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THE DIVERSION FROM CLIMATE FINANCE TO MILITARY SPENDING HAS DWARFED COMMITMENTS MADE AT GLOBAL FORUMS. PAKISTAN IS GETTING WHAT IT DOES NOT DESERVE, STRESSES **ALI TAUQEER SHEIKH**

A LOPSIDED EQUATION

WHILE the United States continues to dismantle the international climate architecture it once helped build, wars from Ukraine to the Middle East are generating unaccounted emissions, consuming the fiscal space that wealthy nations pledged to climate finance, and returning fossil fuels to the centre of global strategy. Meanwhile, 2024 was the first calendar year to go above the 1850-1900 pre-industrial level; the critical 1.5°C threshold. The tipping points have arrived. What climate models warned would happen by 2080 is happening already.

At the receiving end stands Pakistan, a country that caused less than one per cent of the problem and is living with an outsized share of the consequences. Its glaciers are melting. Its monsoon no longer arrives on schedule, bringing, instead, either punishing drought or catastrophic flood. Its rivers are caught between a warming mountain range above, and hostile neighbours below. This is not a collection of separate crises. It is one crisis, with many faces, bearing down on us. And time is running out.

In January this year, the United States withdrew from the United Nations Framework Convention on Climate Change, the foundational 1992 treaty ratified by the Senate by a vote of 92-0 and upheld by every administration since. It simultaneously withdrew from the Paris Agreement, the IPCC, and the Green Climate Fund. No country had ever done this before. The decision was taken in a world already destabilised by the wars in Ukraine and Gaza, by a Nato rearmament that has absorbed the fiscal space European governments once directed at climate finance, and by a Gulf energy crisis that has returned fossil fuels to the centre of global strategic thinking.

The Trump administration's fossil fuel revival and Europe's sharp turn towards defence spending reflect the same underlying judgment: that security, defined narrowly, takes precedence over survival defined broadly and over time. Developed countries are choosing to strengthen themselves in the short term at the cost of planetary health and their economies at the cost of the ecosystems that underpin them. Pakistan did not make this judgment, but it is living with its consequences.

The wars generating political realignment are also generating emissions that dwarf the reductions governments have pledged. The Ukraine war has produced an estimated 230 million tonnes of CO2 equivalent over three years. The first 15 months of Israel's war on Gaza generated at least 31 million tonnes. Global military spending reached a record \$2.7 trillion in 2024. Treated as a country, the military sector would rank fourth in the world by emissions, accountable to no climate framework and invisible in every NDC submitted to the UNFCCC.

Military emissions remain exempt from Paris Agreement reporting, a loophole never closed. The \$300 billion climate finance pledge of COP29 is being dismantled by the same governments that signed it. The UK cut real-terms climate finance by roughly 50pc to fund defence spending. Germany and several other EU countries have made equivalent choices. The US has cut international climate finance to zero, and is actively working to dismantle both its own domestic climate commitments and the global agreements it once helped build.

Closer to home, Pakistan's military standoff with India in May 2025 distracted focus from the regional climate agenda at the precise moment NDC 3.0 implementation needed to be consolidated.

The closure of the Strait of Hormuz has exposed how shallow the global energy transition remains beneath its headline numbers. When the Strait closed, the response of major Asian economies was to scramble for alternative fossil fuel supply, reactivate mothballed coal plants, and sign emergency LNG contracts at premium



prices. India, Bangladesh, Vietnam and the Philippines increased coal-burn during the crisis. Japan and South Korea extended the operational life of coal and gas plants they had pledged to retire. Across Asia, coal is not a relic of the past. It is the backstop that governments reach for the moment energy security is threatened, and the

lesson is both cautionary and instructive: the energy transition is real, but it is fragile, and every geopolitical shock tests whether governments have the institutional resolve to stay the course, or the political instinct to retreat to the fuel they know.

The grand ambitions of successive COPs,

spending that record \$2.7 trillion annually on military hardware and cutting their climate finance budgets to fund it. Multiplied across the EU and the US, the cumulative diversion from climate finance to military spending dwarfs every commitment made at every COP since Copenhagen.

The bill for that choice is being paid by Pakistan and countries across the Global South — absorbing, year after year, the consequences of decisions made in capitals far from their own.

GLOBAL TARGETS HAVE SLIPPED: The Paris Agreement is failing. In 2024, the global average surface temperature reached 1.55°C above pre-industrial levels, the first calendar year to breach the Paris threshold. The three-year period ending in 2025 averaged above 1.5°C. Atmospheric CO2 is at its highest in two million years. The UNEP Emissions Gap Report 2025 finds that even full NDC implementation would deliver 2.3-2.5°C by 2100. Current policies track 2.6-3.1°C. The US withdrew from the IPCC at a time when this verdict was being written.

ECOSYSTEMS ARE TIPPING: Tipping points are activating now. Warm-water coral reefs have crossed their thermal threshold, with direct consequences for the fish stocks and coastal protection on which hundreds of millions of people in South Asia depend. Greenland is losing 30 million tonnes of ice per hour. The Atlantic circulation system (AMOC) that drives the South Asian monsoon is destabilising; its weakening would fundamentally alter the rainfall patterns on which Pakistan, India and Bangladesh have built their agricultural systems over centuries, reducing monsoon intensity in some zones while intensifying it unpredictably in others. In the Hindu Kush-Himalaya-Karakoram region, glaciers are retreating faster than the global average, draining the rivers that provide freshwater to nearly a billion people across the region. Along South Asia's coastlines, the Arabian Sea is warming faster than the global ocean average, intensifying cyclone energy and driving saltwater intrusion into the agricultural land and freshwater aquifers of coastal Sindh and Balochistan as well as Bangladesh's delta regions. These systems interact: each one that tips accelerates the others. The AMOC features in 45pc of all modelled tipping point cascade interactions. What begins in Greenland arrives, in time, in the Indus Delta.

PAKISTAN PAYS THE BILL: Pakistan's

CONTINUED ON PAGE 15

ACCELERATING THE CLIMATE TRANSITION

THE COST OF TRANSITION MIGHT BE HIGH, BUT THE COST OF INACTION IS BOUND TO BE FAR HIGHER, REMINDS **MOHAMED YAHYA**

AS the monsoon season approaches, Pakistan faces a familiar anxiety. The memory of the 2022 floods — and the 2025 flooding that again disrupted lives, livelihoods and public finances — remains raw. The government is right to be preparing early for this year's monsoon. But preparedness, while essential, is not enough. Pakistan must now accelerate, as a national priority, the broader transition to a climate-resilient, low-carbon and inclusive economy.

The science leaves little room for complacency. The world remains off course to limit warming to 1.5°C. For Pakistan, the risks are especially severe. Warming in high mountain regions is expected to outpace the global average, threatening glaciers, downstream river systems, agriculture, cities and the most vulnerable within communities. For a country whose livelihood, economy and food security are tied so closely to the In-

us Basin, this is not a distant environmental concern. It is a direct threat to growth, stability and lives.

The forthcoming 2nd Breathe Pakistan International Climate Change Conference — under the stark theme 'Time Is Running Out: Confronting Pakistan's Climate Crisis' — offers a timely moment to build consensus on a whole of society pathway for climate action. As decision-makers and experts gather in Islamabad from around the world in pursuit of this goal, they should keep in mind three things that will be critical to delivering this transition that is so critical for Pakistan: strategic financing, coherent planning and effective coordination.

External climate finance is under strain, just as adaptation needs are rising. Pakistan must mobilise climate finance at a far greater scale. This is not only about securing more international support, though grants and concessional finance remain essential. It is also about increasing domestic

resourcing from public and private sector mobilisation and public investment by sharpening the climate focus of disaster preparedness and adaptation into social and economic development spending. Using public resources to crowd in private capital. Delay is the costliest option. Rebuilding after each disaster is far more expensive than investing in preparedness and resilience now.

This means a practical financing mix: stronger public investment in critical sectors; more blended public-private partnerships in resilient infrastructure, water systems and ecosystem restoration; wider use of green bonds, debt swaps and other fiscal instruments; and closer work with financial institutions, banks and insurers to de-risk private investment in the low-carbon economy. Done well, this will not only finance domestic priorities; it will also strengthen Pakistan's ability to unlock larger grants and concessional resources from global climate funds.

Coherent planning is the key to delivering on every aspect of Pakistan's transition. Climate adaptation needs to be built into development plans that shape the economy. Pakistan already has a strong policy and legislative foundation. The National Determined Contribution (NDC 3.0) and National Adaptation Plan provide credible frameworks, and programmes contributing to the Living Indus Initiative show how nature-based solutions can support resilience at scale. But plans and legislation matter only if they lead to investments and actions. Disaster preparedness and adaptation now need to be embedded in sectoral and provincial planning, and reflected in budgets, not just planning documents.

Finally, robust, networked centre-of-government coordination is a vital element. Climate action cannot succeed if coordination is fragmented. Pakistan is not short of institutions or legal frameworks. It has already built important frameworks, including the

Climate Change Act. What is needed now is tighter alignment, clearer accountability and stronger coordinated engagement with provincial governments and civil society.

As a national priority, climate resilience should be treated as a core economic governance issue that cuts across the whole of government. When institutions move together, location-specific interventions become more bankable, implementation becomes faster, and reform becomes more durable. Pakistan has shown that it can help shape the global climate conversation. The next test is whether it can turn that leadership into faster domestic delivery and impact. The real measure will be whether or not 2026 becomes the year Pakistan moved decisively from ambition to effective climate action. The cost of transition is high, but the cost of inaction will be far higher.

The writer is the UN Resident and Humanitarian Coordinator in Pakistan.



KHYBER PAKHTUNKHWA WILDLIFE — DEPARTMENT —

Progress Review Report

2025–26

Protecting Nature | Empowering Communities | Driving Sustainability

*A Year of Impact.
A Future of Balance.*

In 2025–26, Khyber Pakhtunkhwa stands at the forefront of wildlife conservation and sustainable development—setting new benchmarks in protection, innovation, and community engagement.



RECORD-BREAKING CONSERVATION REVENUE

- USD 1.91 Million generated through 39 Big Game Hunting Permits
- Markhor permits: USD 946,000
- Ibex & Grey Goral successfully auctioned
- PKR 137.3 Million departmental revenue



STRENGTHENING WILDLIFE PROTECTION

- 2,997 Challans issued
 - 3,028 Cases resolved
 - 82 Cases prosecuted in courts
- Robust enforcement safeguarding biodiversity



DIGITAL TRANSFORMATION

- 13,383 Applications via Dastak App
- Streamlined e-licensing system
- Transparent, efficient, and accessible governance



EXPANDING PROTECTED LANDSCAPES

- NEW COMMUNITY GAME RESERVES:**
- Dar Samand (Hangu)
 - Lower Tanawal Beer Valley (Abbottabad/Haripur)
- NEW BIOSPHERE RESERVES:**
- Gallies (Abbottabad)
 - Chitral Bashkar Garam Chashma



ECO-TOURISM GROWTH

- **SWAT MINI ZOO (KANJU):** 425,000 Visitors | 150 Educational Visits
Revenue: Rs. 26.85 Million
- **Peshawar Zoo Revenue:** Rs. 41.39 Million
- **New Safari Park (Nowshera):** 560 Acres | Feasibility in Progress



RESPONSIVE GOVERNANCE

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- 177 Transparent Transfers/Postings
- 93 Recruitments | 45 Promotions on Merit



POLICY & SUSTAINABILITY REFORMS

- Amendments proposed in Wildlife & Biodiversity Act 2015
- New rules for Game Reserves, Zoos & Wildlife
- Management Solarization & digital systems reducing operational costs



CONSERVING
WILDLIFE



SUPPORTING
COMMUNITIES



STRENGTHENING
GOVERNANCE

CLIMATE CHANGE DOES NOT CARE ABOUT DISAGREEMENTS IN SOUTH ASIA. FLOODS DO NOT STOP AT BORDERS. HEATWAVES DO NOT ASK FOR VISAS. SHARED RISKS NEED SHARED SOLUTIONS, WRITES MOSABBER HOSSAIN

TIME TO SHUN POLITICS

CLIMATE activists in South Asia have to realise that climate change is not really about temperature data or policy reports, they also have to track global trends. The whole activity is about the pain of people. It is about the fisherman in coastal Bangladesh who does not know if his home will survive the next cyclone. It is about the illiterate rural farmer in Pakistan who watched flood-water destroy his crops in just a few days. It is about families forced to start again with nothing. The hardest part of reporting these stories is knowing that these people did almost nothing to create this crisis, but they are suffering the most.

What is even harder to accept is how quickly the world moves on. Disasters in the Global South become headlines for a few days and then disappear from global attention. But for the people living there, the disaster does not end when the news coverage ends. Pain continues and recovery takes years. Do they finally recover? The answer is no. The uncertainty lasts much longer.

Climate change in the Global South feels less like an environmental issue and more like a daily struggle to survive. Scientists warn that extreme heat, floods and food risks are increasing across South Asia because of climate change even though the region has contributed far less to the problem, according to an IPCC report. This reality shows why climate change must also be seen as a justice issue, not just a science issue.

Across South Asia, the pattern of climate change is becoming clearer every year. Extreme heat is increasing in Pakistan and India, making daily life dangerous for outdoor workers, farmers and low-income communities. Summers are becoming longer and more intense. Floods are also becoming more destructive and unpredictable.

Pakistan's 2022 floods showed how one disaster can destroy years of national development. More than 33 mil-

lion people were affected and losses crossed the \$30 billion mark, according to United Nations estimates. Bangladesh is facing more sudden floods as well. Recently, flash floods damaged paddy fields in low-lying areas, destroying crops that farmers depended on for their yearly income. This year, farmers have cultivated paddy on about 963,000 hectares of land, but the crops have yet to reach the flowering stage.

Across South Asia, when agriculture fails, food prices rise and rural families lose financial security. Many people are forced to migrate to cities looking for work. Climate change could force millions more people in South Asia to move internally in the coming decades, warned the World Bank Groundswell report. But migration brings new challenges. Many climate migrants end up in overcrowded urban areas, working in informal sectors with low wages and little protection. Some fall into exploitative work situations just to survive.

Climate pressure also increases social stress. When jobs disappear and income drops, crime risks increase and community stability weakens. Education is also affected. When disasters hit, schools close and many children never return because their families cannot afford it anymore. Bangladesh is a great example of it. Climate change is, therefore, not only destroying land and infrastructure, it is slowly damaging stability, development, progress and future opportunities for millions of people.

Pakistan's floods also pushed the global conversation about climate justice, loss and damage funding. Climate justice simply means fairness. Countries that produced most emissions should help those suffering the worst impact. Loss and damage refer to the destruction countries cannot prevent through preparation alone. When homes are destroyed, they must be rebuilt. When crops are lost, farmers need financial support to recover. At the COP27 climate conference, countries agreed to establish a Loss and Damage Fund after



years of pressure from vulnerable countries. This decision gave hope to many developing nations, but hope depends on action. Many important questions remain. How much money will actually be provided? How fast will support reach the affected communities? Will the funding be grants or loans?

In the past, many climate finance promises were delayed or delivered in ways that increased debt rather than reducing vulnerability. Because of this experience, countries like Pakistan and Bangladesh remain hopeful but cautious. They know promises alone cannot rebuild homes or restore livelihoods. South Asia is one of the most climate-vulnerable regions in the world despite relatively low emissions. This is why climate finance should not be seen as some kind of charity. It should be seen as a responsibility. Without fair financial support, climate disasters will continue to push vulnerable countries backwards even as they try to develop their economies and protect their people.

From Bangladesh, Pakistan's story does not feel distant. Our disasters may look different, but the experience is very

similar. Bangladesh faces erosion, salinity, cyclones and floods. Nepal and Bhutan face risks from melting glaciers. India faces extreme heat and water shortages.

South Asia is under climate pressure from many directions. Yet, the region still does not cooperate enough on climate action. This is difficult to understand because working together could reduce many risks. Countries could share flood information, improve early warning systems, and exchange knowledge on disaster response.

Bangladesh has shown how early warning systems and cyclone shelters can save thousands of lives. Pakistan has learned difficult lessons about rebuilding after disasters. Nepal and Bhutan understand mountain climate risks. This knowledge should be shared more actively. But too often politics stands in the way of environmental cooperation. Climate change does not care about political disagreements. Floods do not stop at borders. Heatwaves do not ask for visas. If the risks are shared, then the solutions must also be shared. This is why Global South cooperation matters.

Countries like Pakistan, Bangladesh, Nepal and Bhutan may not be the richest, but they have something important — experience, resilience and practical knowledge. One truth is becoming clearer every year: the Global South cannot wait for others to solve its problems. It must also build its own strength through cooperation. Climate disasters are increasing. Recovery costs are rising. Support is still not enough. The real question is not whether South Asia should work together. The real question is whether it has any other choice.

For millions of people in the region, climate justice is not a slogan. It is about whether they can rebuild their lives, educate their children, and believe that the future will be safer than the past. Climate change is no longer a future risk. It is today's reality. Disasters may be uncertain, but their growing strength is clear. What the world needs now is not more promises, but more unity.

The writer is an award-winning climate journalist based in Bangladesh.

موسمیاتی تبدیلی سے بچاؤ کی طرف پہلا قدم



20 سال بعد

حالیہ سال

We've always worked in a tough climate.
Now we're working to change it.



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Breathe Pakistan

OGDC is driving the energy transition from the front by combining the scale to make a difference with the commitment to see it through.

Pakistan is already living the consequences of climate change in its floods, its heatwaves, its air. In fact, the World Bank estimates that climate risks could cost the country up to 20% of GDP by 2050. Which is why, the urgency for large-scale, coordinated action has never been greater.

As Pakistan’s largest energy exploration and production company, OGDC is uniquely positioned to lead that action. For instance, in 2024, we conducted a full greenhouse gas inventory and set measurable reduction targets. We also signed the Oil & Gas Decarbonization Charter at COP28, committing to net-zero operations by 2050 and the elimination of routine flaring by 2030.

We even launched Pakistan’s first ESG report for an E&P company at COP29. What’s more, we introduced Floating Treatment Wetlands across key operational fields, deployed methane leak detection systems, and are actively exploring carbon capture solutions. And if that’s not enough, we are bringing solar energy to off-grid communities in Balochistan and KP. Best of all, we are planting forests, olive groves, and green corridors across Islamabad because the most powerful carbon technology on earth is still a living tree.

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POPULATION GROWTH IS OFTEN CITED AS THE CULPRIT BEHIND THE COUNTRY’S URBAN CHAOS, BUT EVIDENCE POINTS ELSEWHERE: TO FIVE DECADES OF PLANNING FAILURE, WRITES DR NASIR JAVED

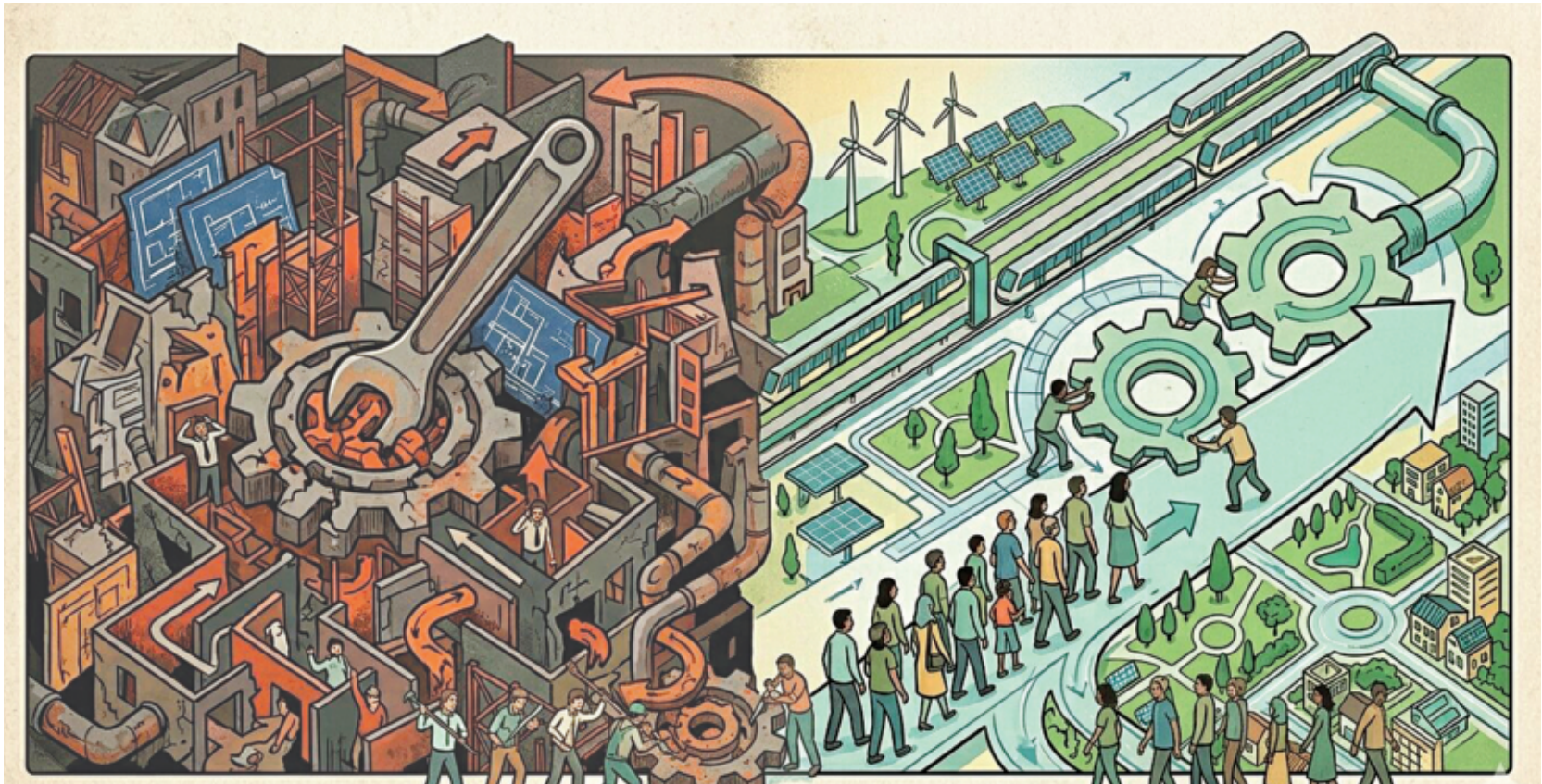
URBAN CENTRES ON THE EDGE

IN 1972, Pakistan’s census recorded Lahore’s population at just over two million. The projections were unambiguous: the city was growing at nearly four per cent a year, and the population would double within two decades. The data was not hidden. The trajectory was not a surprise. And, yet, over the following 50 years, as Lahore’s population swelled to over 14 million, the institutions responsible for managing that growth — the planning and development authorities, the water managers, the municipal corporations, the transport agencies, among others — remained largely frozen in the organisational assumptions of a far smaller city.

The Lahore Development Authority (LDA), established in 1975, was designed for a city of three million. It has never been meaningfully restructured to govern a megacity of 14 million. Master plans were drawn up and quietly shelved. Land-use regulations existed on paper, but were ignored in practice. The Ravi River’s floodplain was encroached upon in plain sight of the very authorities whose mandate it was to prevent it. Green cover fell from 35 per cent in 1990 to under 6pc today — not because no one noticed, but because no institution had the authority and the political backing to stop it. Lahore did not become an environmentally disastrous city because too many people moved there. It became one because the institutions meant to manage that growth chose — or were allowed — not to.

THE CONVENIENT ALIBI: Whenever Pakistan’s urban crisis is discussed in official forums — the flooding of Karachi, the smog of Lahore, the water scarcity of Quetta — the same explanation surfaces: too many people too quickly. Population growth, in the language of the government, is the root cause that overtook all planning and left cities no choice, but to sprawl, choke and flood.

This narrative is not merely incomplete. It is a deflection. Pakistan’s population growth rate has been thoroughly documented and consistently projected for decades. The 1981 census showed a national growth rate of 3.1 per cent annually. The 1998 census confirmed that the trajectory had hardly changed. United Nations projections from the 1990s forecast that Pakistan’s urban population would reach 80 million by 2020 — a figure that proved accurate. None of this was concealed. All of it was available



to every planning authority and provincial government. The information existed. The response did not. We just planned and developed on the ‘expectation’ that this rate would be managed downwards, while hardly any serious effort was made.

Population growth is not a surprise. It is a forecast. The failure is not that cities grew — it is that institutions chose not to plan for growth they could see coming decades in advance.

Thirty years ago, the evidence was already overwhelming that Pakistan’s population control programmes were not working. Contraceptive prevalence rates remained among the lowest in Asia. Rural-to-urban migration was accelerating. Every serious demographic analysis concluded the same thing: Pakistan’s cities were going to grow dramatically, population policy based on wishful thinking was not going to prevent it, and the only rational response was to plan for a much larger urban population.

This did not happen.

Instead, successive governments continued to treat rapid urbanisation as a temporary emergency rather than a permanent condition. The Karachi Master Plan of 2000 projected a city population of 14 million by 2020. Karachi reached that figure by 2005. No revised plan followed. The city grew past its own planning framework to over 20 million, entirely ungoverned by any document reflecting its actual scale. This is not a story of institutions overwhelmed by the unpredictable. It is a story of governments that found it politically easier to blame population growth than to invest in the unglamorous work of building planning capacity.

The institutional architecture governing Pakistan’s cities was largely designed in the colonial era and never fundamentally reformed. Development authorities, municipal corporations, water agencies and transport bodies were created for cities of hundreds of thousands, and

were never restructured to govern cities of millions. Their mandates overlap. Their revenue bases are too narrow to fund the infrastructure that growing cities require. And their technical capacity — the planners, engineers, hydrologists and climate scientists needed to design resilient cities — has never been built at anything close to the necessary scale. In fact, the human resource entrusted with managing mega cities at times is not even good enough to manage a small town.

Pakistan lost over 1,700 lives and an estimated \$30 billion in the 2022 floods. A significant portion of that damage occurred in urban and peri-urban areas where unregulated construction on floodplains — construction that any functioning planning authority should have prevented — left communities with nowhere for the water to go. Karachi’s water deficit stands

CONTINUED ON PAGE 9



Restoring Water Ripples of Change

Under **Ripples of Change – Apna Paani, Apni Kahani**, the **Sustainable Urban Water Solutions Project** uses nature-based solutions like floating treatment wetlands, recharge wells, and rainwater harvesting to help clean water, restore ecological balance, and replenish groundwater in the Ravi Basin.

Because change doesn’t arrive all at once. It begins, in ripples.



This pond once held stagnant wastewater. Today, floating treatment wetlands are helping restore it through plant roots and natural filtration.

Nawan Pind Gujran, Lahore



WATCH PROJECT VIDEO

THE CONSUMER-LED REVOLUTION HAS BEEN REMARKABLE, BUT IT HAS ALSO BROUGHT IN ITS WAKE A STORM THAT THE GOVERNMENT NEEDS TO ADDRESS RATHER URGENTLY AND EFFECTIVELY, BELIEVES **ALI AHSAN**

GOING GREEN WITH SOLAR

PAKISTAN is undergoing an energy revolution unlike any the country’s planners designed, any donor funded, or any government blueprint envisioned. Rooftop by rooftop, tubewell by tubewell, factory floor by factory floor, ordinary Pakistanis are building one of the fastest clean energy transitions ever recorded. In a country simultaneously battered by catastrophic floods, record-breaking heatwaves and an electricity tariff crisis of its own making, the sun has become both an escape route and, quietly, a contributor to Pakistan’s climate commitments. This is the story of that revolution, and the storm gathering in its wake.

The roots of Pakistan’s solar revolution lie in a catastrophic confluence of policy failure, global market forces and consumer desperation. Between 2021 and 2024, electricity tariffs surged by 155 per cent, driven by IMF-mandated removal of subsidies, soaring fuel costs from the Russia-Ukraine war, and capacity payments owed to idle CPEC-era thermal plants. At the peak, electricity bills in some households exceeded monthly house rent in major cities.

Simultaneously, Chinese solar manufacturers faced massive overproduction. Panel prices fell from 32 cents per watt in early 2024 to 17 cents by yearend, and further to USD 0.08 per watt by 2025. This ‘perfect storm’, soaring grid costs meeting collapsing panel prices, ignited an unprecedented consumer response.

In FY 2024-25, Pakistan imported 18GW of solar panels, according to Ember and Renewables First, building on 16.6GW in 2024. Cumulative imports reached 51.5GW by November 2025, making Pakistan the third-largest destination for Chinese solar exports. Solar’s share of utility electricity tripled from four per cent in 2021 to 14pc in 2024, reaching 25.3pc by early 2025, placing Pakistan among fewer than 20 countries to achieve that milestone.

Urban high-consumption households were the earliest adopters. Pakistan’s volumetric pricing structure penalises heavy usage, as tariffs rose, those with capital went solar first. Pay-back periods compressed to one to two years, and a 2015 net metering policy enabled sale of surplus power to the grid. By December 2024, there were 283,000 net-metered consumers. However, official figures capture only a fraction, with Renewables First and TransitionZero estimating that between 27GW and 33GW have actually been deployed, mostly off-grid.

In rural Pakistan, approximately 80pc of the country’s 1.5-2 million tubewells historically ran on imported diesel. As subsidies were removed, solar pumps became dramatically more economical. Agricultural electricity demand on the national grid fell 34.3pc in 2024. The World Resources Institute estimates that half of all tubewells would ultimately convert to solar, adding 5.6-7.5GW of distributed photovoltaic (PV) capacity.

The textile sector, consuming nearly one-third of Pakistan’s industrial electricity, has embraced solar to cut costs and meet global sustainability standards. The European Union’s Carbon Border Adjustment Mechanism (CBAM) has added urgency for export-facing manufacturers. Industrial firms have each installed multi-megawatt systems. Industrial grid demand fell from 31,008GWh in FY2023 to 27,830GWh in FY2024, a clear signal of structural deflection.

REGULATORY TURBULENCE: The Pakistani state has begun to respond, not always constructively. Under the original net-metering policy, solar consumers enjoyed a real benefit of approximately Rs40-50 per kWh; proposed changes slash this to Rs8-10, an almost 80 per cent reduction. The government’s Economic Coordination Committee has signalled a move to a net billing framework, significantly undermining residential solar investment.

Hasnat Khan, Senior Vice-Chairman of the Pakistan Solar Association (PSA), is unambiguous in his assessment. “People have invested their hard-earned money to install solar systems and many have even taken loans,” he said in a media interaction”, adding that the new rules “will make it difficult for people to recover their investment” and stressing: This is green energy and it should be encouraged.”



Waqas Moosa, the PSA Chairman, warns of deeper systemic risk: “We anticipate that a lot of consumers will start choosing to go for batteries, which could have profound implications for the relevance and sustainability of the central grid.”

THE OFF-GRID EXODUS: The most consequential and least-discussed dimension of Pakistan’s regulatory crisis is the battery storage inflection point. As the National Electric Power Regulatory Authority (Nepra) reduces the economic value of grid-connected solar, the rational consumer response is not to abandon solar; it is to pair solar with a lithium-ion (Li-ion) battery and go off-grid entirely.

Alongside 17GW of solar PV panel imports in 2024, Pakistan imported an estimated 1.25GWh of Li-ion batteries. According to Moosa, 40-50pc of residential customers were already integrating batteries, and that following the net-metering rollback, he expected this to reach 80-90pc. The World Bank projects that solar-plus-battery systems could supply over a quarter of Pakistan’s peak energy demand by 2030, and battery imports would reach 8.75GWh.

Once a household pairs solar with adequate battery storage, it no longer needs to sell power to the grid, nor, critically, does it need to buy from it in the evening. Such households exit the grid ecosystem entirely, eliminating their contribution to fixed infrastructure costs.

THE UTILITY DEATH SPIRAL: As higher-income consumers defect, fixed costs, including capacity payments owed to idle CPEC-era thermal plants, fall on a shrinking pool of grid-connected consumers, driving tariffs higher, which incentivises more solar-plus-battery adoption. Electricity sales on the national grid already fell 3pc in 2024 despite a 6pc rise in registered consumers.

By December 2024, net-metered consumers had already shifted USD563 million (PKR159 billion) in fixed costs onto other consumers. Without structural reforms, regulators project this regressive transfer could reach USD48.34 billion by 2034. The cruel irony is that the regulatory response, cutting buyback rates, accelerates precisely the outcome it seeks to prevent, pushing consumers towards full off-grid independence.

ACCIDENTAL GREEN DIVIDEND: Pakistan contributes less than one per cent of global greenhouse gas (GHG) emissions, approximately 400-500 million tonnes of carbon dioxide-equivalent annually. Yet, it consistently ranks among the world’s most climate-vulner-

able nations. The 2022 monsoon floods, amplified by climate change, submerged one-third of the country, killed over 1,700 people, and caused USD30 billion in damages. Glacial retreat across the Hindu Kush-Himalayan range threatens water security for 255 million Pakistanis. Heatwaves exceeding 50°C in Sindh and Balochistan are intensifying. Pakistan’s energy sector accounts for 46pc of domestic GHG emissions, making the solar transition directly relevant to its mitigation obligations.

Pakistan’s Third Nationally Determined Contribution (NDC3.0) in 2025 committed to a 50pc reduction in projected emissions by 2030, with 60pc renewable electricity as a headline target. The consumer-led solar surge is now contributing measurably, climbing from 4pc of electricity generation in 2021 to 14pc in 2024, one of the highest proportions in Asia. The Climate Change Performance Index 2026 ranked Pakistan 15th globally, a rise of 16 places.

However, climate experts caution against over-confidence. If battery storage allows consumers to exit the grid entirely, the residual grid will increasingly run on idle coal and gas plants that Pakistan is contractually obligated to pay for, producing a grid that is simultaneously dirtier and financially unsustainable for those who remain dependent on it.

THE WAY FORWARD: Pakistan’s consumer-led solar revolution has achieved in three years what six decades of government-led electrification programmes could not. But sustaining this transition, and aligning it with both economic equity and climate goals, demands that the state must act decisively on several urgent fronts.

The single most critical intervention is for the federal government to formally declare a Battery Energy Storage System (BESS) emergency, treating grid-scale storage as a matter of national energy security. As solar penetration deepens, the evening demand surge following the sunset of distributed generation is becoming structurally destabilising. The state must urgently commission utility-led storage projects at the transmission and distribution levels to absorb daytime solar surplus and release it during peak evening demand, smoothing the duck curve, reducing reliance on idle thermal plants, and keeping grid-defecting consumers connected. Without utility-scale BESS, the spiral from grid-tied solar to full battery-backed off-grid independence becomes economically inevitable for growing numbers of consumers.

The government should also remove taxes on solar panels and classify solar energy as a basic necessity. The imposition of a 10pc General Sales Tax (GST) on imported solar panels, combined with punitive net billing rates, sends a contradictory signal at the worst possible moment. The government must remove all import taxes on solar panels and formally classify solar energy as a basic necessity of life, equivalent to water or food. Solar power is no longer a luxury appliance for the affluent; it is the primary means by which millions of Pakistani households are securing affordable electricity, reducing dependence on costly fuel imports, and contributing to the country’s NDC commitments. Taxing it undermines climate targets, deepens energy inequality, and drives consumers off-grid entirely, removing them from the grid’s revenue base. Treating solar as essential will ultimately mitigate the effects of climate change by accelerating the displacement of fossil fuel generation across all consumer categories.

There is a need for government-level initiatives for the agricultural sector. Agriculture accounts for 43pc of Pakistan’s domestic GHG emissions and employs 37pc of the national workforce. The government must launch a dedicated, nationally-coordinated solar for agriculture programme, going beyond the fragmented provincial schemes, to solarise Pakistan’s 1.5-2 million tubewells, provide subsidised solar water pumping systems to smallholding farmers, and integrate solar irrigation with precision water management to address Pakistan’s deepening water insecurity. Balochistan’s PKR55 billion tubewell solarisation project and Punjab’s solar kit distributions are meaningful beginnings, but they must be scaled, coordinated and extended to cover all provinces under a unified federal agricultural energy policy. Such an initiative would simultaneously reduce diesel import costs, cut methane and carbon dioxide emissions from the agricultural energy mix, and build climate resilience for the rural communities that are the ones most exposed to Pakistan’s worsening droughts and heatwaves.

On climate finance, Pakistan’s case for international support is unimpeachable. The NDC 3.0 quantifies the energy transition need at USD101 billion, 35pc of which is contingent on external grant financing. The global community’s failure to honour its climate finance commitments to one of the world’s most vulnerable nations represents both a moral failure and a strategic miscalculation.

The writer is Research and Publication Manager, Pakistan Solar Association (PSA).

URBAN CENTRES ON THE EDGE

CONTINUED FROM PAGE 8

at over 500 million gallons per day. And this is so not because the city lacked time to build supply infrastructure, but because no institution was ever properly empowered to do so. The climate caused the flood. Institutional failure caused the catastrophe.

Karachi’s water crisis, Lahore’s smog, the 2022 flood losses — none was unforeseeable. All were forecast. The failure was institutional: authorities knew, but did not act, and were hardly enabled to act meaningfully.

THE ENVIRONMENTAL PRICE: Pakistan is among the 10 countries most vulnerable to climate change, despite contributing less than one per cent of global greenhouse gas (GHG) emissions. Yet, the environmental degradation of its cities — the lost mangroves, the felled urban forests, the paved-over wetlands, the poisoned aquifers — is not primarily a consequence of global carbon emissions. It is a consequence of institutional failure to enforce land use, protect natural systems, and plan infra-

structure at scale.

Lahore’s air quality index regularly exceeds 500, which is 15 times the safe limit set by the World Health Organisation (WHO), driven by vehicle emissions on roads with hardly any decent public transport and compounded by industrial emissions from factories established without environmental impact assessment. Karachi’s mangrove cover has been reduced by over 60 per cent through development that planning authorities either approved or failed to prevent. With over 50pc of Pakistan’s population now urban — rising to a projected 65pc by 2050 — the World Bank estimates that continued institutional failure could cost Pakistan up to 18pc of GDP annually by mid-century. These are not the costs of too many people. These are the costs of too little planning.

REBUILDING INSTITUTIONS: If institutional failure is the problem, the solution lies in building better institutions — a difficult, but tractable challenge. Curitiba in Brazil, confronting rapid rural-to-urban migration in the 1970s, built an integrated transit system

and land-use framework that accommodated growth without environmental collapse, not because it had more resources than Lahore, but because its planning institutions had genuine authority and political backing to implement long-term decisions. Pakistan’s cities need exactly that: institutions with real power, not paper mandates.

This means restoring genuine fiscal and legal authority to elected local governments. Cities that cannot raise their own revenue, enforce their own regulations, or implement their own plans cannot function as planning authorities regardless of how good their plans are. It means investing seriously in planning capacity — the urban planners, climate scientists and infrastructure engineers without whom plans remain documents rather than built reality. None of this requires resources that Pakistan does not have. It requires the political will that governments consistently choose to direct elsewhere.

THE CITIES WE MAY STILL BUILD: A national urban resilience strategy, developed with

genuine participation from city governments, civil society and the communities most exposed to climate risk would provide the architecture that scattered local innovation currently lacks. More fundamentally, it would represent an official acknowledgement that Pakistan’s urban crisis is a governance problem — and that governance problems have governance solutions, not merely blaming population numbers.

But continuing to blame population growth for failures of planning is not a strategy. It is an excuse — one that has now been in use for 50 years while Pakistan’s cities have grown ever more dangerous, ever more polluted, and ever more vulnerable to a climate that will only become more extreme. The populations are here. The cities are here. The question is whether Pakistan will finally build the institutions those cities have always deserved, or we continue to multiply the crisis. The challenge is immense and the timeline is short. We need to run a marathon at the speed of a 100-metre sprint.

The writer is an urban development specialist.



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WITH CITIES EXPANDING BEYOND CAPACITY, THE TIME MAY WELL BE RUNNING OUT, FEARS MAIRA MUMTAZ

CITIES UNABLE TO BREATHE

IN Pakistan's big cities, every morning begins the same way: a long line of brake-lights, a haze that hangs stubbornly in the air, and millions of people calculating how late they are going to be. In Karachi, Lahore, Islamabad, Peshawar, Quetta and Faisalabad, the story of urban growth is increasingly told through traffic jams and bad air quality. Transport has become the most visible symbol of how our cities are expanding and how they are struggling.

Urbanisation in Pakistan is racing ahead faster than cities can breathe or infrastructure can cope. Nearly 40 per cent of the population now lives in urban areas, a share that continues to rise with every passing year. Cities promise jobs, education, healthcare and opportunity. Yet, as populations swell and housing sprawls outward, fragile infrastructure is pushed to breaking point. Roads once designed for a fraction of today's traffic now carry millions of vehicles daily; motorbikes weave between buses, rickshaws sputter forward, private cars inch along flyovers, and pedestrians risk their lives crossing multilane roads. The cost of this growth is environmental, economic and deeply personal.

INVISIBLE COST OF MOBILITY: Transport in Pakistan is not merely a matter of convenience — it is becoming a defining axis of social inequity, environmental harm and economic strain. Every delayed bus, every gridlocked motorway, and every extra kilometre travelled is not simply an inconvenience; it is a cost paid in polluted air, rising fuel bills, lost time and growing climate risk.

Vehicular emissions are a major driver of urban air pollution across the country. As traffic surges across Pakistan's cities, so does the toll on public health and the environment. Respiratory illnesses, allergies, cardiovascular disease, and reduced life expectancy are becoming part of daily life, while the grey haze of smog has become all too familiar. In 2025, Pakistan was ranked the world's smoggiest country, with levels of fine particulate matter (PM2.5) up to 13 times higher than the safe limits recommended by the World Health Organisation (WHO). This is a stark reminder that pollution is not an ab-



stract statistic, but the direct consequence of millions of combustion engines idling in congested streets.

The consequences extend beyond human health. Urban transport has become one of the fastest-growing sources of GHG emissions in the country. Rapid urbanisation, combined with sprawling development and limited public transport in many cities, has driven a surge in private vehicles. The daily choreography of cars, bikes and rickshaws on the streets is not just a story of congestion; it is a visible marker of how Pakistan's cities are locking themselves into carbon-intensive patterns.

Urban growth has also stretched the cities outward. Affordable housing and gated communities continue to proliferate far from city centres. A worker living on the periphery of Lahore or Karachi may travel two to three hours daily just to reach work. Distance is no longer measured in kilometres, but in hours lost to congestion and the fuel burned in gridlock.

Public transport remains fragmented at best. While BRT systems and metro bus corridors have been introduced in

several cities, their reach remains limited relative to sprawling populations. Feeder networks are inconsistent, integration across routes is weak, and last-mile connectivity continues to be a major barrier. The impact of transport dysfunction is not evenly felt. Those who can afford private transport depend on it. For women, mobility challenges are sharper. Transport, in this sense, is not only a climate issue, but an issue of social justice.

Climate-friendly transport offers a pathway out of this crisis. Electric mobility has emerged globally as a central strategy for reducing transport emissions. In Pakistan, electric vehicles (EVs) are gradually making their presence felt. Charging infrastructure is slowly expanding in major cities, laying the groundwork for a larger transition. Complementing this gradual adoption, government policy aims at increasing the share significantly by 2030.

Experts estimate that even a 30pc adoption of electric vehicles could reduce urban air pollution by nearly 20pc. EVs promise zero tailpipe emissions and, if paired with greener electricity generation, could signifi-

cantly improve air quality. Electric buses also offer a pathway to cleaner mass transit, lowering operating costs over time and benefiting millions of daily commuters.

Yet, this transition is not straightforward. Without cleaner and more stable energy generation, electrifying transport risks shifting emissions from roads to power plants. Affordability is another challenge. While financing schemes and subsidies exist to support EV adoption, most people remain unaware of them, and navigating these programmes can be difficult. Charging infrastructure, battery recycling and trained mechanics remain scarce.

BUILDING FOR PEOPLE: Technology alone will not solve Pakistan's mobility crisis. Electric buses, rickshaws and cars will fail if the infrastructure is inadequate. Climate-friendly transport must be built for people: it must reach every neighbourhood, be affordable, safe and reliable. Maintenance is as important as construction. Moreover, non-motorised options — walking and cycling — must be made viable. Continuous sidewalks, protected cycling lanes, and safe crossings are pre-

quisites. Compact urban planning that aligns housing, employment and transit reduces unnecessary commuting. Digital tools like real-time tracking apps and integrated ticketing can help, but only if the physical system works first.

Ultimately, climate-friendly transport in Pakistan demands a holistic approach. Cities must be redesigned to prioritise people over vehicles. Sidewalks need to be safe and continuous. Cycling lanes must be integrated and protected. Walking and biking must be viable alternatives for short trips. Housing, employment and transport planning must be aligned to reduce the need for long commutes. And, policy and investment must extend beyond short-term political cycles.

THE BROADER CASE: The economic case is compelling. Pakistan spends billions of dollars annually on fuel imports. Local manufacturing of electric bikes and buses can generate employment, while improved air quality can reduce medical expenses and may boost productivity. Time saved from shorter, more efficient commutes translates into tangible improvements in quality of life. But perhaps the most powerful argument is social and psychological. Imagine a Karachi where commuting does not feel like a daily battle, a Lahore or Multan where winter does not automatically bring smog alerts. These scenarios are not utopian fantasies; they are policy choices within reach if vision, investment and coordination converge.

THE CROSSROADS: Pakistan stands at a critical juncture. Urban growth is inevitable. The question is whether transport systems will evolve fast enough to support it sustainably. If we invest in climate-friendly, integrated and equitable mobility, our cities can become healthier, more efficient and more inclusive. The road ahead is crowded, but it is not closed. The choice is no longer whether or not Pakistan needs climate-friendly transport. It does. The question is whether or not Pakistan can move fast enough to build what is needed. The lives of millions, the health of the environment, and the economic resilience of cities depend on this very point.

The writer is a climate activist.





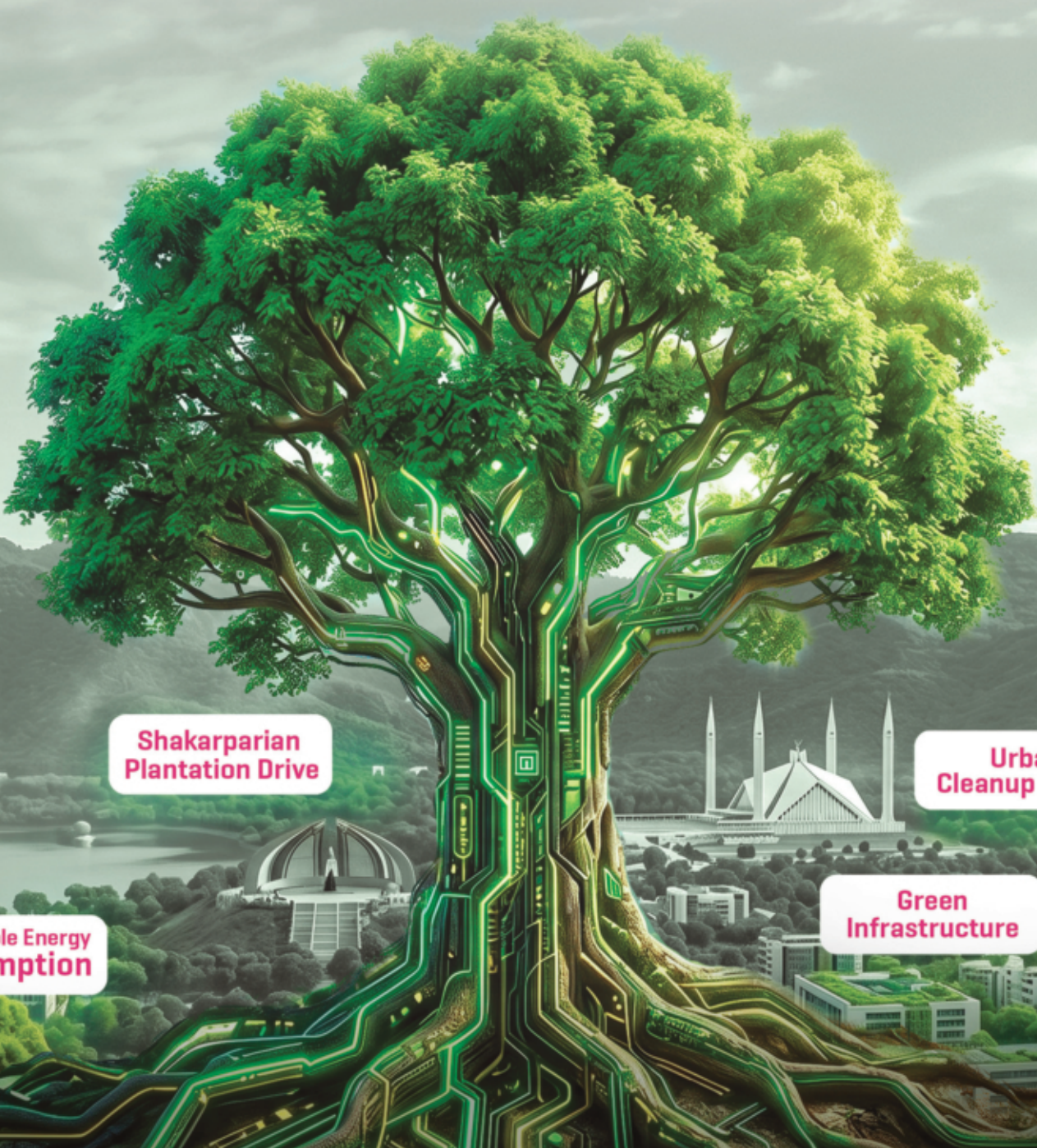
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HARVESTING CARBON SINKS CAN CHANGE THE COUNTRY’S CLIMATE NARRATIVE, BELIEVES MASOOD LOHAR

A WORLD OF GREEN GOLD

PAKISTAN is often portrayed as a climate stricken nation — responsible for less than one per cent of global emissions, but repeatedly battered by the consequences of a warming planet. From the furious floods of 2022 to the smog that blankets its cities each winter, the country has long stood on the frontlines of climate volatility. But beneath this familiar story, a quiet transformation is underway. In the mudflats of the Indus Delta, in the high forests of the north, and across the wetlands and farmlands of the plains, Pakistan is beginning to understand something profound: its greatest defence against climate change is also its most valuable economic asset. Its natural carbon sinks. A carbon sink — whether a forest, mangrove, wetland or soil system — is a living reservoir that absorbs more carbon than it releases. For a country struggling with fiscal pressure, these sinks are nothing short of a green goldmine. Managed wisely, they can turn Pakistan’s ecological strengths into a multi-billion dollar revenue stream, offering both environmental protection and economic revival.

THE MANGROVE MIRACLE: Along the southern coastline lies Pakistan’s most celebrated climate success story. The Indus Delta hosts the world’s largest arid zone mangrove forest — a resilient ecosystem that has become the heart of the Delta Blue Carbon (DBC) project. Mangroves are extraordinary. They store carbon at rates far higher than tropical forests, and they do it while protecting coastlines from storms and erosion. The DBC project, spread across 350,000 hectares in Sindh, has already demonstrated that blue carbon is not just good ecology — it is good economics. It has generated tens of millions of dollars in revenue through the sale of carbon credits, with long-term projections running into the billions.

The recent success of the massive mangrove plantation at the Clifton Urban Forest also shows a greater promise for the future, where certain landscaping and earthwork can lead to massive mangrove plantation all along the Karachi coast.

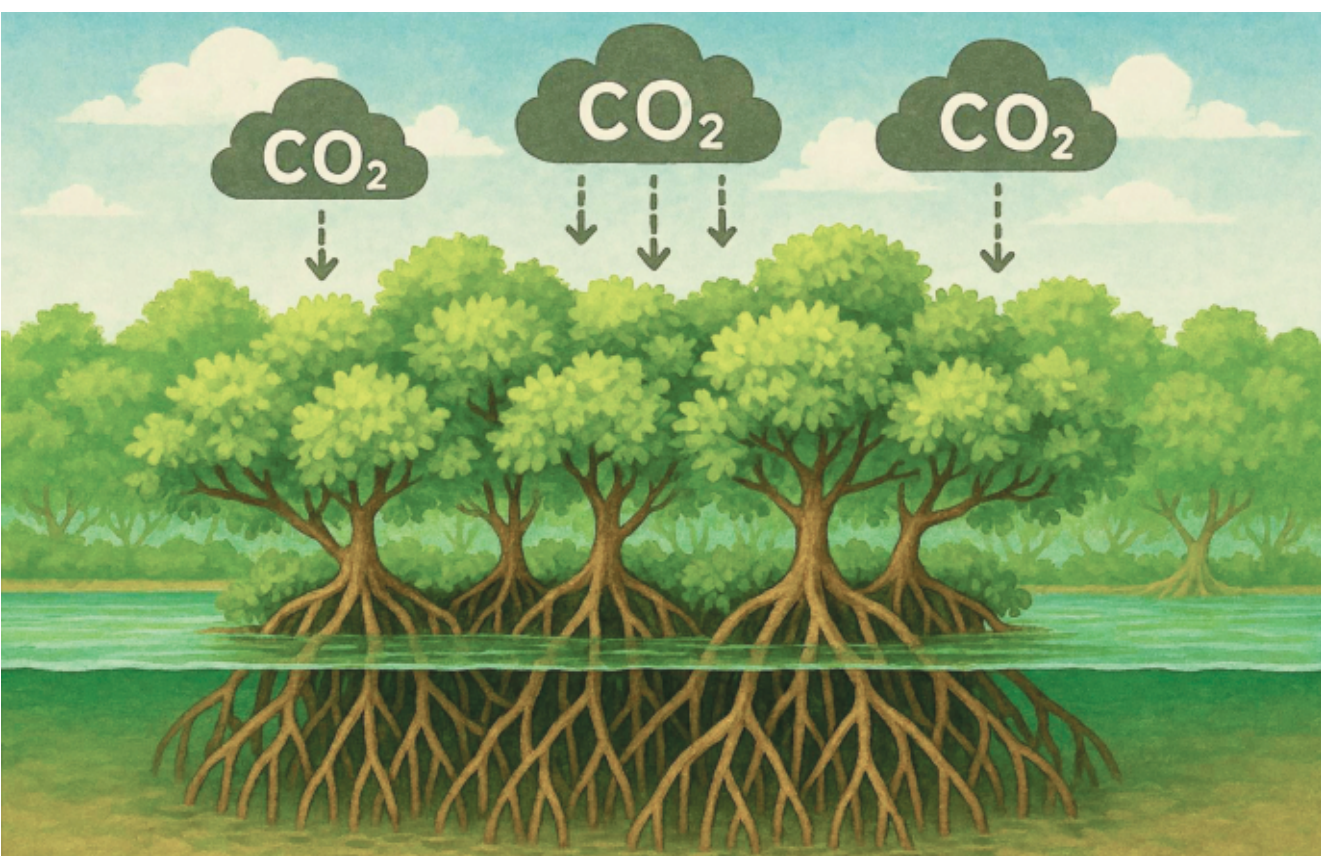
GREEN CARBON: While Pakistan’s

south draws strength from the sea, the north draws it from the mountains. The forests of Khyber Pakhtunkhwa (KP) and Gilgit Baltistan (GB) hold the bulk of Pakistan’s terrestrial carbon reserves. Recent assessments in KP have identified millions of hectares of forestland capable of storing hundreds of millions of tonnes of carbon. The province’s first Forest Carbon Credit Mapping Report estimates that carbon credits from these forests could generate billions of dollars over the coming decades. In GB, the focus is on protecting primary forests through programmes under the Reducing Emissions from Deforestation and Forest Degradation (REDD+) umbrella. The region is also exploring carbon credits from renewable energy by replacing diesel generators with solar power — turning avoided emissions into tradable value.

THE CARBON RAINBOW: Pakistan’s carbon potential extends far beyond forests and mangroves. The country is now exploring what some call the ‘carbon rainbow’ — a spectrum that includes wetlands and agricultural soils. Pakistan hosts more than a couple of hundred significant wetlands. These wetlands are powerful carbon sponges, but many are threatened by pollution and encroachment. Restoring them would not only strengthen biodiversity — protecting migratory birds and species — but also unlock new streams of carbon revenue.

Agriculture offers perhaps the most overlooked opportunity. Regenerative farming includes no till practices, cover crops, improved soil management, and the use of biochar, which is a stable, carbon-rich charcoal produced by heating biomass. Through these practices, the vast plains of Punjab and Sindh may become enormous underground carbon reservoirs. Even modest adoption could generate hundreds of millions of dollars annually while improving soil health and resilience.

POLICY AND TRANSPARENCY: Turning natural beauty into a tradable asset requires more than ecological potential — it demands a strong legal and technical framework. For years, Pakistan lacked the regulations needed to participate confidently in global carbon markets. That changed with the approval of the National Policy Guidelines for Trading in Carbon



Markets. These guidelines establish how Pakistan will engage with international buyers and how revenue will be shared among federal institutions, provinces and the national climate fund. A dedicated adjustment fee ensures that benefits flow across the system rather than concentrating in a single tier of government.

But the real currency in carbon markets is trust. Buyers want high integrity credits backed by rigorous monitoring. Pakistan is now investing in satellite tracking, drones and blockchain based registries to ensure that every tonne of carbon claimed is real, permanent and independently verifiable. This shift towards transparency is essential for competing in a tough market.

THE ECONOMIC ENGINE: The numbers are staggering. Pakistan has the potential to generate tens of millions of tonnes of tradable carbon credits every year. At current market prices, this translates into hundreds of millions dollars in revenue.

For a country accustomed to seeking external loans to bridge fiscal gaps, carbon finance offers something radically different: a non-debt-creating source of foreign exchange. It is a payment for a global service that Pakistan’s ecosystems already provide.

THE ROAD AHEAD: The promise is enormous, but the path is not without obstacles. Provincial institutions still need serious capacity-building, and Pakistan must invest in training carbon accountants, auditors and verifiers who can meet international standards. Climate change itself adds another layer of uncertainty — forest fires, droughts and extreme weather events could erase years of stored carbon in a matter of days.

Equity is just as critical. As carbon becomes a commodity, the communities who have protected these landscapes for generations must remain at the centre of the benefits. Around the world, poorly governed carbon markets have sparked

a backlash. In Kenya, for example, indigenous communities recently accused foreign carbon companies of coercion, land pressure and opaque contracts — an episode that critics have described as ‘blood carbon’. Pakistan must avoid repeating such mistakes.

Pakistan’s climate narrative has long been one of vulnerability. But the rise of its carbon sinks offers a new story — one of resilience, innovation and leadership. By valuing and protecting its natural assets, Pakistan can shift from being seen as a climate victim to becoming a global solutions provider.

The green gold is already here. With political will, scientific rigour and community partnership, Pakistan can transform its ecological heritage into its most enduring economic legacy.

The writer is a climate journalist and founder of the Clifton Urban Forest.

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NATIONAL POLICY RESPONSES ONLY RESULT IN ENHANCED LOCAL RISKS, WARNS IMRAN SAQIB KHALID

CLIMATE-SMART REFORMS

IN Balochistan, during a provincial food security initiative, a seven-year-old girl was given a food box at school. Instead of opening it, she placed it in her bag and said she would take it home for her younger sister who had nothing to eat. This single moment captures the human dimensions of food insecurity better than many policy statements. It also captures an important policy truth: food insecurity is not only about production. It is about how climate stress, weak governance and unequal access to support are experienced across households.

Nowadays, Pakistan's food security challenge is often framed as a climate problem. That is only partly correct. Climate change is intensifying stress across agriculture, but the scale of the crisis is being shaped by weak institutions, policy incoherence and a political economy that continues to reward short-term extraction over long-term resilience.

This challenge cuts across the full agricultural landscape. It affects canal-irrigated farming systems in Punjab and Sindh, riverine and deltaic zones as well as rain-fed areas in Potohar and Khyber Pakhtunkhwa (KP), dryland systems in Balochistan and interior Sindh, and glacier-fed farming systems in the northern area.

Climate change is functioning as a stress multiplier within an already unequal agrarian structure. Smallholders, tenants and women farmers remain more exposed because they have fewer assets, weaker access to formal services and less room to absorb losses. When a crop fails or livestock die, they are more likely to rely on debt, distress sales or reduced consumption. Adaptation policy that does not address these structural inequalities may improve selected practices, but it will not reduce vulnerability at scale.

Water governance sits at the centre of this problem. Yet, irrigation remains inefficient, groundwater extraction is weakly regulated, and politically difficult reforms are repeatedly postponed. This is not because the problem is poorly understood. The state is aware of canal losses, wasteful irrigation practices and pressure on aquifers. What it has not done is to align policy incentives with hydrological reality.

We continue to protect production systems that are inconsistent with water availability. Sugarcane is the clearest example. The point is not to blame farmers for growing what the system rewards. It is to recognise that the state continues to support patterns of production that deepen water stress, and then presents the consequences as unavoidable scarcity. Unfortunately, the same problem appears in the debate on crop diversification.

This is why climate-smart agriculture is often misunderstood in Pakistan. It is treated as a collection of practices rather than as a restructuring of the agricultural policy environment. Improved seed, better irrigation, conservation agriculture, agroforestry, crop rotation and integrated pest management are all important. But adoption depends on whether farmers are able to take on the risk of change. Where water is underpriced, markets are distorted and extension is weak, climate-smart agriculture remains confined to pilot projects and donor-supported demonstrations.

Climate-smart agriculture works when institutions lower the cost and risk of transition. The lesson for Pakistan is not that foreign models should be copied directly. It is that adaptation cannot be built on fragmented governance and policy formulation alone. In Pakistan, indigenous systems of water and land management have often been more closely aligned with ecological limits than the policies that replaced them. The karez systems of Balochistan are one example. These were not simply traditional technologies. They reflected a collective logic of groundwater use that limited over-extraction and distributed access through shared management. Their decline was the outcome of policy choices that encouraged private pumping.

A similar lesson can be found in mountain areas and rain-fed zones. In the northern valleys, local water-sharing systems, such as kuhls in Gilgit Baltistan (GB), built around community rules and labour, have long helped manage scarcity. In barani areas, farmers continue to rely on fine-grained knowledge of soils, slope, moisture and local weather signals when making decisions about sowing and inputs. Such knowledge is not a substitute for science, but neither should it be ignored.



Climate-smart agricultural policy should build on practices that already work under local conditions.

This brings the discussion directly to agricultural extension. If there is one institution that should anchor climate adaptation in agriculture, it is the extension system. That is where scientific knowledge, local conditions and farmer decision-making should meet. Yet, extension in Pakistan has been allowed to weaken to the point that it often cannot perform this role effectively. Departments are under-resourced, staffing is uneven, field outreach is limited, and institutional priorities are often administrative rather than problem-solving. This is one of the main reasons adaptation remains thin on the ground.

Pakistan has treated extension as a residual service when it should have been treated as core climate paradigm. A more serious adaptation strategy would treat universities and research bodies as operational partners in resilience planning, not simply as producers of technical outputs.

Climate adaptation in agriculture requires working links between research, irrigation, extension, local government, disaster risk management and rural finance. Yet, these sectors continue to operate on separate administrative tracks. Coordina-

tion is often discussed, but rarely institutionalised. Local government is the weakest link in this chain since climate impacts are experienced locally. Federal government or provincial departments cannot manage local micro-level tasks effectively from a distance. However, local governments continue to be treated as political orphans. This has direct consequences for equity.

The small farmer must remain at the centre of policy design. Climate-smart agriculture that is accessible mainly to larger landholders will not resolve food insecurity. A policy framework that claims to build resilience while reproducing exclusion is not adaptation. It is selective delivery. Pakistan already has many of the elements needed for a stronger approach. Farmers are observing climatic shifts and adjusting practices. Researchers are generating useful knowledge. Some provincial and local programmes have produced practical lessons. What is missing is not awareness. It is the willingness to confront politically protected inefficiencies, invest in public delivery systems, and devolve real authority to local institutions. A more serious agenda would begin with five changes. Water governance must be treated as a political reform issue, not only a technical one. Cropping incentives must

be aligned with ecological limits, especially in water-stressed zones. Agricultural extension must be rebuilt as a core climate institution. Universities and research bodies must be integrated into local and provincial adaptation systems. And local governments must be given stable authority, resources and clear mandates to act as frontline institutions of resilience.

This approach should underline how Pakistan governs and associates itself with agriculture. The country needs a shift from paper-adaptation to on-ground, governed adaptation. Until that happens, climate-smart agriculture will remain narrower than the challenge it is meant to address, and food insecurity will continue to deepen through a system that still confuses policy presence with policy performance. The cost of that failure is visible not only in damaged crops, weak irrigation systems and falling water tables. It is also visible in the quiet decision of a seven-year-old child who takes her school food box home because her younger sister has nothing to eat.

The writer works on the intersection of climate, water, ecology and society. He can be reached at: imranskhalid@gmail.com



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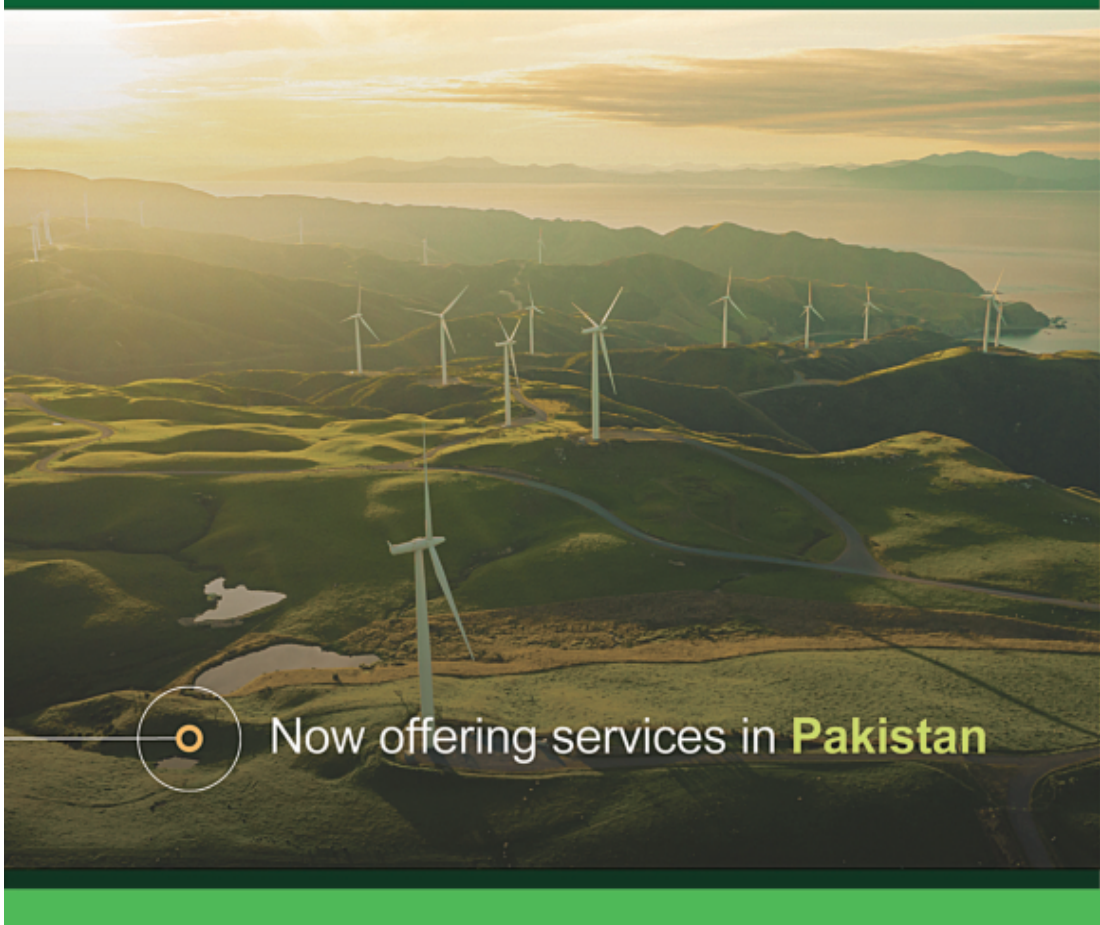
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WE NEED TO SOMEHOW MAKE OUR MARINE CONSERVATION ENDEAVOURS SUCCEED, WRITES AYAZ KHAN

IGNORING THE INEVITABLE

ASTONE with nail-like sharp edges lying 20-60 feet beneath the sea around Churna Island — locally called ‘kumcha’ — has been one of the annoying issues that fishermen curse as an enemy which often traps and tears apart their fishing nets. These ‘kumcha’ stones, when put into scientific jargon, actually refer to corals scattered across the core zone of Churna Island, a highly sensitive area in terms of biodiversity importance demarcated by the managing authorities around a marine protected area (MPA). Churna is Pakistan’s second biodiversity hotspot which was declared an MPA in 2025. Rising global temperatures have put areas in oceans harbouring a rich biodiversity under immense stress, and destructive human activities have made the situation worse, warranting due action to protect them.

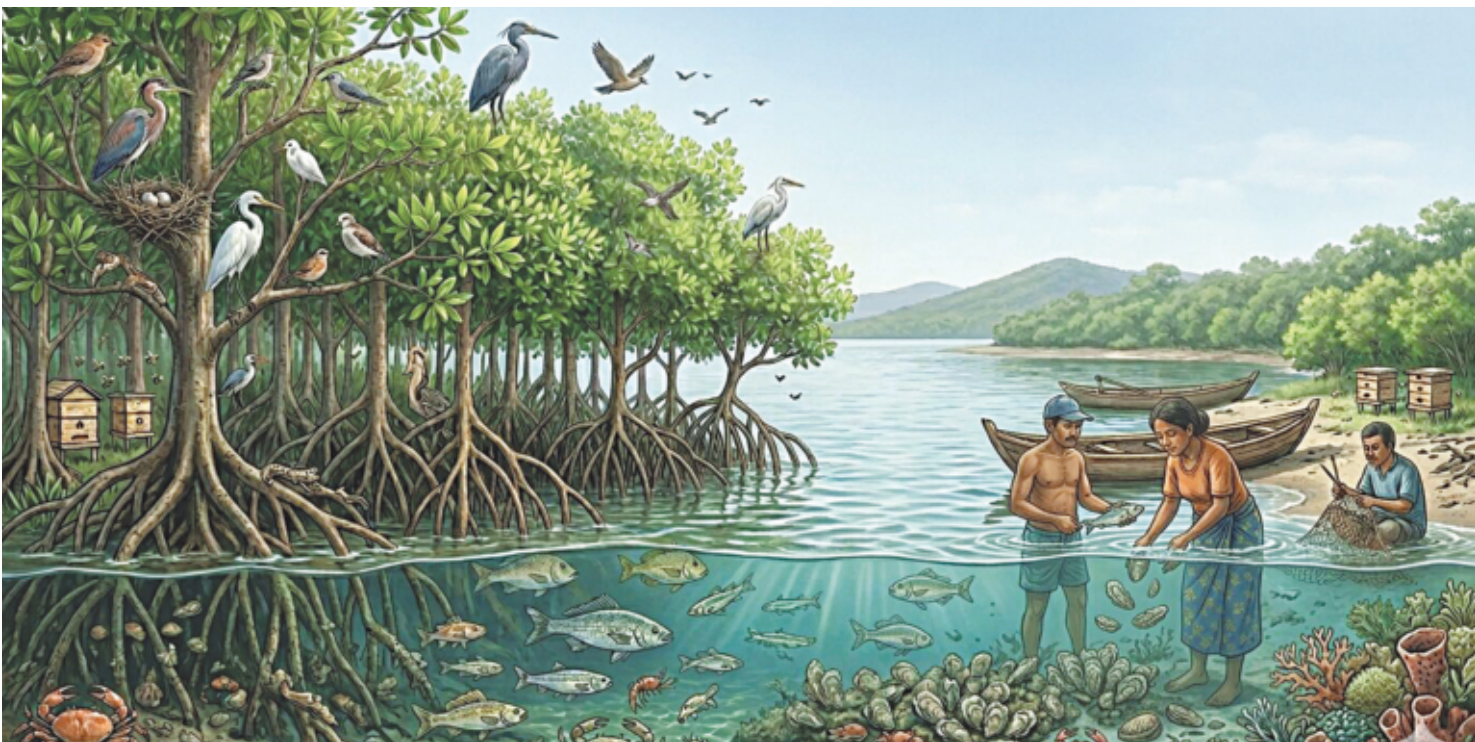
Measured by any yardstick, ‘kumcha’, a Balochi term, has traditionally linked the corals to a foe that hampers fishing activities carried out by the local fishermen. This has long shrouded the significance attached to the corals, enabling an enriched biodiversity sustaining a host of fish species that in turn bolster livelihoods for the local community.

However, declaring MPAs and demarking core and buffer zones — merely on maps — to curtail destructive human activities and safeguard biodiversity hotspots without effective community engagement remain a futile endeavour, hindering success in sustaining the protections mandated under the relevant MPA management plans. Given this crucial aspect, lack of community engagement, led by a severe absence of basic understanding among community members about MPAs and the essential species inhabiting the areas, can stymie Pakistan’s efforts in managing these biodiversity-enriched areas.

LOCALS AND THE PROTECTED AREAS: All the three of Pakistan’s MPAs are located on the coast running along Balochistan, a province that trails other provinces in terms literacy and development. This adds another daunting layer to the sustainable management of these areas. The three MPAs differ from each other in terms of biodiversity that lies beneath the waters or around them, thus needing different approaches in management. Astola Island has both terrestrial and oceanic importance as it harbours a host of coral species and has been home to a vast majority of avian population, both migratory and local. Churna, on the other hand, has a thriving species of corals and fish, and a small reef formation, adding more value to its biodiversity significance. Finally, Miani Hor lagoon is home to rare oceanic mammals, birds and mangrove forest — comprising three mangrove species: *Avicennia marina*, *Rhizophora mucronata* and *Cecropia tagal*, the latter two being extinct elsewhere in Pakistan.

Both Churna and Miani Hor have local populations inhabiting around them, thus making community-led initiatives inevitable to cope with entrenched issues, such as destructive fishing and harm to important coral colonies. What makes a community-led approach more pressing is the lax policy-making process, as it took the country more or less eight years to enact a feasible management plan for Astola Island. If an honest estimation is put forth, it may take another decade, if not decades, for the country to bring in management plans for managing the two other MPAs.

Since the country is slow to come up with management plans, an effective way forward is to hand over responsibilities — as deemed



appropriate in the context of each MPA — to the local communities.

MARINE CONSERVATION: It is a globally established phenomenon that declaring MPAs gives birth to apprehensions among local communities relying on inshore or offshore marine areas for their livelihoods. And, MPAs in Pakistan are no exception on this count. However, Pakistani fishermen, to begin with, are completely divorced from the term MPA, and even if they do have some inkling of the initiative, their apprehensions quadruple regarding the restrictions that are to be imposed after conservation of biodiversity in the protected areas begins. Moreover, they see in the effort a move to deprive them of their ownership of the area that they have been historically privileged to. To fill this vacuum and to address the concerns among the local populations, the concept of locally led marine conservation remains a vital approach to the phenomenon.

The core element in this phenomenon is the handing over of conservation responsibilities to the local populations. In the context of MPAs along the coastal belt of Balochistan, community-based awareness campaigns are the cornerstone to build an informed group of local people having an equal participation of women. This includes educating the group through instilling basic knowledge among the individuals by connecting scientific importance to traditional and indigenous knowledge about the thriving species of corals or mangroves, including fish.

For instance, instead of educating them about what corals are, they should be told what ‘kumcha’ is and what scientific name and importance it carries, further informing them how to disentangle the nets once they get stuck around corals instead of destroying the entire col-

ony; a practice the fishermen often indulge in to get their nets disentangled. The group then should pass this knowledge gradually to the community at large. Once the snowball effect takes momentum, they should be educated on core zones (no-take) and buffer zones (partially allowed for human activities), as this increases fish catch they solely rely on for livelihoods.

Pakistan can take cue from Kenya’s Kuruwitu community members who remained concerned about growing degradation of their seas before they formed the Kuruwitu Conservation and Welfare Association (KCWA) in 2003. In 2005, the KCWA members decided to set aside 30 hectares of marine area for conservation, and in a span of just 12 years, the community witnessed a remarkable increase in their fish catch. Today, the members of the Kuruwitu community mingle with other coastal communities to share their knowledge and experience.

Such groups can be invited to join local populations in Pakistan to enhance the understanding of the locally led marine conservation efforts. Pakistan already has a co-management method in place to manage protected areas: a joint move that includes local people, non-governmental organisations (NGOs) and government representatives.

Instead of having more work on paper rather than on the ground, Pakistan needs to climb down the paperwork ladder if it truly needs its marine conservation endeavours succeed. This would translate into a win-win situation for both biodiversity conservation and the people relying on them to sustain their lives.

The writer is member of staff covering oceans in Pakistan and across South Asia.

A LOPSIDED EQUATION

CONTINUED FROM PAGE 3

glaciers are retreating, simultaneously triggering glacial lake outburst floods in the north today and, over the longer term, threatening the dry-season river flows on which 80pc of irrigated agriculture depends. Floods today, water scarcity tomorrow: two faces of the same crisis.

The monsoon, once the organising rhythm of Pakistan’s agricultural calendar, has become erratic and violent — arriving in concentrated, devastating bursts or failing to arrive at all. The 2022 floods affected 33 million people and caused \$30 billion in losses. Recurrent flooding in 2025 confirmed that nothing structural has changed. Prolonged droughts in Balochistan and Sindh are driving displacement and deepening cross-border water tensions with Afghanistan and India. The 1991 Apportionment Accord governs a river system that climate change has fundamentally altered.

The coastline is retreating under accelerating

sea-level rise, storm surge, and saltwater intrusion. Mangroves that once absorbed the majority of cyclone energy along the Karachi coast have been cleared. The Indus Delta has contracted severely. Per capita water availability has fallen from 5,260 cubic metres in 1951 to approximately 1,000 cubic metres today, placing Pakistan at the threshold of absolute water scarcity.

Four crises — political rupture, military displacement of the climate agenda, accelerating warming and ecological collapse — are not parallel phenomena. They are one system of causation, activating the tipping points. Pakistan absorbs the consequences of decisions made elsewhere. Time is running out — faster than the models predicted, in a political environment more hostile than any since the UNFCCC was founded, for a country that did nothing to deserve what is arriving.

The writer represents Pakistan on the International Board of Fund for Responding to Loss and Damage.

A DAUNTING CHALLENGE

PAKISTAN’S third Nationally Determined Contribution (NDC), submitted to the UNFCCC in September 2025, is the most detailed and ambitious climate plan the country has produced. NDC 3.0 commits to a 50 per cent reduction in economy-wide greenhouse gas (GHG) emissions by 2035 against business-as-usual projections: 17pc unconditional from domestic resources, 33pc conditional on international grant finance. It integrates the National Adaptation Plan for the first time, sets targets of 60pc renewable energy and 30pc electric vehicles by 2030, incorporates a Climate Change Gender Action Plan, and a loss and damage assessment mechanism. For the first time, it acknowledges the need for multi-level governance coordination. The total investment requirement is \$565.7 billion, including \$139.1 billion for disaster risk preparedness and \$89.5 billion for water security — a four-fold increase from the \$40 billion sought in 2016 and one of the largest financing demands submitted by any developing country in the current round of global pledges.

NDC 3.0 is a sophisticated and serious document. It is also at a serious risk of following its predecessors into the archive of well-intentioned commit-

ments that changed little on the ground. The barriers are structural, fiscal, constitutional, and political. They demand urgent policy reform.

The constitutional faultline: The 18th Amendment devolved agriculture, water, irrigation, land use, forestry, environmental protection and disaster management to the provinces — sectors accounting for over 90pc of the required NDC actions. Federal ministries have pledged targets they have no constitutional authority to implement. No provincial NDC has been mandated, and no provincial action plans have been developed. The parliamentary gap: About 15 years after the 18th Amendment, parliament has yet to pass legislation mandating provincial NDCs, assigning the Council of Common Interests (CCI) a standing climate mandate, or compelling the provinces to align development spending with national commitments.

The fiscal disconnect: Provincial development budgets total Rs2,869bn in 2025-26, nearly three times the federal PSDP. The NFC Award formula governing these transfers contains no climate variable. Provinces receive substantial resources, with no obligation to align them with NDC targets.

The PC-1 bypass: The Plan-

ning Commission notified climate risk screening guidelines in June 2024. All 56 federal development projects reviewed for 2024-25 used old templates without screening. The reform was notified and then systematically ignored.

The sectoral ministry silo: Every line ministry must mainstream climate into planning and budgeting for NDC targets to be real. None has done so systematically. The Ministry of Energy remained locked in fossil fuel capacity payment obligations, while Pakistan’s largest-ever private climate investment, the rooftop solar revolution, unfolded without policy design.

The private-sector absence: Private investment accounts for just 5pc of Pakistan’s climate action funding. No regulatory requirement compels banks to assess climate risk. No enforceable climate-proofing standard governs construction. De-risking instruments are too limited to attract sustained private capital. The international finance gap: Pakistan’s adaptation finance gap is 16 times the actual inflows. The \$464 billion conditional component — 82pc of the total requirement — depends on a multilateral system under its deepest stress since the UNFCCC was founded, as donor governments cut climate finance to fund defence spending.

NDC 3.0 describes where Pakistan needs to go. The barriers describe why it is not getting there. — *Ali Tauqeer Sheikh*



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THE YOUNG ARE THE REAL STAKEHOLDERS IN THE FIGHT AGAINST CLIMATE CRISIS, ARGUES ZUNAIRA QAYYUM

THE POWER OF THE YOUTH

CLIMATE change is not anymore a concept that is vague in nature. It has become a reality for economies, societies and even individuals all around the globe. The effects of climate change are even more pronounced in a developing country, like Pakistan. Being one of the top 10 countries that are facing severe consequences of climate change, the country suffers from various environmental, economic and social problems because of climate change. Out of this adversity, the youth of Pakistan is probably the most affected. The young are facing the consequences already, just as anybody else in the country today, but they are the ones who are bound to face this across their lives going forward. This makes them a serious stakeholder in this critical context.

Though being responsible for only slightly above one per cent of GHG emissions, Pakistan is disproportionately hit by climate change. Nevertheless, amidst such a difficult situation, there exists great potential. Pakistan has a relatively young population, with about 64 per cent of the citizens being below the age of 30 years. This implies that the youth are not only the most affected, but they are also the best change-agents in Pakistan. In various parts of the country, the young have taken charge of dealing with climate change issues.

The young play an essential role in climate change activism in Pakistan through different ways. For instance, in harsh environments, such as Balochistan, which experiences tough environmental conditions, they have taken up tree plantation activities as part of fighting desertification and environmental degradation. Apart from on-ground activities, young Pakistanis are employing digital technology in the fight against climate change. Social media platforms have emerged as key players for climate campaigning as they provide the youth with means to reach a wider audience and build up communities. The use of various social media platforms to spread the word about ways in which individuals can be more sustainable, such as saving water, reducing waste and embracing renewable energy, is common practice.



Furthermore, young Pakistanis are involved in community-building activities aimed at educating local communities on climate issues. Workshops are held on composting and sustainable agriculture in cities and rural areas. Such workshops serve not only as means of raising awareness regarding local issues, but they are also as opportunities to give the locals practical skills that will help them cope with the effects of climate change. For example, climate-smart farming methods have been introduced to farmers in order to increase productivity.

Furthermore, young Pakistanis are becoming active in the domains of policy-making and systemic changes. Student organisations, youth movements and advocacy groups are campaigning for the incorporation of climate education in the country's curriculum. Climate change education that incorporates a range of topics, such as renewable energy sources and environmental studies, will be crucial for addressing the issue in the coming years. As young people get involved in consultations and discussions with politicians, they can ensure their opinions are heard.

However, the influence of young Pa-

kistanis on climate change cannot be attributed only to raising awareness and implementing educational programmes. In many cases, youth-led initiatives aim at promoting inclusiveness and justice by focusing attention on underrepresented groups. For example, due to specific circumstances, the involvement of women in agricultural activities and water management in rural areas is common. In such a way, youth-led projects are trying to contribute to efforts to build the resilience of local communities. In addition, young people in Pakistan have become active participants in climate-related international conferences, thereby raising awareness about their experiences at international forums. By taking part in events, such as COP and other international forums, young Pakistanis are underlining the importance of combating climate change in developing nations. The involvement of young people in such forums also allows them to benefit from sharing experiences and knowledge, and to contribute to strengthening the unity of efforts in overcoming a global problem.

International cooperation and exchange of knowledge play an especially vital role for a nation like Pakistan since it faces

environmental problems that can be observed in other regions with similar climatic features. By familiarising themselves with innovative practices in other areas of the globe, including techniques of water harvesting and models of renewable energy production, Pakistani youth can implement successful solutions to environmental problems back home.

Notwithstanding the positive trends, however, there exist some major obstacles that hamper efforts to fight the climate crisis. Firstly, resource constraints, insufficient institutional support, and lack of proper financing can impede the efficiency and sustainability of youth-led initiatives. Secondly, there is an urgent need to create a more coordinated cooperation among governmental agencies, civic organisations and youth entities to facilitate greater impact on policy-making processes.

Educational and awareness-raising efforts should be prioritised as well. Although young people in Pakistan are trying to advocate for climate literacy, they are still facing a severe deficiency of relevant educational programmes. It is necessary for both the government and the corporate sector to make efforts to some-

how overcome the relevant issues, and to promote the process of integrating climate education into standard curricula.

In addition to advocacy and education, innovations by young Pakistanis have become a key motivator for climate action in recent years. Young entrepreneurs, students and environmentalists in Pakistan are creating cost-effective innovations specific to their region, including renewable energy solutions for communities lacking energy infrastructure; water filtration technologies for safe consumption; and biodegradable substitutes for plastic packaging.

Additionally, many young innovators are using digital platforms and apps to spread information about climate issues. All these innovations not only allow you to address environmental issues in the community, but also to provide new economic and development opportunities. Innovations by young Pakistanis show that effective solutions to environmental issues are possible not necessarily through substantial financial investments. What makes young innovators successful is their ability to combine modern technologies with the traditional knowledge of their communities and their own experiences.

One should stress that the climate crisis in Pakistan is simultaneously a great challenge and a unique opportunity. On the one hand, the country experiences serious environmental risks, while, on the other, it benefits from having a highly engaged young generation of active leaders and advocates. The efforts of young Pakistanis, whether it be local projects or global advocacy initiatives, prove that there is scope for change when knowledge, zeal and activism come together. In order to bring about a change of this kind, however, it is important to equip young people with the tools necessary to make their work bigger than ever before. In the light of this mounting climate emergency, the voice of Pakistani youth serves as an inspiration and a roadmap to success. It becomes imperative that we invest in such efforts by our young to fight against climate change.

The writer is a 14-year-old climate and youth empowerment advocate working to amplify young voices and drive action on climate change and mental health.

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PAKISTAN’S CORPORATE SECTOR HAS TO STEP UP ITS GAME FOR THE LARGER GOOD, SUGGESTS DR ZEELAF MUNIR

FUNDS MORE THAN AMBITION

PAKISTAN has become more visible in global climate conversations. Targets have been articulated. Frameworks have been updated. The language of transition now appears regularly in policy and corporate discourse. The harder question is whether or not the country is financially equipped to deliver what it has promised. That question feels more pressing now in 2026.

In March, the State Bank of Pakistan (SBP) kept the policy rate unchanged at 10.5 per cent and explicitly cited the war in the Middle East as a source of higher fuel prices, freight costs and insurance costs. February inflation had already risen to 6.98pc year-on-year, while inflation for March was expected to remain in the 7-8% range, reflecting continued pressure from fuel prices, freight costs and external volatility. In an economy that imports energy and remains sensitive to external shocks, these pressures directly translate to higher borrowing costs, tighter liquidity and reduced room for long-horizon investment. As a result, climate conversations become more acute.

Climate transition requires capital. Renewable energy, water resilience, industrial decarbonisation, urban adaptation and disaster preparedness all depend on upfront financing, stable policy signals, and credible execution structures. Pakistan’s own climate plans now reflect the scale. Pakistan’s Nationally Determined Contributions (NDC 3.0) under the Paris Agreement, commits to reducing projected emissions by 50pc by 2035, with 17pc to be achieved domestically and 33pc conditional on international support. The same submission estimates climate finance needs at \$565.7 billion through 2035. Progress remains uneven. While renewable capacity has expanded and policy frameworks have evolved, financing, project readiness and execution continue to lag behind the scale required to meet these targets.

The wider financing gap is also substantial. The World Bank’s Pakistan

Country Climate and Development Report estimates around \$348 billion in climate and development investment needs between 2023 and 2030. The same report warns that climate and environmental risks could reduce Pakistan’s gross domestic product (GDP) by 18-20pc by 2050. The issue, as such, is not a shortage of ambition. It is whether the financial and institutional machinery exists to convert ambition into projects that can actually move.

Pakistan’s targets span far more than headline emission numbers. NDC 3.0 reiterates the country’s 60pc renewable energy target by 2030 and links climate strategy to adaptation priorities across water, agriculture, health, ecosystems, cities and disaster preparedness. These are not peripheral development issues. They sit within the core questions of growth, productivity and economic resilience. Yet, climate delivery still tends to stall at a familiar point; execution.

Finance plays a central role in this regard. Projects may have policy relevance and technical merit, but investors and lenders focus on different questions. How is the risk divided? Is disclosure reliable? What about currency exposure? And, perhaps most importantly, will it actually be delivered?

In a high-rate, risk-sensitive environment, weak structuring can quietly derail projects. This derailment is not always through outright rejection, but through slower approvals, higher costs, reduced investor appetite, and stricter scrutiny on disclosure and governance. This is increasingly how global capital works, especially in emerging markets. Climate readiness is starting to overlap with financial stability.

Other Asian economies are moving faster in building that architecture. Vietnam, for instance, initiated Green Taxonomy in 2025, giving lenders and investors an official classification framework for green economic activity. Besides, India has moved listed companies further towards the Environmental, Social and Governance (ESG) framework, and sustainability disclosure requirements even as im-



plementation timelines continue to evolve. Also, Bangladesh’s financial system has built concessional windows and refinancing schemes for sustainable finance, while its export sector, especially garments, has used green-factory certification to strengthen buyer confidence and global positioning. These examples differ in approach, but they point in the same direction: climate ambition becomes credible when it is backed by financial frameworks, disclosure discipline, and institutional follow-through.

Pakistan has begun to build parts of this ecosystem too. The government has introduced the Pakistan Green Taxonomy, and the SBP has directed banks and development finance institutions (DFIs) to use it as a reference point for green banking policies. A taxonomy goes beyond defining what is ‘green’, and gives lenders, investors, companies and regulators a shared framework for identifying eligible activities, structuring financing products and directing capital more consistently. It also opens the doors for tools, like green bonds, green loans, transition plans, more credible disclosure practices, and ef-

forts to attract climate finance. This is where green finance becomes directly relevant to Pakistan’s climate agenda.

If projects are to move beyond announcements, they need to be structured with financing in mind from the outset. This means better project preparation, stronger disclosure, clearer use-of-proceeds frameworks, and wider use of mechanisms, such as blended finance, guarantees and risk-sharing structures, where appropriate. Green finance is one of the main channels through which climate policy becomes executable rather than a side conversation.

The government, of course, cannot do this alone; business institutions must play their role as well. The Centre of Excellence in Responsible Business (CERB), housed within the Pakistan Business Council (PBC), is already doing work that matters to this transition. Its climate-risk platform includes a Climate Change Readiness Study, a Climate Risk Awareness Toolkit, workshops in major cities, ESG resources, and guidance designed to help Pakistani businesses prepare for reporting in line with International

Sustainability Standards Board (ISSB) guidelines and international investment expectations.

This kind of capacity-building is directly relevant in a market where many firms still need practical support on risk assessment, disclosure, governance and transition planning. Social awareness and advocacy platforms, such as Breathe Pakistan, can make a difference. Their value lies in whether or not they can push the discussion beyond general commitments, and towards financing questions that actually matter: bankable pipelines, risk-sharing mechanisms, disclosure readiness, and implementation models that connect policy ambition with commercial reality.

This is precisely where the climate debate in Pakistan stands today. Pakistan’s climate ambitions continue to evolve. The real test is whether or not capital, policy and execution can move forward together and at the required pace.

The writer is Chairperson of the Pakistan Business Council (PBC) and Managing Director & CEO of EBM.



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Progress Review Report 2025-26

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 - Lower Tanawal Beer Valley (Abbottabad/Haripur)
- NEW BIOSPHERE RESERVES:**
- Gallies (Abbottabad)
 - Chitral Bashkar Garam Chashma



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Message of the Chief Minister, Khyber Pakhtunkhwa

FOR the Breathe Pakistan International Climate Change Conference, climate change is no longer a distant threat. It is a present and accelerating reality, reshaping ecosystems, economies, and human security across the globe. For Pakistan, and particularly for Khyber Pakhtunkhwa, these pressures are immediate and intensifying. Our province stands on the frontline of climate vulnerability, exposed to riverine floods, glacial lake outburst floods, urban flooding, heatwaves, prolonged droughts, and the growing spread of vector-borne diseases. The scale and frequency of these risks are projected to rise, demanding an urgent and systemic response.

Yet, vulnerability alone does not define us. Khyber Pakhtunkhwa has emerged as a leading example of environmental stewardship, demonstrating that even under fiscal and structural constraints, meaningful climate action is possible. Our forests are not simply natural assets, they are an ecological infrastructure that sustains biodiversity, regulates climate systems, and supports livelihoods.

Guided by the vision of Imran Khan, the government of Khyber Pakhtunkhwa has, since 2013, pursued an ambitious agenda to expand forest cover and restore degraded landscapes. Flagship initiatives such as the Billion Tree Afforestation Project and the Ten Billion Tree Programme have been central to this effort. Since 2017 alone, approximately Rs675 billion has been invested in forest conservation and expansion, resulting in a substantial increase in forest cover. Today, forests account for 26.7 per cent of the province's total land area, surpassing international benchmarks. Khyber Pakhtunkhwa is home to nearly 40 to 45pc of Pakistan's total forests, which absorb around half of the country's carbon emissions. Sustaining this ecological asset requires continued investment and strategic prioritisation, with annual financing needs estimated at approximately Rs322 billion.

We are now transitioning from conservation to a green economic model. Our objective is to align ecological preservation with economic opportunity by creating incentives for local communities, strengthening forest based livelihoods, and integrating carbon markets into development planning. The province's carbon credit potential is estimated at around Rs100 billion annually, underscoring the economic value of environmental stewardship.

In this context, there is a strong case for revisiting the National Finance Commission Award formula to incorporate environmental indicators such as forest cover and carbon credits, on the pattern of countries such as India and China, where weightage is already assigned to forested areas. Aligning fiscal transfers with ecological contribution is essential for sustainability at scale.

At the same time, climate action in Khyber Pakhtunkhwa is being pursued through an integrated policy framework. Our afforestation initiatives have laid the foundation, and we are expanding our focus to renewable energy, sustainable agriculture, clean industry, and urban resilience. Measures underway include the transition of brick kilns to cleaner technologies, formulation of an electric vehicle policy, deployment of air quality monitoring systems, and digitisation of environmental compliance. To strengthen implementation, we have adopted a province-wide Air Quality Improvement Action Plan supported by an institutional mechanism for accountability.

Our Provincial Climate Change Policy provides a roadmap for mitigation and adaptation across sectors, including infrastructure, water systems, public health, and local economies. Our commitment to clean energy is equally firm. Investments in hydropower and large scale solarisation of mosques, educational institutions, healthcare facilities, government buildings, and households are reducing emissions while expanding access to sustainable energy.

At the global level, climate change remains a defining challenge, and its resolution depends on collective action. Regions like ours contribute minimally to global emissions, yet face disproportionate consequences. This imbalance must be addressed through enhanced cooperation, climate finance, and technology transfer, consistent with the principles of the Paris Agreement.

The Breathe Pakistan International Climate Change Conference, organised by *Dawn* Media Group, provides a timely platform to advance this dialogue. By bringing together policymakers, experts, and innovators, it creates an opportunity to move from commitments to coordinated action.

Khyber Pakhtunkhwa stands ready to play its part. Our experience demonstrates that climate action, when anchored in political will and community partnership, can deliver measurable and scalable results. The task ahead is not to define the problem; it is to accelerate solutions. The choices we make today will determine the resilience of generations to come. We must act with clarity, urgency, and purpose.

Capital Smart Motors

AS global geopolitical tensions intensify and the climate crisis accelerates, Pakistan stands at a pivotal moment of transformation. The country's largest international climate conference, Breathe Pakistan — held under the patronage of *Dawn* Media Group which has selected Capital Smart Motors as its exclusive automotive partner. This collaboration not only acknowledges our leadership in sustainable mobility, but also creates new opportunities for local auto vendors and suppliers, reinforcing our commitment to the Government of Pakistan's goal of achieving 30 per cent electric vehicle (EV) sales by 2030.

This vision is led by Chairman Zahid Rafiq, whose leadership emphasises long-term environmental responsibility and industrial progress. Vice Chairman Jahanzaib Zahid ensures that mobility solutions align with national climate priorities. Under the direction of CEO Imran Zahid and COO Abid S. Usmani, Capital Smart Motors is actively advancing EV adoption, strengthening partnerships, and supporting Pakistan's green mobility agenda.

Our alliances with global automotive leaders such as Geely Auto Group, Dongfeng Forthing, and JMEV bring advanced technologies to Pakistan while fostering growth opportunities for local vendors. These partnerships are helping build a robust ecosystem that supports innovation, strengthens supply chains, and drives local vendor industry — positioning Pakistan's auto industry for a sustainable future.

The need for climate action is urgent. Rising temperatures, extreme weather, and resource constraints demand decisive responses. Pakistan, given its vulnerabilities, must lead proactively. Our efforts go beyond introducing electric vehicles; we are also investing in infrastructure, raising awareness, and advocating policies that accelerate adoption. These initiatives align with the government's Electric Vehicle Policy 2030, making sustainable mobility a key driver of national development and industrial expansion.

In a time of global uncertainty and energy insecurity, electric mobility offers Pakistan a path towards resilience and independence. Reducing reliance on fossil fuels strengthens local industries, empowers communities, and contributes to global environmental goals. Capital Smart Motors remains committed to leading this transition, fostering innovation, and unlocking opportunities for the country's automotive sector.

Breathe Pakistan represents more than a conference; it is a call to action. As its exclusive automotive partner, Capital Smart Motors is dedicated to driving progress, encouraging collaboration, and shaping a cleaner, more sustainable future for generations.

Coca-Cola

WATER is essential for people and ecosystems and is the main ingredient in most of our products. We aim to promote water stewardship within our business to increase water use efficiency and treat and return safe water to communities.

Water stewardship at Coca-Cola is rooted in the belief that lasting water security depends on restoring the ecosystems that sustain it. Since 2015, the Company has met or exceeded its global Water Replenishment goal — returning more than 100 per cent of the water used in finished products, on an aggregate level, back to nature and communities. This progress is achieved through collaboration with The Coca Cola Foundation, bottling partners, suppliers, and implementation partners worldwide.

In Pakistan, this global commitment is reflected through integrated, locally relevant programmes that address growing risks from floods, droughts, and water access challenges. A flagship example is The Coca-Cola Foundation, Global Climate Fund (GCF) and WWF-Pakistan's Recharge Pakistan, a USD 72 million, seven years, multi-donor initiative focused on water security, climate adaptation, flood management, and biodiversity restoration across the Indus Basin. By applying nature based solutions at a landscape scale, the project strengthens flood resilience, enhances groundwater recharge, and supports healthier riverine ecosystems. These interventions directly benefit more than 687,000 people and indirectly support over 7 million by improving the resilience of shared water systems.

Urban water sustainability is another priority area. In partnership with WWF-Pakistan, Coca Cola Icecek and The Coca Cola Foundation are supporting Sustainable Urban Water Solutions in the Ravi Basin, including Lahore, Faisalabad, Gujranwala, and surrounding areas. Interventions such as groundwater recharge wells, floating treatment wetlands, water reuse systems, land leveling, and wastewater lining are building measurable replenishment capacity while improving water quality. Complementing basin level initiatives, The Coca Cola Foundation is also supporting climate resilient water access and livelihoods in northern Pakistan through partnerships that enable small scale irrigation and improved catchment management. These solutions help irrigate productive land, restore previously barren areas, and strengthen local economies in remote, water stressed regions.

Together, these programmes demonstrate how integrated

water stewardship can restore ecosystems, strengthen community resilience, and contribute to long-term water security — creating shared value for people, nature, and business.

DHL Express Pakistan

AS global supply chains evolve, sustainability has become a critical priority for businesses worldwide. At DHL Express Pakistan, we are committed to embedding environmental responsibility into our operations, reducing emissions, improving efficiency, and enabling customers to make more sustainable shipping choices.

A key pillar of this commitment is our GoGreen Plus service, an innovative solution designed to reduce carbon emissions associated with international shipments. Unlike traditional carbon offsetting, GoGreen Plus focuses on insetting, meaning emissions are reduced directly within our logistics network. This is primarily achieved through the use of Sustainable Aviation Fuel (SAF), which can reduce lifecycle greenhouse gas emissions by up to 80 per cent compared to conventional jet fuel.

DHL Express continues to invest in expanding SAF adoption across its global aviation network. With increased availability, we are now able to deliver higher emission reductions without increasing costs, making sustainable logistics more accessible. These improvements are transparently reflected in customers' annual CO2e reduction certificates, supporting their ESG goals.

Beyond aviation, DHL is accelerating the transition to electric delivery vehicles, optimising routes through advanced digital tools, and developing carbon-neutral facilities, further strengthening sustainable logistics. In a world where environmental responsibility is essential, DHL Express Pakistan remains committed to delivering solutions that balance performance with sustainability. Through GoGreen Plus, we are not only reducing emissions, but helping shape a cleaner future for global trade.

EFU Life

AS climate change reshapes the global risk landscape, EFU Life recognises its responsibility as a steward of long-term sustainability. In Pakistan, these risks are already material — impacting lives, health outcomes and financial security. In response, our business has evolved through a climate-focused lens to strengthen the resilience of the communities we serve.

At the core of this strategic shift lies our Green Commitment, embedded within our Individual Life business. Every policy issued supports tree plantation and biodiversity restoration across Pakistan, complemented by employee engagement initiatives such as plantation drives and awareness sessions on sustainable living — bringing climate action closer to our people.

“Climate action and biodiversity protection require consistency and scale. By linking every individual life policy to environmental restoration, we are ensuring that sustainability is not optional or episodic, but part of how we do business every day,” said Mohammed Ali Ahmed, MD and CEO, EFU Life.

EFU Life undertook its first comprehensive climate risk assessment aligned with international disclosure frameworks, enabling us to identify both transition risks, such as regulatory and market changes, as well as physical risks, including extreme weather and health impacts. These insights are increasingly informing our enterprise risk management and long-term planning.

We also strengthened our foundations of climate accountability. The development of our first greenhouse gas inventory marks an important milestone, with a clear roadmap to extend our responsibility across our value chain. Enhanced data systems and cross-functional ownership are improving the accuracy, consistency, and transparency of our disclosures.

Our operational efforts reflect this commitment. As the first insurer in Pakistan to achieve the globally recognised EDGE Certification for our head office, we are advancing energy efficiency, water conservation and sustainable infrastructure. Simultaneously, digital transformation is reducing paper use, while responsible waste management fosters environmental consciousness.

At EFU Life, we believe protecting lives also means protecting the systems that sustain them. By advancing climate action alongside health access and financial inclusion, we are contributing to a more sustainable and secure future for all Pakistanis. — **Mohammed Ali Ahmed, MD & CEO, EFU Life Assurance Ltd.**

Inverex

PAKISTAN is facing an escalating environmental crisis, with air pollution now posing a serious threat to public health and economic sustainability. Rising smog levels and hazardous emissions are driving an increase in respiratory and cardiovascular diseases and also impacting overall quality of life. Addressing this challenge requires not only awareness, but decisive action led by innovation and industry responsibility. At Inverex Group, we have positioned ourselves at the forefront of this transition towards clean energy. Our mission is to provide reliable, efficient, and sustainable energy solutions that directly contribute to reducing Pakistan's dependence on fossil fuels. Through our advanced solar technologies, we are enabling thousands of households and businesses to shift towards renewable energy, lowering emissions while ensuring energy independence.

Building on this vision, Inverex has also entered the electric mobility space with the introduction of the Inverex Xio EV. As transport remains a major contributor to urban air pollution, our goal is to make clean mobility both accessible and practical for the Pakistani market. By offering cost-effective electric vehicles, we are not only helping reduce emissions, but also enabling customers to significantly lower their fuel expenses.

A key differentiator for Inverex is our strong commitment to customer support. With a nationwide network of over 36 service centres and one of the largest distribution networks in the country, we ensure that our solutions are accessible, reliable, and backed by prompt after-sales service. As it expands into international markets across the Middle East and Africa, Inverex continues to represent Pakistan as a forward-looking contributor to the global clean energy movement. We remain committed to driving innovation, empowering communities, and leading the transition toward a cleaner, more sustainable future. — **Muhammad Zakir Ali, CEO, Inverex Solar Energy**

Jubilee Life Insurance

CLIMATE pressures are intensifying. With soaring temperatures and unpredictable weather, Pakistan stands on the frontlines of a crisis it did little to create. The urgency is clear: meaningful change demands collective action. Stepping forward with purpose and responsibility, Jubilee Life Insurance (JLI) is strengthening its commitment to sustainability and climate action, demonstrating that corporate leadership can be a powerful force for environmental progress.

With a pioneering goal to achieve net-zero greenhouse gas (GHG) emissions by 2030, Jubilee Life has embedded sustainability into its core operations. Monthly assessments across all GHG emission scopes guide data-driven strategies to systematically reduce JLI's carbon footprint. The organisation has embraced extensive digitisation to create a largely paperless workplace, introduced motion-sensor lighting and energy-conservation techniques such as benchmarking electricity consumption and installing solar panels across multiple premises. The recently inaugurated plantation drive from the Head Office in Karachi, with plans for large-scale urban tree planting will further help offset emissions and contribute to greener cities.

Further, adding to its operational improvements, Jubilee Life is nurturing a culture of environmental responsibility. Through awareness sessions and e-learning modules, employees are encouraged to adopt sustainable practices in their daily lives, both at work and home. The company is also expanding the use of hybrid and electric vehicles and exploring e-bikes for its corporate riders, making everyday mobility cleaner and more efficient.

Aligned with national and global climate objectives, Jubilee Life's journey reflects how businesses can move from intent to impact. By uniting innovation, accountability, and community partnership, the organisation is helping shape a more resilient and sustainable future for Pakistan, because building tomorrow starts with the actions we take today.

Meezan Bank

PAKISTAN remains among the countries most vulnerable to climate change, facing increasing exposure to extreme weather events and resource stress. In this context, financial institutions have a critical role in enabling climate resilience and sustainable economic transition. Meezan Bank is actively contributing to this agenda by embedding climate considerations into its strategy and operations.

Climate Risk and Sustainability Strategy: Meezan Bank anchors its sustainability strategy in a Triple Bottom Line approach that integrates Shariah compliance, environmental stewardship, and social equity, while embedding climate risk into its core operations and financing decisions. By aligning with emerging climate-related risks, the Bank strengthens its resilience to both physical risks, such as extreme weather events, and transition risks associated with the shift towards a low-carbon economy.

Environmental Stewardship and Climate Risk Mitigation: Meezan Bank is at the forefront of green banking in Pakistan and is proactively addressing climate risks through targeted low-carbon initiatives. The Bank has significantly expanded its solar-powered branch network, reducing dependence on fossil fuels and limiting exposure to energy transition risks.

Its annual reforestation programme, which includes planting over 10,000 trees, supports carbon sequestration and offsets approximately 1,320 metric tonnes of CO2 emissions, contributing to ecosystem restoration. Meezan Bank also played a key role

as Joint Financial Advisor for Pakistan's first Sovereign Green Sukuk, helping mobilise capital towards climate-resilient infrastructure and renewable energy projects, and supporting the country's transition to a sustainable, low-carbon economy.

Social Impact and Climate Resilience: Recognising that climate change disproportionately affects vulnerable communities, Meezan Bank integrates social sustainability into its climate risk framework. The Bank's Supply Chain Finance portfolio grew by 70 per cent, strengthening the resilience of businesses against economic and environmental shocks. It also promotes inclusive growth through gender diversity initiatives, earning the Gold Award for Women Empowerment, and through its Roshnaas programme, which creates meaningful employment opportunities for Persons with Disabilities (PWDs).

Governance, Digitalisation, and Sustainable Operations: Strong governance, guided by Shariah principles, underpins ethical, transparent, and responsible financial practices, with climate risk considerations increasingly embedded in decision-making processes. Meezan Bank's digital transformation has further strengthened its sustainability outcomes, with 93.6pc of transactions now conducted through digital channels. This shift has significantly reduced paper consumption and emissions associated with physical operations, contributing to a lower overall operational carbon footprint.

OGDC

AS Pakistan battles the devastating impacts of global climate change, Oil and Gas Development Company Limited (OGDC) is at the forefront of sustainable transformation. As the country's largest exploration and production (E&P) company, OGDC is aligning its operations with global climate priorities, continuing to support national energy needs. The company's approach reflects a growing recognition that economic growth and environmental sustainability must go hand in hand.

Responding to a climate emergency: Climate change is no longer a distant threat for Pakistan. The country has faced repeated floods, extreme heatwaves and worsening air pollution in recent years. According to the World Bank's Country Climate and Development Report, climate risks could reduce Pakistan's GDP by up to 20 per cent by 2050. Environmental degradation is also taking a heavy human toll. According to the WHO Global Health Observatory report, around 200 deaths per 100,000 population in Pakistan are attributable to air pollution and related health impacts. Similarly, outdoor air pollution contributes to 22,000 premature adult deaths, while indoor pollution accounts for 40 million cases of acute respiratory infections and 28,000 deaths per year, according to the WHO Global Health Observatory. This context underscores the urgency for large-scale, coordinated action. As a leading energy producer, OGDC acknowledges its responsibility in addressing these challenges. The company is actively adapting its business model to reduce emissions, improve efficiency and contribute to a more sustainable energy future.

Driving ESG integration: A key pillar of OGDC's sustainability strategy is the adoption of Environmental, Social and Governance (ESG) model. The company has taken a leading role in implementing ESG frameworks within Pakistan's energy sector. Its first ESG report, launched at COP29 in Baku in 2024, marked a significant step towards transparency and accountability. OGDC's ESG strategy is aligned with the United Nations Sustainable Development Goals (SDGs). It focuses on reducing environmental impact, promoting social development and strengthening governance practices. The company has also established an independent ESG Committee at the board level to ensure that sustainability considerations are embedded in strategic decision-making. Beyond compliance, OGDC views ESG as a driver of long-term value. Its initiatives support net-zero ambitions, sustainable growth and inclusive development. Participation in national efforts such as the Breathe Pakistan initiative further reflects its commitment to addressing climate change at both policy and community levels.

Reducing Emissions and Enhancing Efficiency: OGDC has adopted a structured approach to climate adaptation and mitigation. In 2024, the company undertook a comprehensive assessment of its greenhouse gas emissions. It developed a GHG inventory and set measurable emission reduction targets. Operational improvements are central to this strategy. OGDC has introduced flaring reduction programmes and methane leak detection systems to lower emissions. It is also exploring advanced technologies, including carbon capture and storage solutions, to further reduce its environmental footprint. The company's commitment extends to international frameworks as well. As a signatory to the Oil and Gas Decarbonisation Charter at COP28, OGDC has pledged to achieve net-zero operations by 2050, eliminate routine flaring by 2030 and significantly reduce methane emissions.

Environmental Sustainability and Innovation: Environmental protection is deeply integrated into OGDC's operations. The company has launched several initiatives to preserve ecosystems and promote sustainability. These include reforestation programmes, biodiversity conservation efforts and innovative waste management solutions. OGDC also adopted the use of Floating Treatment Wetlands (FTWs) for wastewater treatment at its fields. The company has implemented the technology at key its operational fields such as Rajian, Dakhni and Nashpa. This technology uses natural processes to treat contaminated water. The treated water can then be reused, particularly for plantation purposes, reducing environmental impact and improving resource efficiency. OGDC has also undertaken large-scale plantation drives, including a nationwide Miyawaki forest campaign. These dense, native forests enhance carbon absorption and support ecological restoration. Furthermore, OGDC has initiated an olive plantation project in Lakki Marwat, promoting sustainable agriculture and supporting local livelihoods. The company is also collaborating with the Capital Development Authority (CDA) for a comprehensive landscaping and tree plantation project in Islamabad.

Expanding Renewable Energy and Community Impact: Recognising the importance of clean energy, OGDC is investing in renewable solutions at the community level. The company has solarised homes in remote areas such as Gazboba Bettani in Lakki Marwat, providing sustainable electricity to underserved populations. The company has also installed solar-powered water pumping systems in regions like Kharaan, Noshki and Dera Bugti of Balochistan, ensuring reliable access to clean water.

Commitment to Communities and Social Development: Corporate Social Responsibility (CSR) remains a cornerstone of OGDC's operations. The company allocates a portion of its profits to public welfare programmes, focusing on education, healthcare, environment, infrastructure and clean water access. Through partnerships with local organisations, OGDC supports economic development and empowers small businesses. The company's contributions towards education and skill development aim to build long-term capacity and improve socioeconomic outcomes.

Ensuring Safety and Governance Excellence: OGDC places strong emphasis on Health, Safety, Environment and Quality (HSEQ) standards. The company promotes a culture of safety and compliance across all operations. Regular training, strict adherence to regulations and robust emergency response systems are key components of its HSE framework. The company's Enterprise Risk Management (ERM) system further strengthens governance. By integrating ESG risks into its risk framework, OGDC ensures that environmental and social considerations are systematically addressed. OGDC's comprehensive approach demonstrates that sustainability is no longer optional but essential for long-term success. The company's efforts highlight the role that responsible corporate leadership can play in shaping a resilient and sustainable future.

PSO

AS Pakistan confronts the escalating economic and public health crises of seasonal smog, PSO is leveraging its institutional scale to transition from a traditional energy provider to a primary architect of a cleaner economy. Rather than treating sustainability as a peripheral mandate, PSO has integrated ESG metrics into its core business strategy, transforming environmental stewardship into a driver of long-term institutional resilience and competitive advantage. Decarbonising the Energy Value Chain, PSO is aggressively scaling a nationwide EV charging network, targeting the electrification of two and three wheelers, accounting for major chunk of mobile emission sources of urban particulate matter. This systemic alignment ensures that capital allocation directly supports the decoupling of economic mobility from combustion-based emissions. Internally, the solarisation of depots and retail forecourts ensures that the carbon intensity of energy delivery is systematically reduced, aligning retail outlet's operations with Pakistan Green Building Council's Sustainability in Energy and Environmental Development (SEED) Platinum and Titanium sustainability benchmarks.

Strategic Green Infrastructure: Recognising that ecological health is fundamental to operational DNA, PSO is spearheading nationwide plantation initiatives. By restoring green cover across diverse terrains, the company is rebuilding the natural filtration systems required to mitigate heat islands and capture atmospheric pollutants at a national scale.

The Future: An enabling platform for e-commerce in a forward-looking move to future-proof Pakistan's commercial backbone, PSO is planning to develop its battery-swapping infrastructure as an enabling platform for the e-commerce ecosystem. By electrifying home delivery based platforms running on two and three wheelers, PSO provides the sustainable logistics foundation required for the digital economy to scale without exacerbating the smog crisis. Addressing air quality requires more than symbolic gestures, it demands the systemic courage to re-engineer the national energy landscape. PSO is leading that charge!

Syngenta

BY 2050, we need to increase food production by 50 per cent with 30pc less resources. Climate change is rapidly reshaping agriculture in Pakistan, placing immense pressure on farmers, food systems, and national food security. Rising temperatures, erratic rainfall, prolonged droughts, and sudden floods are disrupting traditional cropping cycles. For a country where agri-

culture contributes significantly to livelihoods, these shifts are not just environmental — they directly impact farmer incomes, rural stability, and the affordability of food. Extreme weather events have already taken a visible toll. For smallholder farmers, who form the backbone of Pakistan's agriculture, this growing uncertainty translates into higher risks and reduced resilience.

In this context, climate-resilient agriculture is no longer optional — it is essential. It focuses on strengthening farming systems to withstand environmental stress while sustaining productivity. This includes better water management, climate-smart crop selection, and practices that improve soil health. Healthy soil enhances water retention, support stronger plant growth, and help farms better cope with extreme conditions.

Biological solutions are increasingly becoming part of this transition. Syngenta Biologicals is spearheading innovation by developing products that work with natural processes to strengthen crop resilience and improve overall farm productivity. By improving nutrient uptake, enhancing plant tolerance to stress, and supporting natural pest control, they offer a more sustainable approach to farming. Ultimately, building climate resilience in Pakistan's agriculture sector is critical for safeguarding farmer wellbeing and ensuring long-term food security. By combining sustainable practices with innovative solutions, farmers can better adapt to a changing climate while continuing to feed a growing population.

US Soy Bean

PAKISTAN is on the frontlines of climate volatility. From extreme weather events to resource constraints, the country must build resilient food systems that ensure access to reliable, high-quality, and affordable protein. Sustainability is no longer an option; it is essential for long-term nutrition security. For Pakistan's poultry sector, this transformation starts with feed, which accounts for the largest share of production costs. To increase efficiency and maximise profit, the focus must shift from just input costs to maximising value creation with better feed conversion ratios and lower-damage ingredients with higher digestibility. Sustainable sourcing of feed ingredients is not just an environmental decision — it is a strategic step towards building long-term resilience. While reducing the industry's environmental footprint, it also supports regulatory compliance, builds customer trust, and helps achieve ESG goals. High-quality inputs like US soybeans offer a differentiated advantage by boosting animal performance and ensuring consistency. With the lowest carbon footprint among major soy origins, US soybeans are verified sustainable under the US Soy Sustainable Assurance Protocol (SSAP).

South Asian producers are already adopting sustainable sourcing practices, highlighting their commitment by adopting the 'Fed with Sustainable' and 'Sustainable US Soy' labels on their food and feed packaging. By sourcing at least 60 per cent verified-sustainable US Soy, companies can feature these labels on their products in a market increasingly prioritising transparency and sustainability. An opportunity Pakistan's poultry industry can now accelerate. As Pakistan's protein demand grows, building supply chain resilience becomes essential for long-term food and nutrition security. (Learn more at ussec.org).

Zong

AT Breathe Pakistan, Zong is bringing together a range of climate actions under one clear direction, turning commitment into measurable impact across communities, operations, and infrastructure. As part of China Mobile Communications Corporation, Zong's vision is anchored in building a world-class technology service enterprise that enables sustainable and inclusive growth. Guided by its core values of Responsibility, Openness, Integrity, and Excellence, the company integrates ESG principles into decision-making through three strategic pillars: Digital Intelligent Innovation, Low and Green Carbon Operations, and Inclusive Growth. This framework ensures that technological advancement is aligned with environmental stewardship and national development priorities.

At the infrastructure level, Zong continues to scale green infrastructure to build a more efficient and resilient network nationwide. Approximately 85 per cent of total sites are now supported by solarisation and Li-ion battery solutions, reducing dependence on conventional grid electricity and lead-acid systems. Since 2025, solarisation efforts have accelerated, with installations collectively generating around 1430 MWh of clean energy annually. Alongside this, the transition to Li-ion technology is enhancing energy efficiency, optimising power usage, and strengthening service reliability, particularly in remote and high-demand areas. Together, these advancements reflect a clear shift towards cleaner, smarter infrastructure.

Complementing this are targeted, on-ground initiatives that translate strategy into visible impact. In collaboration with the MOCC&EC and Pak EPA, Zong planted 3,500 indigenous and climate-resilient trees in Islamabad, contributing to improved air quality and long-term carbon absorption of around 200 metric tonnes. Addressing plastic pollution, World Cleanup Day activities combined waste collection, segregation, and recycling awareness with practical upcycling through EcoBricks, encouraging circular economy practices. At the same time, operational shifts such as work from home initiatives demonstrated how everyday actions can drive impact, with over 22 MWh of electricity saved and more than 10 metric tonnes of emissions avoided in a single month.

Together, these efforts reflect a consistent, impact-driven approach where innovation, infrastructure, and individual action converge to support a more climate-resilient Pakistan.

Schneider Electric

PAKISTAN stands at the global epicenter of climate volatility. As we engage with the Breathe Pakistan initiative by *Dawn*, the conversation must shift from general awareness to high-level strategic action. For the Pakistani private and public sectors, climate risk is no longer an environmental footnote; it is a fundamental economic challenge that demands a transition from a reactive "disaster response" mindset to one of proactive, operational resilience.

Understanding the Dual Threat: To manage climate risk, we must first categorise it. As outlined in international advisory frameworks, organisations face two distinct pressures. First are Physical Risks, which in Pakistan manifest as acute weather events, such as the devastating floods of recent years and chronic shifts like rising mean temperatures and water scarcity. These have direct, tangible impacts on infrastructure, agriculture, and supply chain continuity. Second, and perhaps more overlooked, are Transition Risks. As global markets move towards Net Zero, Pakistani exporters face shifting "green" regulations, carbon border taxes (such as the EU's CBAM), and evolving investor expectations. Failing to account for these transitions doesn't just impact the planet; it impacts market access and the cost of capital.

A Range of Plausible Futures: Climate action is, ultimately, good commercial sense. The path to resilience begins with Climate Scenario Analysis (CSA), a process that allows leaders to model a range of plausible futures and identify where their vulnerabilities lie. By integrating climate data into the core of business strategy, organisations can move from a reactive "disaster response" mindset to a proactive model that identifies new efficiencies and market opportunities. In a region where energy systems and water security are deeply interlinked, treating sustainability as an operational priority is the only way to ensure long-term stability.

The Resilience Journey: The era of voluntary sustainability is closing. We call on Pakistani business leaders and policy-makers to move beyond pledges and towards evidence-based action.

Commit today to conducting a comprehensive Climate Risk Assessment. By identifying your exposure to both physical and transition risks now, you don't just protect your assets — you build a future-proof foundation for the Pakistani economy. The journey towards resilience begins with the first step of measurement and analysis. — *Farrukh Shah*

EBM

PAKISTAN does not have the luxury of slow deliberation on climate. As the fifth most climate-vulnerable country on earth, it loses nearly 1pc of its GDP every year to disasters that are no longer anomalies; they are the calendar. The 2025 monsoon floods, the most destructive since 2022, killed over a thousand people, displaced millions and erased billions in economic value. Temperatures have climbed 0.5°C over 50 years. This is the context in which English Biscuit Manufacturers (Private) Ltd (EBM) has returned as a principal sponsor of *Dawn* Media Group's Breathe Pakistan International Climate Change Conference 2026.

“Climate change is no longer a future risk; it is a present cost, paid every year in lives, livelihoods and lost growth,” said Shahzain Munir, Executive Director, EBM. “Pakistan cannot afford incrementalism. The private sector must move beyond pledges to measurable progress, embedding sustainability into how we build, source and operate. Platforms like Breathe Pakistan matter because they put government, industry and civil society in the same room, with the same urgency, working towards the same outcome.”

EBM, through its 'Nourish the World' initiative, is transforming how it operates. Freshwater consumption is down 12pc. GHG emissions have been cut by 4pc. Green energy now accounts for 4pc of its energy mix. The target is Net Zero by 2050 and the numbers, year on year, are moving in that direction. The plastic waste programme is concrete. EBM has partnered to convert multi-layered plastic, the kind that typically ends up in landfills or open dumps, into road infrastructure, offsetting hundreds of tons of GHG emissions in the process. Waste that was a problem is becoming pavement. This is a supply chain decision with a measurable outcome that impacts people and the planet.

The private sector's role in Pakistan's climate response is no longer optional or symbolic. What Breathe Pakistan does is force that reality into a room where policy gets shaped. EBM's continued presence at that table reflects where it sees its responsibility and where it is putting its focus.



CAPITAL SMART
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Proud Principal Partner of the Breathe Pakistan Climate Conference 2026.

CSM is leading the transition to electric mobility, powering a cleaner, greener future for Pakistan.



Driving the Shift Towards a Climate-Resilient Pakistan.



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