CLIMATE ACTION & POLICY INITIATIVE (CAPI)
ISLAMABAD • PAKISTAN

CLIMATE NEXUS QUARTERLY

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ISSUE 1 | VOLUME I | JANUARY – MARCH 2026

INSIDE THIS ISSUE

- America Goes Rogue: US Exit from UNFCCC & IPCC
- COP30 Belém: $1.3T Finance Roadmap & the 1.5°C Breach
- Pakistan CCPI 2026, NDC 3.0, Lahore Smog Crisis
- CBAM, Carbon Markets, Climate Finance & L&D
- LCEDT v2.0: Least-Cost Electrification for 1,015 Villages
- Independent Voices from Scientists, Economists & Communities

1.5°C	56	$1.3T	<1%
Global warming threshold breached (WMO, 2025)	COP30 Belém decisions by consensus	Baku-to-Belém annual finance target by 2035	Pakistan's share of global emissions

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Q1 2026 Edition

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CONTENTS

Issue 1 | Volume I | January – March 2026

I A Letter from Our Desk 3

II Global Watch — Q1 2026 5

America Goes Rogue: US Exit from UNFCCC & IPCC 5

COP30 Belém: What the World Got — and What It Didn't 7

Global Events Timeline — Q1 2026 7

III Pakistan in Focus — Q1 2026 9

Lahore Smog Crisis • Extreme Cold • CCPI 2026 9

Climate Budget Tagging • Pakistan Events Timeline 10

IV Policy & Regulatory Tracker 11

V Adaptation Actions, Priorities & Updates 14

NAP Implementation Gap • GLOF Risk Reduction 14

Urban Resilience • Agriculture • Water • Afforestation 15

VI Mitigation Actions, Priorities & Updates 17

NDC 3.0 • Solar 4,500 MW • Wind • Electric Vehicles 17

Biomass • Waste • Green Buildings • Just Transition 18

VII Climate Finance & Carbon Markets 20

L&D Fund • Article 6 • dMRV & Tokenization 20

CBAM • Q2 2026 Funding Opportunities 21

VIII Technologies & Innovations 24

LCEDT v2.0 • Blue Economy • Hydrogen • Green Buildings 24

IX Case Studies & Field Reports 26

GLOF-II Hunza • Climate Budget Tagging 26

X Research Studies & Articles 29

LCEDT v2.0 • CBAM Pakistan • GB Cultural Heritage 29

XI Independent Voices 33

XII CAPI in Action — Q1 2026 Activities 37

XIII About CAPI & This Magazine 42

SECTION I

A LETTER FROM OUR DESK

Editorial introduction from the CAPI team

> ***We are now entering the most consequential year in climate history since the Paris Agreement was signed. The rules of the game have shifted — but the urgency has not. If anything, it has intensified.***

Welcome to the inaugural issue of Climate Nexus Quarterly — Q1 2026 Edition — covering January through March 2026, a period of seismic shifts in global climate governance. In this quarter alone: the United States formally withdrew from the Paris Agreement on January 27, becoming a non-party to the foundational 2015 accord; and on January 7 announced withdrawal from the UNFCCC itself and 65 other international bodies — the first nation in history to attempt such a step. COP30 in Belém closed November 2025 with 56 decisions and a $1.3 trillion finance target, yet fell short on fossil fuel phase-out language. And Pakistan, ranked 15th in the Climate Change Performance Index 2026, submitted its NDC 3.0 with ambitious targets tied entirely to external climate finance.

In this issue, we bring you a critical analysis of the US–UNFCCC withdrawal and what it means for Pakistan's climate finance pipeline; a case study from Pakistan's GLOF-II communities in Hunza Valley; an independent critique of the National Adaptation Plan implementation gap; research highlights from the Least-Cost Electrification Decision Tool (LCEDT v2.0) covering 1,015 unserved settlements; analysis of the EU CBAM threat to Pakistan's textile exports; a survey of Pakistan's clean energy, transport, agriculture, waste, and buildings transitions; and original voices from scientists, economists, community leaders, and practitioners who are shaping Pakistan's climate response. We write not for the sidelines, but for the actors.

Climate Nexus Quarterly is published by the Climate Action & Policy Initiative (CAPI), Islamabad — a think-action organisation at the intersection of climate science, public policy, finance, and sustainable development. The magazine is free to read, free to share, and built on a belief that informed citizens and empowered decision-makers are Pakistan's most powerful climate asset.

In This Issue

- Section I — A Letter from Our Desk
- Section II — Global Watch: Q1 2026 (US exits UNFCCC; COP30 Belém outcomes; 1.5°C breach; global timeline)
- Section III — Pakistan in Focus: Q1 2026 (Lahore smog; extreme cold; CCPI 2026; climate budget tagging; events timeline)
- Section IV — Policy & Regulatory Tracker: Climate Change, Mitigation, Adaptation, and Loss & Damage
- Section V — Adaptation Actions, Priorities, and Updates (NAP, GLOFs, urban resilience, agriculture, water, afforestation)
- Section VI — Mitigation Actions, Priorities, and Updates (NDC 3.0, renewable energy, EVs, biomass, waste, construction)
- Section VII — Climate Finance & Carbon Markets (L&D Fund, Article 6, carbon standards, AI/tokenization, funding opportunities)

- Section VIII — Technologies and Innovations (LCEDT electrification, solar, wind, biogas, biochar, green hydrogen)
- Section IX — Case Studies and Field Reports (GLOF-II Hunza; climate budget tagging)
- Section X — Research Studies and Articles (LCEDT v2.0; CDA green pockets; carbon market governance)
- Section XI — Independent Voices (9 expert and community perspectives)
- Section XII — CAPI in Action: Q1 2026 Activities
- Section XIII — About CAPI and This Magazine

SECTION II **GLOBAL WATCH — Q1 2026**

Critical analysis of the defining global climate events of January–March 2026

CRITICAL ANALYSIS • GLOBAL GOVERNANCE

America Goes Rogue: The US Exit from UNFCCC & IPCC

Editorial Team, CAPI | January–February 2026 | Sources: UNFCCC, Carbon Brief, Express Tribune, EDF, CAN International

On January 7, 2026, President Trump signed a presidential memorandum directing the United States to withdraw from 66 international organisations — including, most consequentially, the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC). The Paris Agreement withdrawal, filed in January 2025, formally took effect on January 27, 2026. Together, these actions constitute the most sweeping retreat by a major economy from multilateral climate architecture in the 34-year history of the UNFCCC.

The move is unprecedented. Every nation on Earth has been party to the UNFCCC since its adoption at the Rio Earth Summit in 1992. The US would, upon completion of withdrawal procedures, become the first and only country ever to formally exit the foundational climate treaty. As the Climate Action Network International stated: 'The US's announced departure from the UNFCCC, IPCC and other UN bodies does not erase their historical responsibility in harming our planet and people.'

> ***For Pakistan, which contributes less than 1% of global greenhouse gases yet faces existential climate threats, the US withdrawal is not an abstraction — it is a direct financial and scientific blow.***

Three Dimensions of Impact for Pakistan

Climate Finance. The US was historically the world's largest bilateral climate finance contributor. US withdrawal has already disrupted USAID climate programmes in Pakistan covering flood early warning, forest governance, and disaster risk reduction worth hundreds of millions of dollars. For a country requiring PKR 1.3 trillion annually to meet its NDC targets, this is a structural blow. As the Express Tribune reported in January 2026: the American withdrawal 'will worsen funding gaps, delay vital projects and cause greater uncertainty for countries already grappling with debt and fiscal fragility.'

Scientific Credibility. The US contributed approximately $1.9 million annually to the IPCC — reducing global climate science quality, including the attribution science underpinning Pakistan's loss and damage claims.

Diplomatic Leverage and Strategic Opportunity. US absence may paradoxically allow China and the EU to shape climate finance and carbon market architecture in ways more favourable to developing countries. Pakistan must actively position itself — with the EU Global Gateway, ADB's $2.1B climate portfolio, China's Belt and Road green finance commitments, and the G77 coalition at COP31.

Critical Observation: The Conditionality Trap

Pakistan's NDC 3.0, submitted in late 2025, conditions its most ambitious mitigation targets (60% renewable energy by 2035) entirely on external climate finance. With US withdrawal reducing the overall pool of available international climate finance, Pakistan risks being locked in a low-ambition scenario not by choice but by default. This conditionality structure must be reviewed against revised finance projections for the post-US multilateral landscape.

What Pakistan Should Do Now

Several responses are both urgent and strategic. Pakistan's Ministry of Climate Change must accelerate engagement with alternative finance channels: the GCF, the ADB Climate Change Fund ($2.1 billion portfolio through 2030), the EU's Global Gateway, and the newly operationalised Loss and Damage Fund. Pakistan should simultaneously leverage its leadership role in the Group of 77 and China to push for binding compliance mechanisms at COP31 in Antalya — mechanisms that do not depend on voluntary US participation.

Bottom Line for Pakistani Policymakers

Do not wait for the US to return. Redesign the climate finance pipeline around multilateral, EU, and South-South channels.

Submit loss and damage documentation under the UNFCCC's Santiago Network.

Engage IPCC processes directly to ensure Pakistan's climate data remains represented.

Conclude an Article 6.2 bilateral carbon agreement before COP31.

The window for strategic repositioning is the next 12 months.

MULTILATERAL OUTCOMES • COP30

COP30 Belém: What the World Got — and What It Didn't

The $1.3 Trillion Baku-to-Belém Roadmap: Historic Ambition, Vague Delivery

COP30 committed to mobilising $1.3 trillion annually by 2035 for developing nations — the Baku-to-Belém Roadmap. But civil society groups widely note the 'details remain vague' on who pays, through what channels, and with what accountability. Developing countries remain 'deeply unsatisfied.' Pakistan's NDC 3.0 finance requirements now hang on this promise. COP30 resulted in the adoption of 56 decisions by consensus — the second-largest COP in history with 56,118 delegates registered. Key outcomes included: the Just Transition Mechanism; the Belém Mission to 1.5°C; the Global Implementation Accelerator; and the COP30 Presidency's roadmaps for fossil fuel transition and deforestation reversal.

However, the most contentious issue — a binding roadmap to phase out coal, oil, and gas — was blocked by oil-producing nations including Saudi Arabia and the UAE. Two voluntary roadmaps were announced outside the formal UN process, to be presented at a special summit in Colombia in April 2026.

Loss & Damage Marginalised; Adaptation Finance to Triple by 2035

Despite Pakistan's strong advocacy at COP30, loss and damage 'received relatively little attention compared to previous COPs.' Positively, adaptation finance is to be tripled to approximately $120 billion per year by 2035. COP30 also adopted 59 Global Goal on Adaptation indicators — though many were altered in the final hours, creating 'unmeasurable' benchmarks that must be refined at Bonn intersessionals in June 2026.

Pakistan's Ask for COP31 Antalya (November 2026)

Binding developed-country obligations under Article 9.1 of the Paris Agreement; operationalisation of the Loss & Damage Fund with dedicated Pakistan access window; Article 6.4 mechanism finalisation enabling Pakistan's forestry and blue carbon credits; and mandatory fossil fuel phase-out language.

Global Events Timeline — Q1 2026

JANUARY 7, 2026

US Signs Withdrawal from UNFCCC, IPCC & 64 Other Bodies

Trump's presidential memorandum directs withdrawal from 66 international organisations — making the US the first country to initiate UNFCCC exit. CAN International condemns the move; global climate diplomacy enters a period of deep uncertainty.

JANUARY 22–30, 2026

COP30 Global Climate Action Agenda 2026 Cycle Opens

The COP30 Presidency and UNFCCC hold the opening session of the 2026 Global Climate Action Agenda, with 546 participants. 30 Activation Groups launch their 2026 work cycles toward COP31 in Antalya.

JANUARY 27, 2026

US Formally Non-Party to Paris Agreement

The US withdrawal from the Paris Agreement — filed January 2025 — takes legal effect. The US becomes a non-party to the foundational 2015 climate accord. COP30 President Lago's 12th Presidential Letter reaffirms that 'the global climate transition is irreversible.'

MARCH 19, 2026

COP30 Executive Report Released

The COP30 Presidency releases its Executive Report documenting 56 consensus decisions from Belém, outlining the Belém Mission to 1.5°C, the Global Implementation Accelerator, and the Baku-to-Belém Roadmap.

SECTION III

PAKISTAN IN FOCUS — Q1 2026

Climate events, national responses, and frontline realities from across the country

Lahore Smog Crisis: AQI Hits 500+ for 14 Consecutive Days

Northern Pakistan — particularly Lahore and the Punjab plains — experienced its most severe smog season on record in January 2026. AQI readings exceeded 500 (Hazardous level) for 14 consecutive days. Schools closed; hospitals reported a 30% increase in respiratory admissions. A Lahore medical student wrote to the Health Minister: 'The entire winter from October to February I have been struggling with serious upper respiratory tract infection — cough so dry feels as if it would break apart my lungs.' Smog is now a recognised climate-driven public health emergency, combining crop stubble burning, vehicular emissions, industrial pollution, and atmospheric temperature inversions intensified by climate change.

Extreme Cold Events: Naran, Hunza, Skardu Below −7°C

In paradoxical counterpoint to global heating, northern Pakistan's mountain communities experienced extreme cold events in January–February 2026, with temperatures falling to −7°C in Naran, Hunza, and Skardu. Climate science explains this as disruption of the jet stream by Arctic warming. Hundreds of communities with inadequate resources faced fuel and food insecurity. The government is being pressed to provide emergency shelter and support to these high-altitude populations — a climate adaptation gap that remains unfunded and under-planned.

Pakistan CCPI 2026: Ranked 15th — 'Low' on Policy

Pakistan ranks 15th in the Climate Change Performance Index 2026 — a noteworthy performance driven by its 'very high' rating in GHG Emissions and Energy Use. However, the CCPI gives Pakistan a 'low' rating on Climate Policy and 'very low' on Renewable Energy. CCPI experts flag a risk: 'Implementation hinges on consultation with sub-national administrations… without this sort of vertical partnership, enforcement mechanisms, domestic financing, and desperately needed adaptation efforts may not be put in place.' NDC 3.0 conditionality is specifically flagged as a concern.

Climate Budget Tagging: A Quiet Win for Transparency

In a positive development largely unreported in mainstream media, Pakistan has embedded climate budget tagging into its federal financial systems — including the Budget Call Circular and the Finance Minister's budget speech. The Ministry of Finance now routinely tags climate-relevant expenditures using an IFMIS module developed in 2024. As the IMF's PFM Blog noted in February 2026: 'Pakistan is making good progress' and the experience shows that 'starting small, investing in institutional systems, and building ownership are key to sustainable climate budget tagging.'

Key Q1 2026 Statistics

NDC 3.0: Submitted 2025 with 60% renewables by 2035, conditional on climate finance.

CCPI Rank: 15th globally, 'very high' GHG emissions performance, 'low' climate policy, 'very low' renewable energy.

Water Security: 860 m^3 per capita water availability projected — approaching Pakistan's water scarcity threshold of 1,000 m^3.

Smog Emergency: Lahore AQI 500+ for 14 consecutive days, January 2026 — worst on record.

Pakistan Events Timeline — Q1 2026

JANUARY 2026

Lahore Smog: AQI 500+ for 14 Consecutive Days

Pakistan's worst recorded smog crisis hits Punjab. Schools closed, outdoor activities banned, hospitals report 30% increase in respiratory admissions. The event prompts renewed calls for a national clean air emergency response law.

FEB 9–11, 2026

GCISC-ADB MRV & Article 6 Carbon Markets Workshop

3-day training on Measurement, Reporting & Verification and carbon market mechanisms at Serena Hotel, Islamabad. Co-organised by GCISC and ADB; 80+ practitioners trained. Builds national capacity for Pakistan to participate in post-COP30 Article 6 carbon market transactions.

FEB 12–13, 2026

3rd IPSAC 2026 Conference — KFUEIT Multan

The International Conference on Precision & Sustainable Agriculture under Climate Change, co-organised by GCISC, convenes at KFUEIT, Multan. Focus: climate-smart agriculture solutions for Pakistan's food security challenges under intensifying heat and erratic rainfall.

MARCH 2026

Pakistan NDC 3.0 Stakeholder Consultations Continue

Following formal submission, the Ministry of Climate Change conducts provincial and sectoral stakeholder consultations on NDC 3.0 implementation roadmaps. CCPI experts flag the need for stronger sub-national partnership frameworks and domestic finance mobilisation.

SECTION IV POLICY & REGULATORY TRACKER

Status and updates on climate legislation, regulations, and policy — national and international

A comprehensive Q1 2026 tracker of key climate-related legislation, regulations, and policy developments — national and international — with independent CAPI assessment of implementation status and recommended actions.

PART A • PAKISTAN — FEDERAL & PROVINCIAL

Policy / Development	Jurisdiction	Status	CAPI Assessment & Recommended Action
Pakistan NDC 3.0 — 60% renewables by 2035, conditional on external climate finance	Pakistan Federal	Submitted 2025	Ambitious but 100% conditional. Develop domestic finance mobilisation plan. Risk: US withdrawal shrinks external finance pool.
Pakistan National Climate Change Policy (Revised)	Pakistan Federal	Active	Framework in place; implementation gaps persist across sectors. Requires Cabinet-level coordination authority.
Pakistan Climate Change Act 2017 (Amendment Bill)	Pakistan Federal	Under Review	Proposes independent Climate Commission. Must be passed and operationalised in 2026 to provide governance backbone for NDC delivery.
National Adaptation Plan (NAP) — Revised (Launched Jan 2026)	Pakistan Federal	Implementation Gap	Technically sound; implementation lagging. Funding disbursement, inter-ministerial coordination, and provincial plans are key bottlenecks.
Climate Budget Tagging (IFMIS Integration)	Pakistan Federal	Active	Genuine institutional progress. Critical prerequisite for GCF and multilateral access. Urgent: extend to all four provincial budgets.
Pakistan Carbon Market Policy Guidelines (COP29, Baku)	Pakistan Federal	Framework Only	Policy launched; implementation regulations in draft. Finalise and gazette Carbon Market Framework by September 2026.
Pakistan ETS — Emissions Trading System (Proposed)	Pakistan Federal	Concept Stage	BPPPA feasibility report recommends phased ETS starting with Balochistan pilot. Target: compliance mechanism by 2028.
Sindh Climate Change Policy	Sindh Province	Active	First province-level climate policy; focus on coastal resilience. Mangrove restoration and adaptation finance access are key priorities.
National Electric Vehicle Policy — 30% EV by 2030	Pakistan Federal	Active	Punjab deploying 400+ Yutong e-buses; Islamabad 160 buses. Critical gap: local manufacturing and grid integration.
SECP Green Bond Framework — First Green Sukuk Issued 2025	Pakistan Federal	Active	PKR 20B sukuk issued 2025 — market appetite confirmed. Target 5 green

Policy / Development	Jurisdiction	Status	CAPI Assessment & Recommended Action
			sukuk/year for industrial and energy projects.
SBP Green Banking Framework — TCFD-aligned reporting required	Pakistan Federal	Active	Commercial banks required to develop climate risk strategies. Operationalisation pace is slow; supervisory enforcement needed.
GCISC-ADB MRV & Article 6 Workshop — Islamabad, Feb 9–11, 2026	Pakistan Federal	Completed	Positive capacity building. Must be followed by Article 6.2 bilateral agreement and national carbon registry establishment.
CDA F-6/F-7 Green Pockets Re-Planning Proposal — Islamabad	CDA / Federal	Under Review	CAPI objection submitted. Full Strategic Environmental Assessment must be conducted before any conversion to built-up uses.

PART B • INTERNATIONAL & TRADE INSTRUMENTS

Policy / Development	Jurisdiction	Status	CAPI Assessment & Recommended Action
US Withdrawal from Paris Agreement — Effective Jan 27, 2026	United States	In Effect	Direct loss of bilateral climate finance to Pakistan. Urgently diversify to GCF, ADB, EU, and multilateral channels.
US Withdrawal from UNFCCC/IPCC — 66 bodies, Jan 7, 2026	United States	In Process	First UNFCCC withdrawal in 34-year history. Pakistan should champion COP31 accountability and compliance mechanisms.
COP30 Belém — $1.3T Finance Roadmap (Baku-to-Belém)	International / UNFCCC	Vague on Delivery	Target ambitious but non-binding at country level. Push for binding developed-country obligations under Article 9.1 at COP31.
COP30 Global Goal on Adaptation — 59 Indicators	International / UNFCCC	Under Refinement	Pakistan must engage actively at Bonn June 2026 to ensure indicators relevant to flood and GLOF adaptation are retained and measurable.
Loss & Damage Fund — Operationalised COP28	International / UNFCCC	Underfunded	<$1B pledged vs. $400B annual need. Pakistan has not yet submitted formal L&D access proposal. Must act immediately.
EU Carbon Border Adjustment Mechanism (CBAM) — 2026 Full Integration	EU / Pakistan Trade	Active Threat	No Pakistan preparedness strategy exists. Task force + GHG reporting mandate + textile decarbonisation roadmap urgently needed.
Verra VCS Version 5 — New Voluntary Carbon Standard (2025)	International	In Force	Strengthened integrity requirements. Pakistan's DBC and Billion Tree projects must update to VCS v5 for premium market access.
Australia ACCU Safeguard Mechanism Review — FY2026-27	Australia	Upcoming	World's most instructive carbon market case study. Pakistan should observe and adapt lessons for Pakistan ETS design.

SECTION V

ADAPTATION ACTIONS, PRIORITIES & UPDATES

Pakistan's response to climate impacts — from national policy to community frontlines

National Adaptation Plan: Gap Between Document and Delivery

INDEPENDENT CRITIQUE • Pakistan's National Adaptation Plan: Why the Gap Between Document and Delivery Must Be Closed in 2026

Pakistan's revised National Adaptation Plan (NAP) is a technically sophisticated document covering water, agriculture, health, coastal zones, and urban infrastructure with sector-specific adaptation measures. Its January 2026 launch was widely welcomed. But three structural problems prevent it from translating into on-the-ground climate resilience:

(1) Funding mismatch — actual climate expenditure remains far below NAP requirements, with no transparent reporting of the gap;

(2) Governance fragmentation — at least seven federal ministries and four provincial governments are involved, with no single coordinating authority with budget authority and enforcement power;

(3) Provincial disconnect — the NAP's provincial chapters have no counterpart provincial action plans with funded implementation timelines.

CAPI Recommendations

Establish a Cabinet-level National Climate Coordination Committee with cross-ministerial mandate and quarterly reporting to Parliament.

Set annual adaptation spending floors in the Budget Call Circular — minimum 1% of GDP directed to climate adaptation by 2027.

Require all four provinces to develop funded Provincial Climate Action Plans within 12 months, with MoCC technical support.

Publish annual NAP implementation scorecards against specific, measurable indicators — modelled on the GCF's results framework.

GLOF Risk Reduction & Mountain Community Resilience

Pakistan hosts more glaciers outside the polar regions than any other country — approximately 7,253 glaciers. Three new GLOF events struck Hunza Valley in Q1 2026, triggering evacuations of over 1,200 people and causing PKR 800 million in infrastructure damage. The UNDP–Pakistan GLOF-II project has installed early warning systems in 33 high-risk communities, providing 3–4 hour warning times. But 33 communities represents less than 2% of Pakistan's 2,000+ glacial lake at-risk sites. Priority actions: scale GLOF-III coverage to 200+ communities; address 'last mile' infrastructure gaps; and integrate GLOF data into the National Spatial Data Infrastructure.

Urban Resilience: Green Infrastructure and Islamabad's Green Pockets

Pakistan's growing cities face intensifying urban heat islands, flash flooding, and air quality emergencies — all worsened by the loss of urban green space. In Q1 2026, CAPI submitted a formal objection to the Capital Development Authority's (CDA) proposal to re-plan 'un-assigned' land pockets in Sectors F-6 and F-7, Islamabad. The objection — backed by IPCC, NASA, and CMIP6 projections — demonstrates that these pockets are critical climate-adaptation infrastructure: green buffers between dense housing and the 17,000-hectare Margalla Hills National Park; ventilation corridors; storm-water absorption zones; and biodiversity corridors. Converting them to built-up uses would raise local temperatures by 2–3°C, increase cooling energy demand, reduce air quality buffering, and worsen urban flood risk. Under IPCC projections, Islamabad faces 3–5°C additional warming this century — making existing green infrastructure more valuable, not less.

CAPI Recommendations to CDA

Withdraw the re-planning proposal pending a full Strategic Environmental Assessment and Climate-Risk Assessment with public consultation.

Re-designate all identified pockets as Urban Green Buffer, Urban Forest, or Neighbourhood Parks / Climate-Resilient Green Corridors.

Develop a Green Infrastructure Management Plan integrating enhanced tree cover, bio-swales, permeable pavements, and accessible shaded public spaces.

Publicly commit that no further encroachment toward Margalla Hills National Park will be permitted.

Climate-Smart Agriculture & Farmer Adaptation

Pakistan's agricultural sector — contributing 24% of GDP and employing 40% of the workforce — faces a triple crisis: erratic monsoons, heat stress on crops, and chronic soil degradation from chemical fertiliser overuse. Key adaptation priorities in Q1 2026:

- Punjab: Heat-tolerant wheat/rice variety pilots by NARC/GIZ; 50,000+ solarised agricultural tubewells (CM Solarisation Programme)
- Sindh: Climate-Smart Agriculture Programme (ADPC/GIZ) covering 15 districts with drought-resistant seed distribution and precision irrigation
- KP: Billion Tree agroforestry integrating fruit trees with food crops — climate adaptation and carbon revenue
- Balochistan: Water conservation and drip irrigation (UNDP/WBG) scaling precision agriculture in water-stressed districts
- National: NARC testing 12 heat-tolerant wheat varieties; PPAF Rural Livelihood Programme integrating climate adaptation

Water Security & Freshwater Adaptation

Pakistan's per capita water availability has fallen from 5,260 m³/year in 1951 to approximately 1,000 m³ now — at the water stress threshold. By 2025, projections suggest 860 m³/capita — entering water scarcity. Climate change is accelerating glacial melt (altering Indus River seasonality), increasing rainfall variability (feast-or-famine monsoons), and raising evapotranspiration. Key adaptation actions: expansion of check dams and hill torrents in Balochistan and KP; rainwater harvesting programmes; managed aquifer recharge in Punjab; and coastal aquifer protection in Sindh.

Afforestation & Ecosystem Restoration

KP Billion Tree Initiative — World Recognition

KP's Billion Tree Tsunami — scaled to the national Green Pakistan Programme targeting 10 billion trees — has been cited by IUCN and IPCC as a model nature-based solution. KP accounts for 60%+ of the national target. Carbon credit potential: REDD+ and ARR methodologies under VCS. Estimated potential: 15–25 million credits per year from expanded national afforestation.

Sindh Mangrove Restoration — Delta Blue Carbon

Sindh Forest Department's mangrove restoration programme expanded cover from 95,000 ha (2000) to 160,000 ha (2025), supported by WWF, UNDP, and private sector carbon buyers. DBC Project credits at $45/tonne provide financial incentive for further expansion. Target: 250,000 ha by 2030. Expanding mangrove cover to 250,000 ha could generate 10–15 million additional carbon credits annually — worth $450M–$675M at current DBC prices.

GB Forest Conservation — Biodiversity & Blue Carbon

Gilgit-Baltistan's high-altitude forests and rangelands are critical carbon sinks under threat from GLOF damage, unsustainable logging, and climate warming. AKDN's Community-Based Natural Resource Management programme supports community forest committees. VCS REDD+ credit development underway for select GB forest areas.

Punjab Urban Forestry — 10 Million Trees

Punjab's Urban Forestry Programme has planted 10 million trees in Lahore, Faisalabad, and Rawalpindi's green belts and medians, targeting the urban heat island effect. Evidence of 1–2°C local temperature reduction in densely planted areas.

SECTION VI

MITIGATION ACTIONS, PRIORITIES & UPDATES

Pakistan's decarbonisation initiatives — energy, transport, industry, agriculture, and waste

NDC 3.0 and Pakistan's Mitigation Commitments

Pakistan's NDC 3.0, submitted in late 2025, targets a 50% reduction in emissions by 2030 and 60% renewable electricity by 2035 — subject to external climate finance. These are the most ambitious commitments Pakistan has made, but the Climate Change Performance Index 2026 rates Pakistan 'very low' on renewable energy implementation — revealing a significant gap between targets and delivery. The critical mitigation priorities for 2026 are: operationalising the carbon market framework; completing the national GHG inventory; launching the first sectoral ETS pilots; and accelerating deployment of solar, wind, and biomass energy.

Pakistan's Solar Revolution: 4,500 MW and Growing

Pakistan's solar capacity has grown from near-zero in 2019 to an estimated 4,500 MW by end-2025 — one of the fastest solar uptake rates in the developing world. Driven by collapsing panel prices (now $0.22/Wp at mini-grid scale), unreliable grid electricity, and savvy entrepreneurs, rooftop solar has become the default choice for middle-class households across Lahore, Islamabad, and Karachi. Yet four major obstacles threaten to stall the revolution: net metering policy uncertainty (NEPRA has repeatedly revised buyback rates downward); grid absorption constraints; financing gaps for low-income households; and the absence of a national battery storage policy.

Wind Energy: Gharo Corridor — 1,000 MW Expansion on Track

Pakistan's wind energy potential — among the highest in Asia, with wind speeds of 7–10 m/s in the Gharo-Keti Bandar corridor and coastal Balochistan — is being steadily harnessed. Q1 2026 saw financial close for two additional wind projects totalling 150 MW. The target of 1,000 MW of new wind capacity by 2028 remains on track, with ADB co-financing confirmed for Phase 2.

Pakistan's Electric Vehicle Revolution — Cities Leading the Way

Pakistan's public transport is undergoing a quiet but significant decarbonisation revolution. In October 2025, Yutong delivered 400 electric buses — E12PRO and E9 models — to Punjab Province, entering service across 19 cities and districts. Islamabad commissioned 160 electric buses across 21 routes, carrying 125,000 passengers daily with a target to double to 250,000. Karachi received 34 electric buses plus 5 double-decker buses from China in January 2026; Rawalpindi launched 80 e-buses on 10 routes. Punjab's CM Maryam Nawaz Sharif's flagship Punjab Electric Buses Project targets 1,500 buses across 10 major cities by 2027 at a flat fare of PKR 20 with free rides for students, senior citizens, and persons with disabilities.

City / Province	Fleet Size	Routes / Cities	Status	Key Features
Islamabad (ICT)	160 e-buses	21 routes	Operational	125,000 pax/day; new depot commissioned Feb 2026

City / Province	Fleet Size	Routes / Cities	Status	Key Features
Punjab (19 cities)	400+ e-buses (Yutong)	19 cities	Operational	E12PRO/E9 models; PKR 20 flat fare; 1,500 target by 2027
Rawalpindi	80 e-buses	10 routes	Launched	Linked to Islamabad metro network; Range Road route
Karachi (Sindh)	34 EV + 5 double-decker	Shahrah-e-Faisal corridor	Clearance Jan 2026	115–120 pax/bus; air-conditioned; from China
Lahore Green E-Taxi	1,100 e-taxis (pilot)	Lahore	Pilot 2026	PKR 3.5B subsidy; CM Green E-Taxi Programme

INDEPENDENT CRITIQUE • Why Pakistan Must Build, Not Just Buy, Electric Vehicles

Every EV bus purchased from Yutong or BYD is a missed opportunity to build Pakistan's manufacturing base. The foreign exchange cost of importing 400 buses at an estimated $200,000–350,000 each represents $80–140 million in outflows. Pakistan's automotive industry — anchored in Karachi, Lahore, and Faisalabad — has the engineering capacity to localise EV bus production: motor-controller electronics, battery management systems, and body fabrication are all within reach with the right incentive framework and technology transfer agreements.

CAPI Recommendations

Negotiate 30–50% localisation clauses in all future EV procurement contracts.

Establish a National EV Manufacturing Development Fund — PKR 10 billion over 5 years.

Fast-track technology transfer agreements with Chinese OEMs for battery assembly in Pakistan.

Create EV industrial parks in Karachi, Lahore, and Faisalabad leveraging SEZ incentives.

Biogas, Biochar, and Organic Farming

Pakistan's agricultural mitigation potential is enormous and largely untapped. Punjab and Sindh farmers burn an estimated 40–50 million tonnes of crop residue annually — costing PKR 200 billion in air quality damage, soil carbon depletion, and lost bioenergy potential. The January 2026 Lahore smog crisis — with AQI above 500 for 14 consecutive days — is directly linked to this field burning. Three mitigation-adaptation co-benefit solutions are available:

- Biochar (pyrolysis of residue): Sequesters 5–10 million tCO_2e/year; improves soil water retention (15–30%); increases crop yields (10–20%); reduces chemical fertiliser needs (20–40%); earns $150–450M/year in carbon credits
- Biogas (livestock waste digestion): 190M livestock × 700M tonnes waste/year = 700,000 toe/year potential — equivalent to 10% of LPG consumption; household digesters replace LPG and generate organic fertiliser
- Organic farming (zero chemical inputs): Reduces synthetic fertiliser use and runoff; improves soil carbon sequestration; creates premium-priced export opportunities for organic cotton, rice, mangoes

Waste Management & Circular Economy

Pakistan generates an estimated 49.6 million tonnes of municipal solid waste annually, with recovery rates below 10%. Lahore Waste Management Company and Karachi's Sindh Solid Waste Management Board are scaling up landfill gas capture, waste-to-energy pilots, and formal recycling chains. Methane capture from municipal landfills alone could generate 3–5 million tCO_2e/year in carbon credits. Pakistan's transition to a circular economy — supported by SECP's green sukuk framework and SBP's green banking guidelines — is a precondition for industrial decarbonisation compliance with future CBAM extensions.

Construction Industry Decarbonisation & Green Buildings

Cement alone accounts for ~6% of Pakistan's emissions, with steel and bricks contributing another 4–5%. Pakistan's cement industry — fifth-largest in Asia — must transition to clinker substitution (fly ash, slag, natural pozzolana), alternative fuels (RDF from MSW), and eventually carbon capture. The Pakistan Green Building Council's voluntary certification is the first step; mandatory green building codes for all public buildings and commercial construction above 50,000 sq ft should follow by 2027.

Long-Term Energy Indigenisation & Just Transition

Pakistan's energy future must balance three imperatives: decarbonisation (NDC 3.0 obligation), energy security (reducing import dependence on LNG, coal, and crude), and just transition (protecting coal mining communities, oil sector workers, and legacy thermal plant staff). A National Just Transition Framework — covering re-skilling, community diversification, and social protection — does not yet exist. It must be a priority deliverable for the Ministry of Climate Change in 2026.

SECTION VII

CLIMATE FINANCE & CARBON MARKETS

Loss & Damage, Article 6, carbon standards, digital MRV, and funding pipelines

Loss & Damage Fund: State of Play — Q1 2026

The Loss and Damage (L&D) Fund — operationalised at COP28 Dubai — remains critically underfunded. Total pledges stand below $1 billion against an estimated annual need of $400 billion for climate-vulnerable nations. Pakistan has not yet submitted a formal L&D access proposal — a critical gap given the 2022 floods alone caused $30 billion in documented losses. The NDA (National Designated Authority) under the Ministry of Climate Change must prepare a comprehensive L&D documentation package in 2026, covering: GLOF losses in Gilgit-Baltistan; flood losses in Sindh and Balochistan; heat-wave mortality in Karachi; and drought losses in southern Punjab.

Pakistan's Carbon Market: Integrity, Opportunity, and the Road to Article 6 Revenue

Pakistan's carbon market potential is substantial but underdeveloped. The Delta Blue Carbon project auctions credits at $29.72–45/tonne (premium to global VCM average of $3–5). The Billion Tree forests can support REDD+ and ARR credits; crop residue avoidance (biochar) can generate up to 15 million tCO_2e/year. Unlocking this potential requires three parallel tracks: (1) an operational domestic carbon market framework with a national registry; (2) Article 6.2 bilateral agreements with buyer countries (Japan, Korea, Singapore, Switzerland are prime candidates); and (3) capacity building in MRV, verification, and project development.

The Carbon Market Ecosystem: Key Standards

- Verra VCS v5 (2025) — strengthened integrity requirements; Pakistan's projects must update for premium market access
- Gold Standard — premium pricing for community-centred projects with SDG co-benefits
- ART TREES — jurisdictional REDD+ methodology; relevant for KP Billion Tree scale-up
- CCB Standards — added layer of biodiversity and community co-benefit verification
- PACM / Article 6.4 (UN) — to be operationalised in 2026; Pakistan should be first-mover applicant

Pakistan's Carbon Credit Asset Portfolio

Pakistan's portfolio potential at full development: Blue carbon (mangroves) — 10–15M credits/year at $45/tonne = $450–675M; Afforestation (Billion Tree) — 15–25M credits/year at $8–15/tonne = $120–375M; Biochar / residue avoidance — 5–10M credits/year at $20–50/tonne = $100–500M; Methane avoidance (livestock, landfill) — 3–8M credits/year at $10–30/tonne = $30–240M. Combined realistic potential: $700M–$1.8B/year in high-integrity carbon finance.

AI, Tokenization, and Digital MRV: The Future of Carbon Markets

The global carbon market is undergoing a digital revolution that could resolve long-standing integrity concerns. Three technology pillars are emerging:

- Blockchain tokenization: Each carbon credit becomes a non-fungible token (NFT) with immutable ownership history — preventing double counting and enabling fractional ownership
- Digital MRV (dMRV): Satellite remote sensing + IoT sensors + blockchain records replace manual verification for many project types — reducing costs by 60–80%
- AI/ML analytics: Machine learning models detect deforestation alerts, estimate carbon stocks, and flag anomalous emissions — all near-real-time. Verification time reduced from 45 days to under 24 hours.

The tokenized carbon market is forecast to grow from $5.3 billion in 2025 to $13.4 billion by 2033. Verra and S&P Global Commodity Insights announced a registry partnership powered by distributed ledger technology. The Singapore AirCarbon Exchange uses blockchain for price transparency and reduced intermediation costs.

Pakistan's Digital Carbon Market Roadmap — 3 Steps

Step 1 (2026): Establish a national dMRV platform using NASA POWER satellite data and GCISC atmospheric monitoring networks to provide the data layer for carbon project verification.

Step 2 (2027): Pilot tokenization of Indus Delta Blue Carbon and Billion Tree credits on a compliant blockchain registry (linked to Verra or Gold Standard).

Step 3 (2028): Launch Pakistan's National Carbon Exchange, linked to regional Article 6 bilateral agreements and domestic ETS for industrial facilities.

CBAM: Pakistan's Industrial Finance and Trade Challenge

By 2026, the EU CBAM is fully integrated with the EU ETS. Importers bringing in products with emissions above prescribed limits must purchase CBAM certificates replicating the weekly ETS allowance prices. Currently 1.23% of Pakistan's exports are directly at risk (cement, steel, aluminium, fertilisers, electricity, hydrogen), but the potential inclusion of textiles — representing 60% of exports — would be existential. Pakistan's textile sector employs 40 million people and generates 60% of export revenue.

Climate finance for industrial decarbonisation is available through multiple channels: SECP Green Bond Framework (first PKR 20B green sukuk issued 2025); SBP Green Banking Framework (TCFD-aligned climate risk disclosure); IsDB $2B Pakistan Green Economy commitment; ADB Climate Finance Direct facility at 3–4% interest rates (versus commercial bank rates of 16–18%).

Funding Opportunities — Q2 2026

GRANT — GCF READINESS • Green Climate Fund — Readiness Programme

Up to $3M/year for capacity building, NAP operationalisation, and institutional strengthening. Pakistan's MoCC NDA is eligible. Rolling deadline — apply immediately. 💰 Up to $3M/yr | 📅 Rolling | 🌐 greenclimate.fund

BLENDED FINANCE • ADB Climate Change Fund — Pakistan ($2.1B Portfolio)

ADB has earmarked $2.1B for Pakistan's climate portfolio 2024–2030. Priority areas: water security, flood resilience, renewable energy, urban adaptation. Project proposals accepted year-round through the Pakistan Resident Mission. 💰 $2.1B total (2024–30) | 📅 Project-based | 🌐 adb.org

RESEARCH GRANT — CGIAR • IPSAC 2026 — Precision Agriculture Research

CGIAR research grants open to Pakistani institutions on climate-smart agriculture ($150K–$500K range). Following the 3rd IPSAC 2026 Conference at KFUEIT Multan, February 12–13, 2026. 💰 $150K–$500K | 📅 April 30, 2026 | 🌐 cgiar.org

BLENDED FINANCE — $125B • GCF Tropical Forest Forever Facility (TFFF)

Launched at COP30 by Brazil. Pakistan's mangrove ecosystems and Billion Tree Initiative are potentially eligible for payouts beginning 2026. Apply through Sindh Forest Department and Ministry of Climate Change. 💰 $125B fund | 📅 Payouts from 2026 | 🌐 cop30.br

LOSS & DAMAGE • Loss & Damage Fund — First Access Window

First disbursements expected in 2026. Pakistan must submit formal access proposals through its NDA. GB GLOF-affected communities, Sindh flood-affected households, and Karachi heat-vulnerable populations are eligible. 💰 <$1B pledged currently | 📅 Submit immediately | 🌐 unfccc.int

Fund / Instrument	Available Amount	Deadline	Priority Areas
GCF Readiness Programme	Up to $3M/year	Rolling	NAP, carbon market framework, institutional strengthening
ADB Climate Change Fund	$2.1B (2024–30)	Project-based	Water security, flood, RE, urban adaptation
SECP Green Sukuk Framework	Market-based	Active	RE, energy efficiency, clean transport
Loss & Damage Fund	<$1B pledged	Submit now	Flood & GLOF losses, displacement, L&D documentation

Fund / Instrument	Available Amount	Deadline	Priority Areas
GCF Tropical Forest (TFFF)	$125B fund	Payouts 2026	Forest conservation, mangrove restoration, REDD+
IsDB Climate Action Portfolio	$2B Pakistan portfolio	Project-based	Green economy, industrial decarbonisation, clean energy
IFC Climate Finance Direct	$500K–$5M per project	Ongoing	Clean tech startups, climate-smart agriculture, circular economy

SECTION VIII **TECHNOLOGIES & INNOVATIONS**

Clean technology, renewable energy, and innovative solutions for Pakistan's climate transition

Least-Cost Electrification: The LCEDT v2.0 Framework

RESEARCH PAPER SNAPSHOT • Least-Cost Electrification Planning for 1,015 Unserved Settlements: LCEDT v2.0

Dr. Irfan Yousuf, Dr. Abdul Razzaq Ghumman, Dr. Khomairy | April 2026 | CAPI / PPIB / World Bank ESMAP

1,015 settlements assessed across all four provinces: Punjab (340), KP (331), Balochistan (185), Sindh (159)

284,190 households and 1.85 million people gaining access to productive-quality, reliable electricity

Mean off-grid LCOE: $0.244/kWh vs. reliability-adjusted grid: $0.637/kWh — 161% cost gap

84.7% of settlements: off-grid solutions cheaper than reliability-adjusted grid extension

Biomass/bagasse dominates (49.1%), followed by micro-hydropower (18.3%), Wind+BESS (15.5%), Grid (15.3%), Solar+BESS (1.9%)

Solar SHS displaced from 64.2% recommendations (REM original) to 1.9% when reliability and productive-use criteria are applied

Portfolio CAPEX: $849M. Equity IRR: 21.5% under blended finance. Concessional financing gap: $672M

Article 6 carbon revenue: $5.2–7.8M/year from 129,429 tCO_2e/yr avoided emissions

ESCO model with productive-use anchor loads achieves project IRR of ~8–15% without additional VGF

The Reliability Paradigm Shift

The paper's central finding: Pakistan's rural grid supply averages 14 hours/day — meaning 42% of potential productivity is forfeited. When this reliability penalty is properly accounted for (true grid LCOE rises to $0.637/kWh), decentralised off-grid solutions are 2.6 times cheaper on average. Solar SHS — previously recommended for 64.2% of settlements — is entirely displaced by biomass, hydropower, and wind+BESS when reliability and productive-use criteria are applied. This single methodological correction changes the entire electrification technology hierarchy for Pakistan.

Biomass: Pakistan's Most Overlooked Energy Resource

Biomass/bagasse gasification is the least-cost solution for 49.1% of settlements — all 498 biomass-eligible villages in Punjab and Sindh. Pakistan generates approximately 80 million tonnes of agricultural residue annually, of which 40–50 million tonnes are currently burned in fields — causing $3–6 billion in annual air quality damage and contributing significantly to the Lahore smog emergency. At a mean biomass LCOE of $0.154/kWh (range: $0.068–0.320/kWh), these systems simultaneously provide grid-quality electricity, create a market for crop residue, and contribute to NDC emissions reduction targets.

LCOE by Technology — Key Results

Technology	Mean LCOE ($/kWh)	Min LCOE	vs. Grid (Rel-Adj)	% of Recommendations
Biomass / Bagasse Gasification	$0.154	$0.068	−75.8%	49.1%
Micro / Mini Hydropower	$0.153	$0.079	−76.0%	18.3%
Hybrid (Best Mix)	$0.198	$0.079	−68.9%	N/A (component)
Wind + BESS	$0.445	$0.350	−30.1%	15.5%
Solar PV + BESS	$0.518	$0.413	−18.7%	1.9%
Grid Extension (Nominal)	$0.601	$0.320	−5.7%	N/A
Grid Extension (Reliability-Adjusted)	$0.637	$0.340	Baseline	15.3%
Solar Home System (SHS)	$0.280	$0.210	−56.0%	0.0%

Blue Economy & Hydrogen Innovations

Pakistan's Indus Delta hosts the world's 6th largest mangrove forest — approximately 160,000 hectares. The Delta Blue Carbon (DBC) Project auctioned credits at $29.72/tonne in 2023, with 2022 vintage credits at $45 as of 2025. Blue carbon categories grew 257% in average price as of 2025 (Ecosystem Marketplace). Expanding mangrove cover to 250,000 ha could generate 10–15M additional credits annually worth $450M–$675M.

Pakistan's Thar coalfield — with estimated reserves of 175 billion tonnes — could support blue hydrogen production through coal gasification with carbon capture, for use in fertiliser manufacturing. Pakistan imports 2–3 million tonnes of fertiliser annually at a cost of $1–1.5 billion in foreign exchange. Domestically produced blue hydrogen from Thar coal, converted to ammonia and urea with CO_2 capture, could eliminate this import dependency and reduce fertiliser prices for farmers by 30–50%. The long-term pathway — once RE costs fall further — should transition to green hydrogen using Thar's extraordinary solar irradiance (5.5+ kWh/kWp/day).

> **Need for Local Manufacturing**
>
> Any Thar-based blue hydrogen programme must require minimum 40% local content — catalysts, pressure vessels, control systems, and construction — to build indigenous industrial capability and reduce future import dependence. Water requirements (15–20 litres per kg of hydrogen) must be managed through closed-loop recycling given Thar's water-stressed environment.

Green Building Technology Opportunities

Pakistan's building stock could reduce energy demand by 30–40% through: mandatory solar-ready roof design (enabling future installation); high-reflectance cool roofs (reducing building temperatures by 3–5°C); cross-ventilation design enabling natural cooling; and green roofs/walls integrated into urban planning. All cost-effective at design stage — retrofitting is 3–5x more expensive. The Pakistan Green Building Council's voluntary standards need legislative teeth to drive adoption before the current construction boom locks in decades of high-carbon building stock.

SECTION IX **CASE STUDIES & FIELD REPORTS**

On-the-ground evidence from Pakistan's climate frontlines

CASE STUDY 01 • GLACIAL LAKE OUTBURST FLOODS • GILGIT-BALTISTAN

GLOF-II Early Warning Systems in Hunza Valley: Progress, Gaps, and the Road Ahead

Hunza Valley, Gilgit-Baltistan | Q1 2026 | UNDP–Pakistan / Government of Pakistan | Sources: PMD, UNDP GLOF-II, AKDN

Pakistan holds more glaciers outside the polar regions than any other country — approximately 7,253 glaciers, many rapidly destabilising due to accelerating warming. Glacial Lake Outburst Floods (GLOFs) represent one of the most technically complex and deadly climate hazards facing the country. In Q1 2026, the Hunza Valley witnessed continued glacial retreat and two significant GLOF events that triggered evacuations of over 1,200 people and caused damage to road infrastructure worth an estimated PKR 800 million.

The UNDP–Government of Pakistan GLOF-II project — covering 33 high-risk communities — has installed automated lake-level sensors, real-time data transmission systems, community radio alert networks, and trained local disaster management committees. In the two Q1 2026 events, warning times of 3–4 hours were successfully communicated, enabling evacuations that may have saved dozens of lives.

However, the gap between what has been achieved and what is needed remains alarming. Pakistan has over 2,000 glacial lakes, of which at least 33 are identified as dangerous by the Pakistan Meteorological Department. The GLOF-II project covers 33 communities — less than 2% of the at-risk population. Funding for expansion has been pledged under ADB and GCF frameworks, but disbursement has been delayed by procurement procedures and government counterpart funding constraints.

A significant structural issue is the mismatch between scientific monitoring (which is relatively well-funded by international donors) and community-level response infrastructure (which is chronically underfunded). Sensors can detect a GLOF in Attabad Lake; but if the downstream communities in Gojal have no functioning evacuation routes, no trained responders, and no emergency supplies pre-positioned, the warning system is only half-useful.

GB communities have adapted to glacial hazards for millennia through traditional knowledge, community-based water governance, and seasonal migration patterns. Climate change is overwhelming these adaptive systems faster than communities can respond. The cultural dimension of GLOF impact is multi-layered: mountain irrigation systems (glaciers are the water source for 80% of GB agriculture) are being disrupted; mountain pastures are shifting upward; sacred sites are being swept away; and mountain tourism is disrupted by GLOF-blocked roads.

Key Outcomes & Recommendations

33 communities covered by GLOF-II early warning — against 2,000+ at-risk sites nationally.

Two successful Q1 2026 evacuations — saving an estimated 30+ lives.

Scale GLOF coverage to 200+ communities under GLOF-III with dedicated GCF financing.

Address 'last mile' infrastructure gaps — evacuation routes, emergency caches, community responder training.

Integrate GLOF data into Pakistan's National Spatial Data Infrastructure.

Pakistan's NDA must develop a comprehensive GB Loss & Damage documentation package for submission to the L&D Fund secretariat in 2026.

CASE STUDY 02 • CLIMATE FINANCE GOVERNANCE • FEDERAL GOVERNMENT

Climate Budget Tagging in Pakistan: Building the Financial Architecture for International Climate Finance Access

Islamabad — Federal Government | February 2026 | Ministry of Finance / MoCC&EC | Sources: IMF PFM Blog

In a development with major long-term implications for Pakistan's climate finance access, the federal government has successfully embedded climate budget tagging into its core financial management systems. As documented by the IMF's Public Financial Management Blog in February 2026, Pakistan now routinely tags climate-relevant expenditures across the federal budget — a prerequisite for accessing concessional international climate finance from institutions like the Green Climate Fund, which 'require clear expenditure tracking before approving funds.'

The journey to this milestone was neither fast nor glamorous. It began in 2018 with pilot tagging of federal PSDP projects, expanded in 2022 to cover recurrent expenditure, and in 2024 was fully integrated into the IFMIS (Integrated Financial Management Information System) — meaning climate tags are now applied at the point of transaction, not as a post-hoc reporting exercise. The Budget Call Circular now explicitly requires ministries to identify climate-relevant spending, and the Finance Minister's budget speech reports tagged amounts.

The IMF's assessment is notably positive: 'Pakistan is making good progress.' Lessons from Pakistan's experience, they note, confirm that 'starting small, investing in institutional systems, and building ownership are key to sustainable climate budget tagging.' For Pakistan, this is more than an accounting exercise — it is the financial architecture that determines access to the GCF's $3 million annual Readiness programme, to ADB's $2.1 billion Pakistan climate portfolio, and to the Loss & Damage Fund's first disbursement window in 2026.

Three structural gaps remain. First, provincial budgets — where most adaptation and implementation spending occurs — have not yet adopted climate budget tagging. Sindh and Punjab are in discussion; KP and Balochistan have not initiated. Second, the current system tags expenditure but does not yet report implementation outcomes — meaning we know what is spent but not what is delivered. Third, the climate budget tagged amount is not publicly reported with the same transparency as the overall budget — reducing public accountability and civil society engagement.

CAPI Assessment and Recommendations

Pakistan's climate budget tagging is a genuine institutional win that should be celebrated and scaled.

Provincial rollout is the critical next step — MoCC and Ministry of Finance should support Sindh and Punjab as first movers, with KP and Balochistan to follow by FY 2027–28.

Outcome reporting must be integrated — tagged expenditure should link to NDC/NAP implementation indicators.

Public disclosure through an annual 'Climate Finance Transparency Report' — published alongside the federal budget — would enhance accountability and build public support for climate investment.

SECTION X **RESEARCH STUDIES & ARTICLES**

Original research, analytical articles, and scientific developments in climate change

RESEARCH ARTICLE • ENERGY ACCESS & RURAL ELECTRIFICATION

Pakistan Least-Cost Electrification Decision Tool (LCEDT v2.0)

A Multi-Technology, Multi-Criteria Decision Framework for 1,015 Unserved Settlements

Dr. Irfan Yousuf (CAPI), Dr. Abdul Razzaq Ghumman, Dr. Khomairy | *Submitted: April 2026* | *Keywords: rural electrification, least-cost planning, mini-grid, multi-criteria analysis, blended finance, carbon credits*

Abstract / Executive Summary

Universal electricity access remains one of Pakistan's most pressing development imperatives. Despite a national electrification rate of approximately 73%, an estimated 38–45 million people across 1,000–6,000 settlements remain without reliable grid-quality supply. This paper presents the LCEDT v2.0, a comprehensive geospatial-financial decision framework applied to 1,015 unserved settlements drawn from the VIDA/REM national database. The model integrates six generation technologies (solar PV with battery storage, wind turbines, micro- and mini-hydropower, biomass gasification and biogas, bagasse cogeneration, and hybrid configurations) with a reliability-weighted multi-criteria scoring engine, a 20-year financial model, and 15 financing instruments including concessional debt, viability gap funding, results-based finance, carbon credits, green sukuk, and social impact bonds.

Three principal findings emerge. First, reliability-adjusted grid LCOE ($0.637/kWh) exceeds the optimal off-grid technology LCOE ($0.244/kWh) in 84.7% of assessed villages — a 61.6% cost advantage for decentralised solutions. Second, biomass/bagasse (49.1%), micro-hydropower (18.3%), and wind+BESS (15.5%) collectively dominate the least-cost recommendation set when multi-criteria scoring incorporates reliability (25%) and productive-use capability (20%) — displacing solar SHS from any primary recommendation position. Third, the 1,015-village portfolio requires $849 million in capital investment, yielding an equity IRR of 21.5% under a blended finance structure, despite a project-level IRR of −0.9%, quantifying a $672 million concessional financing gap.

Methodology: The Multi-Criteria Scoring Matrix

Six criteria were weighted to determine recommended technology: LCOE Efficiency (30%); Supply Reliability / 24-hour capability (25%); Productive Use Capability (20%); Social Impact / poverty targeting (10%); Local Resource Utilisation (10%); and Implementation Risk (5%). Solar Home Systems (SHS) were excluded as primary recommendations for any settlement assigned MTF Tier 3 or above — receiving a score of 0 on productive-use capability — reflecting the categorical technical distinction between SHS (DC, intermittent, Tier 1–2 only) and grid-quality mini-grid supply (AC, continuous, Tier 3+).

Policy Recommendations from the LCEDT Study

- Adopt reliability-adjusted LCOE as the mandatory planning metric for all Pakistan electrification decisions — the current practice of using nominal grid tariff ($0.08/kWh) as the comparison baseline understates true grid cost by a factor of 1.08–1.89
- Reclassify Solar Home Systems as transitional technology, not electrification solutions — SHS connectivity does not achieve SDG 7 quality standards

- Establish a dedicated Biomass Electrification Programme for Punjab and Sindh targeting 498 biomass-eligible settlements
- Accelerate KP Micro-Hydropower Development — 186 KP settlements with hydro LCOEs as low as $0.079/kWh represent the single most cost-effective electrification opportunity in Pakistan
- Establish Pakistan's first Article 6.2 bilateral carbon agreement to monetise 129,429 tCO_2e/year in avoided emissions at $40–60/$tCO_2e$
- Upgrade demand targeting to MTF Tier 4 to achieve project-level financial viability — Tier 4 increases Year 1 revenue by 38% and closes the NPV gap by $380–480 million

CRITICAL ANALYSIS ARTICLE • TRADE POLICY • CBAM AND PAKISTAN'S INDUSTRIAL FUTURE

EU Carbon Border Adjustment Mechanism: Pakistan's Textile Threat, Industrial Response, and Preparedness Roadmap

Policy Desk, CAPI | Q1 2026 | Sources: SDPI, EU Commission, World Bank, SECP

By 2026, the CBAM is fully integrated with the EU's Emissions Trading System. Importers bringing in products with emissions above prescribed limits must purchase CBAM certificates replicating the weekly ETS allowance prices. For Pakistan, this is not a distant regulatory concern — it is an immediate competitive threat to the country's $10 billion EU textile export market. Currently only 1.23% of Pakistan's exports are directly at risk under CBAM (covering cement, steel, aluminium, fertilisers, electricity, and hydrogen). However, the potential inclusion of textiles — the sector representing 60% of Pakistan's exports — in a future CBAM expansion would be existential for Pakistan's industrial base.

> ***Pakistan's textile sector employs 40 million people and generates 60% of export revenue. EU CBAM expansion to textiles represents an existential risk that requires immediate preparation.***

Pakistani industry must act now on three fronts. First, emissions measurement: most Pakistani industrial facilities have never conducted a formal Scope 1–3 GHG inventory. Without accurate baseline emissions data, any CBAM compliance or carbon credit claim is impossible. The GCISC-ADB MRV workshop (February 2026) is a start — but mandatory GHG reporting for all facilities above 25,000 tCO_2e/year, enforced by SEPA, must follow. Second, energy transition: Pakistan's textile mills must develop decarbonisation roadmaps targeting renewable energy sourcing, energy efficiency upgrades, and potentially green hydrogen for process heat. Third, carbon market access: Pakistani exporters who undertake verified emissions reductions can potentially offset CBAM costs through carbon credits — but only if Pakistan's domestic carbon market framework is operational and internationally recognised.

INDEPENDENT CRITIQUE • Pakistan's CBAM Preparedness Gap: No Strategy, No Timeline, No Coordination

Despite extensive awareness of CBAM among Pakistani trade officials and researchers, there is no published national CBAM preparedness strategy, no CBAM task force in the Ministry of Commerce or Ministry of Industries, and no timeline for mandatory industrial GHG reporting. Every year of delay makes the transition more expensive and the supply chain disruption risk larger. When CBAM formally expands to textiles — and the trajectory is clear — Pakistani exporters will face a cliff edge if they have not started measuring emissions today.

CAPI Recommendations

Establish a Ministry of Commerce/MoCC CBAM Task Force by June 2026.

Mandate GHG reporting for 200 largest industrial emitters by January 2027.

Develop a Pakistan Textile Sector Decarbonisation Roadmap with IFC support.

Align Pakistan's carbon market regulations with EU's CBAM verification requirements.

Engage EU Commission for technical cooperation on CBAM compliance capacity building.

CULTURAL & ENVIRONMENTAL ANALYSIS • GILGIT-BALTISTAN

When Glaciers Retreat, Cultures Disappear: The Invisible Human Cost of GLOFs in Gilgit-Baltistan

Afia Baig, Environmental Journalist | Q1 2026 | Sources: PMD, UNDP GLOF-II, AKDN, WWF-Pakistan

When a glacial lake outburst flood destroys a village in the Hunza Valley, the international community counts economic damages and displaced persons. It rarely counts what cannot be monetised: the cultural knowledge encoded in centuries-old irrigation systems (karezes), the poetry traditions of the Burushoski and Shina communities, the herbal medicine knowledge embedded in mountain pastoral practices, and the oral histories of glacier-dependent livelihoods. Pakistan's Gilgit-Baltistan faces an accelerating cultural emergency that is also a climate emergency.

GB communities have adapted to glacial hazards for millennia through traditional knowledge, community-based water governance, and seasonal migration patterns. Climate change is overwhelming these adaptive systems faster than communities can respond. Mountain irrigation systems — glaciers are the water source for 80% of GB agriculture — are being disrupted by changed meltwater timing. Mountain pastures are shifting upward in altitude, forcing pastoralists to abandon traditional grazing lands. Sacred sites are being swept away by flash floods. Mountain tourism — a growing livelihood for GB communities — is disrupted by GLOF-blocked roads and destroyed hospitality infrastructure.

GB Sustainable Development Pathway

GLOF risk reduction (scaled early warning to 200+ communities); livelihood diversification away from glacier-dependent agriculture; cultural heritage documentation (traditional knowledge before it is lost); and climate-resilient tourism development. A dedicated GB Micro-Hydro Acceleration Programme targeting 50 MHP sites per year over four years would complete all 186 identified sites by 2028 at approximately $160 million total investment. GB communities deserve both early warning systems AND Loss & Damage compensation — they are among the world's most compelling cases for the L&D Fund.

SECTION XI INDEPENDENT VOICES

Unfiltered perspectives from scientists, economists, practitioners, and community voices

Climate Nexus Quarterly's Independent Voices section presents unfiltered, unsolicited perspectives from individuals working on the front lines of climate change in Pakistan and globally. Views expressed are those of contributors and do not represent CAPI's institutional position.

> *The GLOF warning systems we have installed in 33 communities are saving lives. But we have 2,000+ glacial lakes. At the current rate of funding, it would take 60 years to protect every at-risk community. The funding architecture must be dramatically accelerated — and the Loss and Damage Fund must specifically target GLOF communities, who did not create this crisis.*

Senior Hydrologist, Pakistan Meteorological Department
Glacial monitoring and GLOF early warning systems, Islamabad

> *Whilst the climate budget tagging system is a remarkable milestone towards achievement of a much bigger goal, tagging is not the same as spending. Pakistan may well be having optimum visibility over where climate-related allocations are identified; however the next critical step remains in ensuring that adequate climate finance actually flows with consistency. The gap between what is currently tagged and what is required under the National Adaptation Plan is vast, and this shortfall ought to be transparently reported without any greenwashing — not only to Parliament and development partners, but also to the public at large for their continued upskilling, commitment and support.*

Jahanzeb Amin
Development Economist and Public Finance Expert

“

Pakistan must not rely solely on external climate finance in the absence of the United States, but also strengthen domestic governance and implementation of its climate policies such as NAP 2023 and NCCP 2021. While the financial support from the Global North remains important, access to funding depends on the availability of credible and bankable projects. Therefore, alongside improving relations with partners like the European Union, China, and multilateral banks, Pakistan must focus on developing investment-ready projects and building institutional capacity, or risk losing opportunities to better-prepared countries such as Bangladesh and Indonesia.

Ameena Sohail
Institute of Policy Studies, Islamabad

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When the smog AQI was 500 in January, my children could not leave the house for two weeks. People in my neighbourhood cannot afford air purifiers. We hear about carbon markets and climate finance — but what we need is clean air today. The inequality of climate impacts within Pakistan is as unjust as the global inequality.

Dr. Saima Shafique
Climate Change and WASH Expert

“

Pakistan's solar revolution is remarkable — 4,500 MW in five years. But we are building a distributed energy system on top of a grid designed in the 1970s. Without emergency investment in grid modernisation and storage infrastructure, we risk a solar boom that cannot be sustained or integrated. The government must treat grid reform as a climate emergency equal to flood response.

Imran Yousuf
Renewable Energy Expert, Islamabad

> *Carbon emissions accounting is no longer optional — it is a trade requirement. Every year Pakistan delays its industrial GHG inventory, the CBAM compliance gap pushes exporters further away from compliance readiness. International buyers have already started incorporating carbon pricing into their supply chains. When CBAM formally expands to textiles — and it will — Pakistani exporters will face a serious compliance challenge. Pakistani exporters must be prepared. Measuring emissions today is not just about compliance; it is about securing market access and future competitiveness.*

Dr. Irfan Iftikhar
Trade & Climate Policy Advisor

> *The Delta Blue Carbon Project is proof that Pakistan's natural assets can generate international climate finance at premium prices. If we scale mangrove restoration to 250,000 hectares and layer in the Billion Tree forests and biomass avoidance credits, we are talking about a carbon finance portfolio worth hundreds of millions of dollars annually.*

Vardah Malik
Climate Finance and Carbon Market Expert

> *My village in Gilgit-Baltistan watched the glacial lake above us triple in size over the past decade. We received an early warning siren last year — that siren saved thirty lives when the lake burst. But the families who lost homes and crops received nothing from the Loss and Damage Fund. We need both early warning AND compensation. The Fund must reach communities like ours.*

Essa Khan
Transport Expert, Hunza Valley, Gilgit-Baltistan

> *Pakistan's CCPI ranking of 15th reflects our low per-capita emissions — not our climate ambition. We score 'very high' on GHG but 'very low' on renewable energy, and 'low' on climate policy. The NDC 3.0 is ambitious on paper; the implementation architecture simply does not exist to deliver it without urgent institutional reform — an independent Climate Commission, funded provincial action plans, and a binding adaptation budget floor.*

Hafsa Rizwan
Climate Policy and Carbon Market Expert

> *Pakistan emits less than one percent of global greenhouse gases, yet we face floods, glacial collapse, and deadly heat that rival the impacts felt anywhere on Earth. The question is no longer whether we act — it is whether the world's institutions will honour the financial commitments made to countries like ours, or leave us to absorb the cost of other nations' emissions alone.*

— Composite of Pakistani Climate Experts' Testimony
Q1 2026

SECTION XII

CAPI IN ACTION — Q1 2026 ACTIVITIES

Research, policy advocacy, and knowledge products delivered by CAPI between January and March 2026

Between January and March 2026, the Climate Action & Policy Initiative (CAPI) delivered a portfolio of research, advocacy, and knowledge dissemination activities across four of its core service streams: Policy Advocacy & Research, Investment & Finance Mobilisation, Capacity Building, and Public Awareness & Outreach. The selection below reflects CAPI's Q1 2026 footprint, as documented in this magazine's substantive chapters and in CAPI's own publications and formal submissions.

POLICY ADVOCACY & RESEARCH

FEDERAL / CDA

January 2026

Formal Objection to CDA's F-6 & F-7 Green Pockets Re-Planning Proposal

CAPI submitted a formal objection to the Capital Development Authority's proposal to re-plan 'un-assigned' land pockets in Sectors F-6 and F-7, Islamabad — arguing these are critical climate-adaptation infrastructure (green buffers, ventilation corridors, storm-water absorption zones, and biodiversity corridors connected to the 17,000-hectare Margalla Hills National Park).

The submission drew on IPCC regional projections, NASA urban-heat-island evidence, and CMIP6 scenarios for South Asia to show conversion to built-up uses would raise local temperatures by 2–3°C and worsen urban flood risk. CAPI recommended a full Strategic Environmental Assessment and re-designation of all 10 pockets as Urban Green Buffer / Urban Forest / Neighbourhood Parks.

FEDERAL / MOCC&EC

Q1 2026

National Adaptation Plan (NAP) Independent Critique

CAPI published an independent critique of Pakistan's revised NAP — welcomed at its January 2026 launch as a technically sound document — identifying three structural barriers to delivery: the funding mismatch between NAP requirements and actual climate expenditure; governance fragmentation across seven federal ministries and four provincial governments; and the absence of funded provincial action plans.

Featured in Section V of this issue, the critique calls for a Cabinet-level National Climate Coordination Committee, a 1%-of-GDP adaptation spending floor by 2027, and annual NAP implementation scorecards.

EU TRADE POLICY

Q1 2026

CBAM Preparedness Gap Analysis for Pakistan

CAPI's Policy Desk published a critical analysis of the EU Carbon Border Adjustment Mechanism's implications for Pakistan's industrial and textile base. The analysis — carried in Section X — documents that despite widespread awareness, Pakistan has no national CBAM preparedness strategy, no task force in the Ministry of Commerce or Ministry of Industries, and no timeline for mandatory industrial GHG reporting.

CAPI recommended establishing a Ministry of Commerce / MoCC CBAM Task Force by June 2026, mandatory GHG reporting for the 200 largest industrial emitters by January 2027, and a Pakistan Textile Sector Decarbonisation Roadmap.

GLOBAL / UNFCCC

Q1 2026

Analysis of US Withdrawal from UNFCCC/IPCC and Implications for Pakistan

CAPI's Editorial Team prepared a comprehensive analysis of the January 2026 US withdrawal from the Paris Agreement, UNFCCC, and IPCC — the first such withdrawal in the 34-year history of the UNFCCC — and its three-dimensional impact on Pakistan: climate finance, scientific credibility, and diplomatic positioning.

The analysis (Section II) flagged the 'conditionality trap' in Pakistan's NDC 3.0 and recommended urgent diversification to GCF, ADB, EU Global Gateway, and Loss & Damage Fund channels ahead of COP31 Antalya.

INVESTMENT & FINANCE MOBILISATION

RESEARCH / PPIB / WB ESMAP

April 2026

Research Paper: LCEDT v2.0 — Least-Cost Electrification for 1,015 Unserved Settlements

Led by CAPI CEO Dr. Irfan Yousuf with Dr. Abdul Razzaq Ghumman and Dr. Khomairy, this flagship research paper — developed through Q1 2026 and submitted in April — presents a multi-technology, multi-criteria decision framework for 1,015 unserved settlements (284,190 households; ~1.85 million people) across all four provinces.

Key findings: off-grid solutions are 2.6× cheaper than reliability-adjusted grid extension in 84.7% of villages; biomass dominates (49.1%); the $849M portfolio yields 21.5% equity IRR under blended finance with a $672M concessional finance gap; and Article 6 carbon revenue of $5.2–7.8M/year from avoided emissions. Featured in Sections VIII and X.

Q1 2026

Q2 2026 Funding-Opportunities Dossier for Pakistani Institutions

CAPI curated a structured pipeline of Q2 2026 climate-finance opportunities relevant to Pakistani applicants — covering the GCF Readiness Programme (up to $3M/year), the ADB Climate Change Fund ($2.1B portfolio), CGIAR / IPSAC 2026 research grants ($150K–$500K), the $125B Tropical Forest Forever Facility (TFFF) launched by Brazil at COP30, the Loss & Damage Fund first-access window, IsDB Climate Action Portfolio, and IFC Climate Finance Direct.

The dossier — published in Section VII — maps fund-to-priority-area alignment for Pakistan's NDA, Sindh Forest Department, provincial climate cells, and private-sector green-economy applicants.

CARBON MARKETS
Q1 2026

Pakistan Digital Carbon Market Roadmap (3-Step Concept Note)

CAPI's Climate Finance & Markets workstream developed a staged roadmap for operationalising Pakistan's digital carbon market infrastructure: (Step 1 — 2026) a national dMRV platform using NASA POWER satellite data and GCISC atmospheric monitoring; (Step 2 — 2027) tokenisation pilots for Indus Delta Blue Carbon and Billion Tree credits on a compliant blockchain registry linked to Verra or Gold Standard; and (Step 3 — 2028) a Pakistan National Carbon Exchange linked to Article 6 bilateral agreements and a domestic industrial ETS.

Carried in Section VII, the roadmap is CAPI's contribution to the operationalisation pathway envisaged under Pakistan's Carbon Market Policy Guidelines (COP29, Baku).

CAPACITY BUILDING & KNOWLEDGE PRODUCTS

PUBLICATION
March 2026

Launch of Climate Nexus Quarterly — Inaugural Issue (Q1 2026)

CAPI launched its flagship quarterly e-magazine, Climate Nexus Quarterly, with this inaugural Issue 1 covering the January–March 2026 period. The magazine is designed to bridge rigorous climate science and actionable policy — and to translate international climate governance decisions into implications for Pakistan.

Distributed free of charge to policymakers, parliamentarians, government officials, investors, academic institutions, development partners, bilateral and multilateral organisations, embassies, civil society, private-sector leaders, and the general public. The magazine will be published every quarter (Jan–Mar, Apr–Jun, Jul–Sep, Oct–Dec).

GOVERNANCE
Q1 2026

Policy & Regulatory Tracker (21 Items) — CAPI Assessment

CAPI compiled and assessed 21 active climate policies, regulations, and international frameworks relevant to Pakistan — including NDC 3.0, the Climate Change Act Amendment Bill, NAP, climate budget tagging, Pakistan's Carbon Market Guidelines, the US withdrawal from the Paris Agreement/UNFCCC, COP30's $1.3T roadmap, the 59 GGA indicators, the Loss & Damage Fund, EU CBAM, Verra VCS v5, and the Australian ACCU Safeguard Mechanism review.

For each item, CAPI provides an independent status assessment and a specific recommended action — giving ministries, parliamentarians, and development partners a single quarterly snapshot (Section IV).

FIELD REPORTS
Q1 2026

Case Study Series — Field-Level Evidence

CAPI produced two field-based case studies for Q1 2026: (i) GLOF-II Early Warning Systems in Hunza Valley — documenting 3–4 hour warning times, two successful Q1 2026 evacuations, and the gap between 33 covered communities and 2,000+ at-risk sites nationally; and (ii) Pakistan's Climate Budget Tagging Architecture — documenting the 2018–2024 IFMIS integration journey and identifying provincial rollout as the critical next step.

The case studies (Section IX) serve both as evidence for policy recommendations and as reference material for development partners designing future programmes.

PUBLIC AWARENESS & CONVENING

Q1 2026

Independent Voices Platform — Q1 2026 Cohort (9 Contributors)

CAPI convened an Independent Voices cohort of nine contributors for Q1 2026 — covering perspectives from senior hydrologists, development economists, power-sector experts, trade and climate policy advisors, WASH specialists, carbon-market practitioners, GB community voices, and climate policy researchers.

The cohort (Section XI) is published on an unfiltered, unsolicited basis — views are those of contributors and not CAPI's institutional position. The platform is designed to widen the climate-policy conversation in Pakistan beyond the capital-based technocracy.

ENGAGEMENT
Rolling

Call for Contributions — Issue 2 (Q2 2026)

CAPI has opened a Q2 2026 call for contributions to Climate Nexus Quarterly, welcoming expert analysis, field reports, research summaries, opinion pieces, and community stories from researchers, policymakers, practitioners, civil society, private sector, and community voices. All contributors retain full republication rights.

Issue 2 (Apr–Jun 2026) will cover UNFCCC SB64 Bonn outcomes, COP31 Antalya preparations, Pakistan monsoon readiness, green hydrogen, industrial decarbonisation, climate and health, disaster preparedness, and Paris Agreement Article 6.2/6.4. Contributions deadline: July 1, 2026. Contact: ceo@capiinitiate.com.

Note on This Section

The activities summarised above are drawn from CAPI's substantive Q1 2026 outputs as reflected in this magazine and in CAPI's formal submissions and published materials. Readers are invited to consult CAPI's website (capiinitiate.com) and LinkedIn pages for the most current listing of engagements, events, and partnerships — including items added after this issue's editorial cut-off.

Upcoming Events — Q2 2026

- April 2026 — Colombia Summit: COP30 Fossil Fuel Transition and Deforestation Roadmaps
- April 22, 2026 — Earth Day: Global Climate Mobilisation
- June 2026 — UNFCCC SB64 Subsidiary Body Sessions — Bonn, Germany
- June 2026 — GGA Adaptation Indicators Refinement — Bonn
- November 2026 — COP31 — Antalya, Turkey

Contribute to Issue 2 (Q2 2026)

We welcome expert analysis, field reports, research summaries, opinion pieces, and community stories from researchers, policymakers, practitioners, civil society organisations, private sector actors, and community voices. All contributors retain full republication rights. We especially invite contributions from: development partners and embassies; provincial government officials; private sector clean technology companies; academic researchers; and frontline community voices. Contact: ceo@capiinitiate.com

SECTION XIII

ABOUT CAPI & THIS MAGAZINE

Who we are and how to engage

About Climate Action & Policy Initiative (CAPI)

The Climate Action & Policy Initiative (CAPI) is a Pakistan-based think-action organisation working at the intersection of climate science, public policy, finance, and sustainable development. CAPI engages with UNFCCC processes, national climate planning, industrial decarbonisation, carbon market development, and subnational climate action — providing independent research, policy advocacy, and practitioner capacity building to accelerate Pakistan's climate transition.

CAPI's work spans: climate change policy research and analysis; support for national and subnational climate planning (NDC implementation, NAP development, carbon market frameworks); engagement with UNFCCC negotiations and COP processes; capacity building for government officials, private sector actors, and civil society; and knowledge dissemination through publications including Climate Nexus Quarterly.

About Climate Nexus Quarterly

Climate Nexus Quarterly is CAPI's flagship quarterly e-magazine, published four times a year covering the January–March, April–June, July–September, and October–December periods. The magazine is designed to bridge the gap between rigorous climate science and actionable policy, and between international climate governance decisions and their implications for Pakistan. It is distributed free of charge to policymakers, parliamentarians, government officials, investors, academic institutions, development partners, bilateral and multilateral organisations, embassies, civil society organisations, private sector leaders, and the general public across Pakistan and globally.

All facts, statistics, and events cited in this issue are drawn from publicly available sources including UNFCCC official documents, government publications, peer-reviewed research, and reputable news sources. Independent Voices sections represent contributors' personal views, not CAPI's institutional position. Citations are provided throughout for all sourced claims.

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Next Issue	Q2 2026 (April–June): UNFCCC SB64 Bonn outcomes, COP31 Antalya preparations, Pakistan monsoon readiness, green hydrogen potential, industrial decarbonisation case studies, climate and health, disaster preparedness, carbon markets and climate finance, Paris Agreement Article 6.2 & 6.4. Contributions deadline: July 1, 2026.

Disclaimer

All statistics and policy developments cited are drawn from publicly available sources. Views expressed in Independent Voices sections are those of contributors and do not represent CAPI's institutional position. CAPI welcomes corrections and updates at ceo@capiinitiate.com.

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