by the tehsils, districts, and provinces to the federal government. It will enable it to draft its policies better to deal with the issues on ground of different provinces where the overarching policy would remain the prerogative of the federal government.

Conclusion

Overall, this pragmatic evaluation highlights the urgency of addressing the climate crisis, the need for international climate finance, the importance of local community involvement, and the significance of coordinated efforts between provincial and national governments. This builds up the case for Pakistan's Climate Security that takes up a bottom-top approach in solving the crisis. The bottom-up approach to climate security is based on the principle that local communities are best placed to understand and address the challenges they face. This approach involves empowering local communities to take action to adapt to climate change. The climate crisis is a complex problem that requires a coordinated response. This means that provincial and national governments need to work together to develop and implement a

comprehensive climate change strategy. This strategy should be based on the needs of local communities and should be tailored to the specific challenges that Pakistan faces.

Recommendations

Based on the foregoing, the following is recommended for implementation at the national, provincial, district, and tehsil levels.

National Level

- Develop interconnected legislative frameworks and regulations at the federal level to facilitate coordination.
- Craft policies and initiatives to nurture economic growth and provide incentives for businesses, such as tax incentives, grants, subsidies, and favourable regulatory environments.
- Develop national codes and standards that incorporate climate considerations and align with 1.5 °C pathways and practices, for example Phase-out Coal and IPPs.
- Facilitate emergency adaptation, readiness, response, and recovery in the pre- and post-disaster scenario, for example integration of dashboards with meteorological and satellites datasets.
- Allocate funds for programs, projects, and partnerships aimed at supporting nature-based adaptations like Recharge Pakistan, construction of small dams and reservoirs.
- Offer weather monitoring and forecasting services, conducting more scientific attribution research and analysis, and provide information and technical

equipment related to climate change readiness for example small climate hubs at tehsil level.

Provincial Level

- Special climate change departments should function at the Provincial levels. These should play two roles (a) coordination with the federal government and (b) formulating land-use planning laws and regulations concerning selling and construction activities.
- Provinces through their respective departments should take a leading role in healthcare system management and resource conservation by enhancing social security net for climate out-migrants and integrating the emergency cash system with national cash transfers.
- Provide incentives to local investors to invest in resilient infrastructure as per the local needs.
- Provide financial support and deliver essential services, in climate hit areas such as emergency services, healthcare, urban planning, economic development, and transportation.
- Gather data by conducting localized scientific research to enhance knowledge for better planning.
- Follow the 4R framework of resilience, recovery, rehabilitation, and reconstruction.⁴²

District Level

- Establish climate hubs at the district level to collect information and share it with the provincial governments.

- Enable the hubs to build collaborations and enhance participation of diverse stakeholders at the grassroots level.
- Establish transparent and accountable monitoring and evaluation systems and make them accessible to the local public.
- Integrate adaptive peacebuilding principles so that communities are held together and are less inclined to move to cities due to climate change.

Tehsil Level

- District level climate hubs should oversee and steer climate activities at the tehsil level.
- The tehsil-level and district-level hub should develop the capacity of the locals to deal with climate change by raising awareness and knowledge. This would be carried out by the district-level hubs initially till the time that capacity is increased at the tehsil level.
- Educate the youth on climate change through the existing education system by introducing basic courses, building knowledge regarding climate change.
- Organize training sessions at the tehsil levels in local language for awareness.

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