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Climate Finance Displacement in Conflict-Driven Energy Crises: How the Iran War Redirected Developing Country Adaptation Resources

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ABSTRACT

The 2026 United States-Israel war on Iran and the resultant closure of the Strait of Hormuz precipitated the most severe energy disruption in modern history, triggering cascading fiscal shocks across fossil fuel-import-dependent developing countries. While scholarly and policy attention has focused predominantly on energy security and economic stabilization, the consequences of this crisis for climate adaptation finance in the Global South remain insufficiently examined. This paper addresses that gap through a comparative desk review of five developing countries: Pakistan, Bangladesh, Kenya, Sri Lanka, and Ethiopia. Drawing on official Nationally Determined Contribution (NDC) documents, international climate finance data, and conflict-period policy records, the study examines how the 2026 energy shock activated a three-stage fiscal displacement mechanism: oil import bill escalation compresses fiscal space, which forces emergency fossil fuel subsidy deployment, which in turn crowds out climate adaptation budgets and endangers conditional NDC commitments. Findings reveal a structural vulnerability in the architecture of conditional NDC targets: in all five countries, the majority of adaptation commitments are contingent on international climate finance flows that are simultaneously suppressed by the geopolitical crisis. The paper introduces the concept of the double conditionality trap; wherein domestic fiscal resources are redirected toward energy crisis response precisely when international climate finance flows are themselves disrupted. The analysis further demonstrates that the crisis accelerates clean energy transitions in fiscally robust, energy-secure economies while deepening fossil fuel lock-in and adaptation underinvestment in constrained developing countries, thereby producing an asymmetric transition dynamic with profound implications for climate justice. The paper concludes with recommendations for COP31 on shock-proofing adaptation finance architecture and restructuring NDC conditionality frameworks to withstand geopolitical disruption.

Keywords:
climate finance; fiscal displacement; NDC conditionality; energy security; geopolitical risk; adaptation governance

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INTRODUCTION

On 26 February 2026, military strikes by the United States and Israel on Iranian energy infrastructure triggered the closure of the Strait of Hormuz, a waterway through which approximately 20 percent of global oil and liquefied natural gas trade flows annually. The International Energy Agency described what followed as the most severe energy disruption in modern history, with crude oil prices surging above 110 dollars per barrel and cascading price shocks rippling across energy, food, and transport markets worldwide (Jordan, 2026). Within weeks, at least 60 nations had introduced emergency energy measures, while governments from Islamabad to Nairobi moved to shield consumers from fuel price surges through subsidies, tax cuts, and rationing programs (Gabbatiss, 2026).

The policy discourse that emerged from this crisis was dominated by the language of energy security and economic stabilization. Governments redoubled commitments to fossil fuel supply, reactivated coal plants, and introduced consumer subsidies at scale. What received far less attention was the question of climate adaptation: what happens to the capacity of developing countries to implement their climate commitments when an exogenous geopolitical shock simultaneously inflates energy import bills, drains fiscal reserves, and diverts international policy attention away from the climate agenda?

This question carries substantial practical urgency. In the months preceding the conflict, over 100 developing countries had submitted their third-generation Nationally Determined Contributions (NDC 3.0) under the Paris Agreement, many of them containing ambitious adaptation targets that were explicitly conditional on international climate finance. The New Collective Quantified Goal (NCQG) agreed at COP29 in Baku in November 2024 set a target of 300 billion dollars annually by 2035 for climate finance, a figure already considered insufficient by developing country negotiators and well short of the 310 to 365 billion dollars per year in adaptation needs identified by the United Nations Environment Programme (Neufeldt et al., 2025). Against this pre-existing finance gap, the 2026 energy shock introduced a new and compounding threat: the fiscal displacement of adaptation resources at the country level.

This paper argues that the 2026 Iran war has operated as a fiscal displacement shock, activating a three-stage transmission mechanism through which oil price escalation compresses fiscal space, emergency fossil fuel subsidies crowd out climate budgets, and adaptation commitments embedded in conditional NDC architectures are endangered or abandoned. The paper develops this argument through a comparative desk review of five fossil fuel-import-dependent developing countries: Pakistan, Bangladesh, Kenya, Sri Lanka, and Ethiopia. These countries were selected because they combine high climate vulnerability, ambitious conditional NDC targets, demonstrated fossil fuel import dependence, and documented exposure to the 2026 energy shock, providing a geographically and institutionally diverse case base spanning South Asia and East Africa.

The paper makes three contributions to the literature. First, it documents the fiscal displacement mechanism as it has operated in real time during the 2026 crisis, extending existing theory on geopolitical risk and energy transition to the climate finance domain. Second, it introduces the concept of the double conditionality trap to describe the compounding vulnerability of developing countries whose adaptation targets depend on both domestic fiscal commitment and international finance flows, both of which are disrupted by the same exogenous shock. Third, it demonstrates that the crisis produces an asymmetric transition dynamic that deepens the structural inequality already embedded in global climate finance architecture, advancing clean energy transitions in energy-secure economies while deepening fossil fuel lock-in in constrained developing countries. The paper concludes with implications for the redesign of adaptation finance mechanisms ahead of COP31.

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LITERATURE REVIEW

The Pre-Existing Adaptation Finance Gap

Long before the 2026 energy crisis, the architecture of international climate finance exhibited a structural bias toward mitigation at the expense of adaptation, with consequences falling disproportionately on the most climate-vulnerable developing countries. Buchner et al. (2023) estimated global climate finance flows at 1.46 trillion dollars in 2022, of which adaptation finance reached only 63 billion dollars, representing a fraction of the 212 billion dollars per year estimated as necessary for developing countries alone by 2030. The UNEP Adaptation Gap Report 2024 quantified the annual gap between adaptation finance needs and actual flows at between 187 and 359 billion dollars, with international public adaptation finance to developing countries standing at just 28 billion dollars in 2022 (UNEP, 2024). The UNEP Adaptation Gap Report 2025, released to inform COP30 negotiations in Belem, Brazil, updated this estimate, placing adaptation finance needs at over 310 billion dollars per year by 2035 and documenting that international public adaptation finance flows had actually declined from 28 billion dollars in 2022 to 26 billion dollars in 2023, making adaptation financing needs 12 times greater than current flows (Neufeldt et al., 2025; Watkis et al., 2025).

The COP29 agreement on the New Collective Quantified Goal represented a nominal step forward, but its limitations are well documented. Lancet Regional Health Europe (2024) characterized the outcome as incremental but insufficient, noting that the 300 billion dollar annual target falls far short of the 500 billion dollars demanded by developing countries and that the agreement relies heavily on loans rather than grants, directly exacerbating the debt burdens of countries already fiscally constrained by climate impacts. Alberti (2025) further observed that the 300 billion dollar goal applies to all climate finance, with no dedicated sub-target for adaptation, leaving the adaptation finance gap structurally unaddressed. OECD and UNDP (2025) joint assessment of NDC financing noted that while sufficient global capital exists in principle to close investment gaps, persistent barriers within and outside the financial sector continue to prevent the redirection of capital toward climate action, particularly in the context of economic vulnerabilities and rising debt burdens in developing countries.

A critical dimension of the adaptation finance gap is its relationship to NDC conditionality. Isah et al. (2025) demonstrated through a systematic quantification of NDC finance needs that developing countries have structured the majority of their climate commitments as conditional on international support, meaning that without external finance flows, stated adaptation targets are legally and practically unachievable. Pakistan's NDC 3.0, for example, commits to a 50 percent reduction in projected greenhouse gas emissions by 2035, with 33 percent of that target conditional on international finance, technology transfer, and capacity-building support (Government of Pakistan, 2025). Kenya's second NDC identifies a finance requirement of 56 billion dollars, the vast majority of which must come from external sources (Republic of Kenya, 2025). This structural conditionality creates a systemic fragility: when geopolitical events disrupt international climate finance flows, adaptation commitments collapse not from lack of domestic political will but from the architecture of the commitments themselves.

Geopolitical Shocks and Climate Finance Mobilization

The relationship between geopolitical disruption and climate finance is complex and non-linear, encompassing both inhibitory and catalytic pathways. The Russia-Ukraine war provided the most recent precedent, demonstrating how armed conflict between a major energy exporter and a European neighbor could simultaneously trigger fossil fuel subsidy expansion in affected economies and accelerate renewable energy investment in others (Laan et al., 2025). Droste et al. (2024) documented this dual dynamic in their analysis of OECD fossil fuel subsidy reform,

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finding that higher renewable energy market shares ease fossil fuel subsidy reform while crises reverse that momentum, creating political path dependencies that outlast the original shock.

Empirical research on geopolitical risk and energy transition has expanded substantially in recent years, producing a nuanced literature on directional effects. He et al. (2025) found that geopolitical risk exerts both inhibitory effects on renewable energy investment through increased macroeconomic uncertainty and facilitatory effects through incentives to reduce import dependence. Zhang et al. (2025) corroborated this dual dynamic, finding that geopolitical pressures incentivize countries to revise their energy policies and accelerate domestic renewable development. Wang et al. (2024) demonstrated that the moderating roles of environmental regulation and green innovation shape how geopolitical risk translates into energy transition outcomes, with OECD countries better positioned to channel geopolitical disruption into accelerated transitions. Li et al. (2026) contributed a cross-country panel analysis of 94 economies over 21 years, finding that geopolitical risk effects on the energy transition are non-linear and strongly conditioned by institutional quality and fiscal capacity, a finding with direct implications for developing countries with weak institutional frameworks and constrained budgets.

The implications for climate finance flows specifically have received less systematic attention. The Lancet Planetary Health analysis by Raleigh et al. (2024) examined climate and conflict co-occurrence, finding that approximately 1.6 billion people worldwide were affected by organized armed conflict in 2023, with households in conflict-prone areas six times more likely to face climate hazards. Yu et al. (2026) demonstrated through a panel analysis of 85 developing countries that greater volumes of climate finance reduce conflict incidence, particularly for resource-related conflicts, but this positive relationship presupposes stable finance flows. When geopolitical conflicts disrupt those flows while simultaneously increasing domestic fiscal pressure, the climate-finance-stability linkage operates in reverse, with destabilizing consequences.

Fossil Fuel Subsidies as a Climate Finance Displacement Mechanism

The political economy of fossil fuel subsidies provides a well-established explanatory framework for understanding how crisis-period energy spending displaces climate investment. The IMF Fossil Fuel Subsidies Data Update (Black et al., 2023) estimated total global fossil fuel subsidies at 7 trillion dollars in 2022, equivalent to 7.1 percent of global GDP, and demonstrated that full price reform would reduce global carbon dioxide emissions by an estimated 43 percent below baseline levels by 2030 while raising net welfare by 3.6 percent of GDP. Yet crises systematically reverse subsidy reform momentum: the IMF report documents that the energy price surge of 2021 to 2022 prompted many governments to expand rather than reduce fossil fuel subsidies, even as international climate commitments called for their elimination.

van Asselt (2023) examined the governance of fossil fuel subsidies within the Sustainable Development Goals framework, noting that SDG Target 12c commits all countries to rationalize inefficient fossil fuel subsidies, yet implementation remains deeply uneven, particularly for developing countries where subsidies serve dual functions as social protection instruments and political stability mechanisms. Jones and Cardinale (2023) contributed an analysis of social and political opposition to fossil fuel subsidy reform across Chile, France, Indonesia, Iran, and Ghana, demonstrating that energy affordability concerns and political economy dynamics make reform particularly difficult during periods of price inflation, precisely the conditions produced by a geopolitical energy shock. The fiscal trade-off is direct and measurable: emergency subsidies that provide immediate price relief simultaneously preclude the public investment in adaptation infrastructure, climate-resilient agriculture, and coastal protection that conditional NDC commitments require.

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Islam and Nguyen (2024) provided the most recent empirical analysis of crowding-out effects in developing economies, documenting that rising public debt and emergency fiscal expenditure suppress private and public investment in productive sectors. Their finding that fiscal space has deteriorated further following the surge in global interest rates, macroeconomic fallout from the Ukraine war, and increased spending needs related to food and energy subsidies is directly applicable to the 2026 context, where those dynamics are reproduced at greater intensity. Callaghan et al. (2024) confirmed that adaptation finance flows in Africa, the most climate-vulnerable region, are severely underfunded relative to NDC commitments, with the annual climate flow accounting for only 23 percent of the estimated amount required to implement African countries' NDCs.

Loss, Damage, and Fiscal Vulnerability in Developing Countries

The loss and damage framework, codified in Article 8 of the Paris Agreement and operationalized through the establishment of the Fund for Responding to Loss and Damage (FRLD) at COP27 in 2022, represents the international community's acknowledgement that climate-vulnerable countries face residual damages that cannot be addressed through mitigation or adaptation alone. Siegele (2023) traced the long journey from the original 1991 Alliance of Small Island States proposal to the Sharm el-Sheikh establishment of the FRLD, documenting the persistent inadequacy of funding relative to acknowledged needs. As of April 2025, total pledges to the FRLD stood at 768.4 million dollars (Bhandari et al., 2025), a figure that is wholly disproportionate to the scale of loss and damage experienced by the five countries examined in this paper alone.

Prasad and Singhania (2026) examined the allocation of climate finance against vulnerability indicators, finding that the most vulnerable countries, including small island developing states and least-developed countries, receive disproportionately less climate finance relative to their needs, partly because climate finance allocation is shaped by recipient readiness, institutional quality, and economic development rather than vulnerability alone. This finding has direct implications for the loss and damage context: countries experiencing fiscal compression from a geopolitical energy shock are likely to see simultaneous deterioration in the institutional capacity indicators that govern climate finance allocation, creating a negative feedback loop between geopolitical vulnerability and climate finance access.

The COP29 NCQG agreement, while establishing the 300 billion dollar climate finance goal, explicitly omitted a dedicated sub-goal for loss and damage (Bhandari et al., 2025), leaving the most vulnerable countries without protected funding streams for irreversible climate impacts. Lancet Regional Health Europe (2024)) characterized this omission as a missed opportunity for meaningful climate justice, noting that continued reliance on loans exacerbates debt burdens of vulnerable nations already reeling from escalating climate impacts. The 2026 Iran war compounds this pre-existing vulnerability by introducing a new category of loss and damage: fiscal losses incurred by developing countries as a direct consequence of geopolitical energy disruption, which have no established legal or institutional pathway to compensation within the current climate finance architecture.

Identifying the Research Gap

The existing literature has examined the pre-existing adaptation finance gap, the political economy of fossil fuel subsidy reform, the geopolitical risk-energy transition relationship, and the loss and damage framework in relative isolation. What is absent is a systematic examination of how an active armed conflict, operating through a specific fiscal transmission mechanism, displaces climate adaptation finance in real time across a set of geographically diverse, climate-vulnerable developing countries. The Russia-Ukraine war provided partial precedents, but the 2026 Iran war presents a qualitatively different case: it involves the closure of the world's most critical oil export chokepoint,

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generating a global supply shock of greater severity and more immediate fiscal consequences for import-dependent economies than the Ukraine precedent . Furthermore, the 2026 shock occurs against the backdrop of recently submitted NDC 3.0 documents, providing an unusually well-documented baseline against which displacement effects can be assessed. This paper fills that gap by synthesizing the available evidence across five country cases through a structured desk review, introducing the fiscal displacement mechanism and double conditionality trap as analytical constructs, and drawing policy implications for the design of more shock-resilient climate finance architecture.

CONCEPTUAL FRAMEWORK

The Fiscal Displacement Mechanism

This paper argues that the 2026 Iran war has activated a three-stage fiscal displacement mechanism that systematically redirects adaptation finance resources in fossil fuel-import-dependent developing countries. The mechanism operates as follows.

Stage 1: External Price Shock. The closure of the Strait of Hormuz generates a global supply shock in oil and liquefied natural gas markets. For countries that source all or most of their petroleum imports from the Persian Gulf, this translates immediately into an escalating import bill denominated in foreign currency. Payments for fuel imports consume foreign exchange reserves, generate inflationary pressure in food and transport markets, and raise the fiscal cost of maintaining any administered energy pricing regime. The International Energy Agency characterized the 2026 shock as the most severe energy disruption in modern history (Jordan, 2026), with oil prices surging above 110 dollars per barrel within weeks of the Strait closure.

Stage 2: Fiscal Compression and Emergency Subsidy Deployment. Governments facing politically unsustainable energy price surges respond with emergency fiscal measures: fuel tax reductions, consumer price subsidies, import duty waivers, and in some cases direct fuel rationing programs that involve state procurement. Gabbatiss (2026) documented at least 28 nations introducing a total of 31 fuel tax reduction measures within one month of the conflict's onset, including governments in Ethiopia, Kenya, Namibia, and South Africa. These measures directly compress fiscal space: revenue is foregone through tax reductions and expenditure is added through subsidy payments, reducing the discretionary budget available for other public investment priorities. In countries already operating under IMF fiscal frameworks, as in Pakistan and Sri Lanka, the compression is particularly acute because IMF program conditions limit deficit expansion even while emergency spending pressures mount.

Stage 3: Adaptation Budget Crowding-Out. As fiscal space contracts, discretionary expenditure lines are under pressure. Climate adaptation investment, which lacks the immediate political urgency of fuel subsidies or food price stabilization, is a natural candidate for deferral. This is not necessarily a deliberate policy decision; it is a structural consequence of the fiscal arithmetic of crisis response. Adaptation investments, co-financing contributions to Green Climate Fund projects, staffing of climate directorates, and implementation of NDC-aligned national adaptation plans all require sustained discretionary budget allocations. When those allocations are squeezed by emergency energy spending, the adaptation implementation gap widens regardless of the political commitments expressed in NDC documents.

Islam and Nguyen (2024) provided empirical support for this mechanism in a more general context, documenting that fiscal space deterioration following energy subsidy surges suppresses public investment in productive sectors across developing economies. The specific application to climate adaptation finance represents an extension of this crowding-out literature to the climate governance domain.

The Double Conditionality Trap

A distinctive feature of the 2026 displacement dynamic is what this paper terms the double conditionality trap. In the current NDC

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architecture, developing countries structure their most ambitious adaptation commitments as conditional on two complementary flows: domestic fiscal resources and international climate finance. Under normal conditions, these flows are partially substitutable; a shortfall in one can be partially compensated by the other. Under the conditions produced by a major geopolitical energy shock, however, both flows are simultaneously disrupted.

Domestic fiscal resources are diverted to energy crisis response, as described in Stage 2 of the displacement mechanism above. International climate finance flows are simultaneously suppressed by the crisis: donor governments face their own energy cost pressures and political demands for domestic fiscal relief, reducing the political headroom for concessional climate finance commitments; the attention and negotiating bandwidth of international climate institutions is diverted from implementation to crisis response; and the general geopolitical instability associated with an active armed conflict increases the risk premiums attached to investment in developing country climate projects. The OECD and UNDP (2025) identified mounting economic uncertainty, geopolitical tensions, and rising public debt as factors that shift priorities and strain government budgets, particularly for climate, a characterization directly applicable to the 2026 context.

The double conditionality trap produces an outcome that cannot be fully explained by either domestic fiscal analysis or international climate finance analysis alone. It requires a framework that situates both flows within the same geopolitical shock context, tracing how the shock propagates through both channels to produce a compounded displacement effect on adaptation investment. This paper provides that framework.

The Asymmetric Transition Dynamic

The 2026 crisis has not uniformly retarded the global clean energy transition. As documented by Reuters (2026), early evidence indicates that the war is accelerating renewable energy adoption in countries with sufficient fiscal space and institutional capacity to respond to the energy price signal by investing in domestic clean energy alternatives. European demand for rooftop solar surged, Chinese President Xi Jinping called for faster construction of a new energy system, and Pakistan itself became one of the world's largest solar panel importers even as it simultaneously announced coal plant reactivations.

This asymmetry is theoretically grounded in the geopolitical risk-energy transition literature. He et al. (2025) documented that geopolitical risk exerts facilitatory effects on energy transition in countries with adequate institutional frameworks and financial depth, while exerting inhibitory effects in countries with weaker institutions and fiscal constraints. Li et al. (2026) confirmed this non-linearity across a 94-country panel. The 2026 crisis provides a dramatic real-time illustration: the same shock that generates renewable investment acceleration in energy-secure economies generates fossil fuel lock-in and adaptation budget crowding-out in import-dependent developing countries.

This asymmetric dynamic has profound implications for climate justice. The countries that benefit from crisis-driven renewable acceleration are predominantly those with the lowest climate vulnerability and the greatest historical responsibility for cumulative greenhouse gas emissions. The countries that suffer fiscal displacement of adaptation resources are predominantly those with the highest climate vulnerability and the lowest historical emissions. The crisis thus deepens the structural inequality already embedded in global climate finance architecture, transferring the costs of both the geopolitical disruption and the delayed energy transition onto those least able to bear them.

Analytical Approach

The analysis proceeds through a structured comparative desk review of five countries: Pakistan, Bangladesh, Kenya, Sri Lanka, and Ethiopia. These countries were selected based on four criteria: high climate vulnerability as documented in their NDC submissions; explicit NDC conditionality with large proportions of

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adaptation commitments dependent on external finance; demonstrated fossil fuel import dependence as documented in energy sector reports; and evidence of acute exposure to the 2026 energy shock as documented in contemporaneous policy records, news analyses, and institutional assessments. The five countries represent two geographic regions (South Asia and East Africa), three income classifications (lower-middle income, lower-middle income, lower-middle income, lower-middle income, and low income), and a range of pre-shock institutional and fiscal conditions, providing sufficient diversity for comparative inference.

Each country case is assessed along three analytical dimensions: first, the pre-shock baseline, drawn from NDC 3.0 documents and related institutional assessments; second, the documented shock exposure and emergency fiscal responses, drawn from the contemporaneous record of conflict-period policy measures; and third, the NDC implementation risk generated by the interaction between the shock and the pre-existing conditional finance architecture. The synthesis then draws cross-cutting inferences about the fiscal displacement mechanism, the double conditionality trap, and the asymmetric transition dynamic as they manifest across the case set.

COUNTRY ANALYSIS

Pakistan

Pakistan presents the analytically richest case for the fiscal displacement argument, combining the largest absolute NDC finance need in the case set with some of the most acute shock exposure and a pre-existing IMF fiscal adjustment program that severely constrains emergency spending capacity. Pakistan's NDC 3.0, submitted to the UNFCCC in September 2025, commits to an economy-wide greenhouse gas emissions reduction of 50 percent below business-as-usual levels by 2035, with 17 percent achievable through domestic resources and 33 percent conditional on international climate finance in the form of grants, technology transfer, and capacity-building support (Government of Pakistan, 2025). Total estimated investment needs stand at 565.7 billion dollars, making Pakistan's conditional target the largest single finance requirement in the five-country case set by a substantial margin. The Climate Change Performance Index (CCPI, 2025). raised concerns that implementation hinges on sub-national coordination, and that without vertical partnership and enforcement mechanisms, the gap between national targets and actual implementation could widen significantly even under normal conditions.

Pakistan's exposure to the 2026 energy shock was among the most severe globally. Images of vehicles queued for fuel at petrol stations in Peshawar circulated internationally within days of the Strait of Hormuz closure (Gabbatiss, 2026). Pakistan relies heavily on liquefied natural gas imports from Qatar and other Gulf producers for power generation and industrial fuel, making it acutely sensitive to LNG supply disruption. The government responded with emergency measures including coal plant reactivation, a decision that Gabbatiss (2026) documented as one of at least eight countries announcing plans to increase coal use or delay coal plant closures in response to the crisis. This decision directly contradicts Pakistan's NDC 3.0 commitment to reduce coal's share of the energy mix as part of its conditional mitigation pathway.

The fiscal displacement dynamic in Pakistan operates through multiple channels. Emergency energy subsidies and fuel procurement costs compete directly with the discretionary allocations required to advance the NDC implementation plan. Pakistan's Climate Support Levy, introduced in the Budget 2025 to 2026 to fund environmental initiatives, is partially offset by the fiscal demands of the energy crisis response. The IMF program under which Pakistan operates imposes deficit ceilings that prevent unlimited emergency spending, but the political pressure to maintain affordable fuel prices is intense, creating a direct trade-off between subsidy expenditure and climate investment. The CCPI (2025) assessment, conducted before the shock, already identified enforcement mechanisms and adaptation efforts as at risk of

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failing; the shock materially worsens that prognosis.

A notable paradox is visible in Pakistan's response: while announcing coal plant reactivations, Pakistan simultaneously experienced a surge in rooftop solar adoption, reflecting Shahid et al. (2025) observation that Pakistani households and businesses began self-installing solar systems as electricity prices rose by over 150 percent. This household-level renewable adoption, however, is a private-sector response to price signals and does not substitute for the government-level adaptation investment that NDC conditionality requires. The fiscal displacement of the latter is not compensated by the market-driven acceleration of the former.

Bangladesh

Bangladesh represents the case with the deepest fossil fuel lock-in risk and the most severe immediate macroeconomic shock within the case set. The country is consistently ranked among the world's most climate-vulnerable nations, experiencing devastating flooding, cyclones, and sea-level rise that already cost billions of dollars annually in damages, while simultaneously being projected by multiple analysts to face recession-like GDP conditions as a direct consequence of the 2026 energy crisis.

Bangladesh's NDC 3.0, submitted in September 2025, commits to an emissions reduction of 21.85 percent below business-as-usual levels by 2030, with a conditional target of 15 percent above the unconditional reduction dependent on international support (Government of Bangladesh, 2025). The NDC integrates the country's National Adaptation Plan (NAP) covering the period 2023 to 2050, which identifies 65 priority adaptation interventions across water management, disaster preparedness, agriculture, coastal ecosystems, and urban infrastructure. Six to seven percent of Bangladesh's annual budget is notionally allocated to climate resilience, with 75 percent of that funding sourced domestically through the Bangladesh Climate Change Trust Fund, a structure that makes adaptation investment particularly vulnerable to domestic fiscal compression.

Bangladesh's shock exposure was among the most severe in Asia. Wikipedia's documentation of the 2026 Iran war fuel crisis records Bangladesh among the worst-hit economies, projecting recession-like GDP impacts and documenting university closures, commercial establishment shutdown orders by 8 pm, and restrictions on air conditioning in government offices (Ahmad & Raina, 2026; Bakr, 2026). Feingold (2026) confirmed that Bangladesh shortened school weeks and introduced remote learning to conserve energy. Critically, Gabbatiss (2026) documented Bangladesh as one of the countries announcing plans to ramp up coal use and delay coal plant closures in response to the crisis, extending the coal lock-in that Climate Analytics (2024) had already identified as a major threat to Bangladesh's NDC commitments even before the shock.

The fiscal displacement dynamic in Bangladesh is particularly acute because the country's electricity system already relies on fossil fuels for over 85 percent of generation, with renewables accounting for only approximately three to four percent of installed capacity as of 2023 (Hossain et al., 2024). A 12.5-gigawatt coal expansion pipeline was already in development before the crisis, representing a commitment to imported coal dependence that the 2026 shock deepens further. The Bangladesh Climate Change Trust Fund, which finances over 800 adaptation projects, is now competing for budget allocations with emergency energy spending, fuel procurement, and export revenue protection measures in a context where foreign exchange reserves are under acute pressure. The conditional components of Bangladesh's NDC, which depend on international finance for the most ambitious adaptation targets, face both the domestic fiscal compression described in the displacement mechanism and the broader suppression of international climate finance flows associated with the geopolitical crisis.

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Kenya

Kenya presents the case with the highest degree of external climate finance dependence within the case set, making it particularly vulnerable to the double conditionality trap. Kenya's second NDC, submitted in April 2025 for the 2031 to 2035 implementation period, targets a 35 percent reduction in greenhouse gas emissions below business-as-usual levels by 2035, with a finance requirement of 56 billion dollars, of which approximately 81 percent is identified as requiring external sources (Republic of Kenya, 2025). Kenya enhanced its domestic contribution from 13 to 19 percent of NDC cost in the new submission, reflecting an increased commitment to domestic resource mobilization, but the financing arithmetic remains overwhelmingly dependent on international climate finance flows.

Kenya's shock exposure is structurally determined by the fact that the country sources all of its petroleum imports from the Middle East (Ahmad & Raina, 2026; Bakr, 2026). Gabbatiss (2026) documented Kenya as facing severe fuel shortages, alongside Ethiopia and Zambia, in the immediate aftermath of the Strait of Hormuz closure. Commodity price inflation has cascaded into food, transport, and basic goods markets, with compounding impacts on household welfare and government revenue. The Kenyan government, like others in the region, faces political pressure to reduce fuel levies and introduce consumer protection measures, directly competing with the fiscal space required to maintain Kenya's substantial portfolio of active Green Climate Fund and Adaptation Fund projects.

Kenya's NDC implementation architecture is particularly sophisticated relative to most developing countries in the case set. The country operates a National Climate Change Action Plan, a Climate Finance Information System under development, and a Kenya National Carbon Registry, positioning it as a leader in climate governance in East Africa. However, the CGIAR tracking finance analysis (2025) documented significant alignment gaps between donor funding templates and Kenya's national reporting systems, with data paucity outside Treasury-managed activities and non-state actor reporting remaining largely voluntary (Callaghan et al., 2024). These governance gaps mean that the fiscal displacement of adaptation resources that the 2026 shock generates may be difficult to track in real time, creating accountability risks that compound the substantive risks to NDC implementation.

Kenya's second NDC explicitly identifies climate-resilient agriculture, water access, disaster preparedness, health systems, and infrastructure as priority adaptation areas, all sectors where sustained public investment is required. The fiscal competition between emergency energy relief and these adaptation priorities is direct and consequential. Kenya's target of achieving 100 percent renewable electricity generation by 2035 is consistent with the broader energy transition narrative, but its realization depends on sustained investment in geothermal, wind, and solar capacity that requires the kind of patient public capital that emergency fiscal conditions preclude.

Sri Lanka

Sri Lanka occupies a distinctive analytical position within the case set as the only country that has already experienced a full economic collapse directly precipitated by fossil fuel import dependency and foreign exchange reserve exhaustion, providing a documented baseline for understanding the worst-case trajectory of the fiscal displacement mechanism. The 2022 economic crisis, during which Sri Lanka became the first Asia-Pacific country to default on its sovereign debt in decades, was substantially driven by the country's inability to finance fuel imports against the backdrop of the Russia-Ukraine-driven oil price surge, collapsing foreign exchange reserves, and compounding domestic policy failures.

Sri Lanka's Electricity Reform Act of 2024, passed under the IMF-supported fiscal adjustment program, represents the country's attempt to rebuild a more resilient energy sector governance framework. The country's NDC commitments are aligned with this reform program, but the structural vulnerability that the 2022 crisis

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exposed, specifically the near-total dependence on imported fossil fuels and the extremely limited fiscal buffers against external energy price shocks, remains substantially unresolved. Caldera et al. (2023) documented that imported fuels consumed up to 50 percent of Sri Lanka's export income, contributing directly to the 2022 crisis, and identified renewable energy transition as the only sustainable pathway to energy security.

The 2026 Iran war has produced a second-order test of Sri Lanka's post-crisis fiscal resilience. The Institute of South Asian Studies and Gamage (2026) assessment characterized Sri Lanka as among the most vulnerable countries to the current shock, noting that its economic buffers against external shocks remain weak following the 2022 crisis and that the country is identified as among the most vulnerable to a food price surge of approximately 15 percent from Strait of Hormuz tensions. The government reintroduced mandatory petrol rationing within weeks of the conflict's onset and adopted a four-day work week, measures that Cornell (2026) described as emergency responses to a fuel-import dependent system under stress. These responses directly consume fiscal resources and administrative capacity that would otherwise support the IMF-mandated structural reform program and NDC implementation activities.

The double conditionality trap manifests with particular force in Sri Lanka's case. The country's access to international climate finance is itself conditioned on maintaining the fiscal and governance reforms required by the IMF program; any deterioration in program implementation, such as may result from emergency spending pressures, threatens both the IMF relationship and the associated access to concessional climate finance instruments. The country thus faces a situation in which the geopolitical energy shock simultaneously increases domestic fiscal pressure, threatens the IMF program conditions that underpin climate finance access, and diverts government attention from the structural energy reforms that represent the medium-term pathway out of fossil fuel dependency.

Ethiopia

Ethiopia presents the case with the most acute supply-side disruption within the case set, reflecting its landlocked geography and dependence on imported refined petroleum products that must transit through multiple supply chains vulnerable to disruption from the Strait of Hormuz closure. Wikipedia's documentation of the 2026 fuel crisis records that Ethiopia's daily diesel supply was halved from 9.2 million to 4.5 million liters, with fuel supplies to the Tigray region completely suspended, and with Addis Ababa residents reporting commodity price increases of nearly 40 percent across bottled water, cooking oil, eggs, and other essentials (Ahmad & Raina, 2026).

Ethiopia's NDC 3.0, submitted in September 2025, commits to net-zero emissions by 2050 within the framework of the country's Ten-Year Development Plan and Long-Term Low Emissions Development Strategy (Government of Ethiopia, 2025). A distinctive institutional feature of Ethiopia's NDC architecture is the Green Legacy and Degraded Landscapes Restoration Special Fund, established by Proclamation No. 1361 of 2024, which mandates a contribution of 0.5 to 1 percent of Ethiopia's total domestic financial resources to support forest restoration, ecosystem services, and climate resilience activities. This mandatory domestic contribution represents an innovative attempt to institutionalize adaptation finance within the state budget, but it is precisely the kind of earmarked allocation that faces displacement pressure when emergency fiscal demands arise.

The documented emergency response in Ethiopia illustrates the displacement mechanism with unusual clarity. Gabbatiss (2026) recorded Ethiopia among the African countries facing severe fuel shortages, and the Wikipedia fuel crisis documentation recorded that security institutions have been prioritized for fuel allocation, along with major government projects, key industries, and essential goods production, while fuel restrictions are applied to other users and petrol stations are prioritizing public transport. This triage of fuel allocation directly

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reflects the displacement mechanism: security and essential services receive priority, while discretionary programs including adaptation investment receive what remains after emergency priorities are met.

Ethiopia's GCF pipeline, in which the Ministry of Finance holds accreditation for projects of up to 250 million dollars, now competes with emergency fiscal demands in a context where the ministry's own capacity and attention are substantially consumed by crisis management. The Development Bank of Ethiopia's ongoing GCF accreditation process, critical for scaling Ethiopia's access to concessional adaptation finance, may be delayed by the administrative consequences of the crisis. Ethiopia's conditional NDC actions, which depend on international finance for their most ambitious components, face the same double conditionality trap as other countries in the case set, with domestic fiscal pressure and international finance flow suppression operating simultaneously.

Table 1: Five-country comparative profile: NDC baselines, finance needs, and shock exposure

Country	NDC 3.0 Emissions Target	Finance Need (USD)	Conditional Share	Primary Shock Exposure	Documented Displacement Response
Pakistan	50% below BAU by 2035	565.7 billion	33% conditional on grants, tech transfer	Severe; fuel queues; coal reactivation	Emergency subsidies; coal plant restarts; Climate Support Levy partially offset
Bangladesh	21.85% below BAU by 2030 (conditional)	Not disaggregated; high external dependence	~15% conditional on international support	Very severe; projected GDP recession; coal ramp-up	Coal expansion deepened; LNG substitution costs escalating; renewable targets threatened
Kenya	35% below BAU by 2035	56 billion	~81% conditional on external finance	Severe; all oil sourced from Middle East; fuel shortages	Fuel levy reductions; GCF co-financing obligations strained; carbon registry projects delayed
Sri Lanka	Target under Electricity Reform Act 2024; IMF-aligned	High; external reserves constrained post-2022	Near-total external dependence	Acute; four-day work week; fuel rationing reintroduced	Emergency rationing consuming fiscal reserves; 2022 precedent of complete climate commitment abandonment
Ethiopia	Net-zero by 2050; NDC 3.0 conditional targets	Green Legacy Fund: 0.5-1% of domestic budget	Conditional actions contingent on GCF pipeline	Severe; diesel supply halved; Tigray supply suspended	Security institutions prioritized for fuel; Green Legacy Fund allocations at risk of reallocation

Source: Authors' compilation from NDC 3.0 documents (UNFCCC, 2025).

Cross-Country Synthesis

The five-country analysis reveals a common structural pattern that operates across diverse geographic, institutional, and fiscal contexts. In all five countries, ambitious NDC 3.0 documents submitted in 2025 established conditional adaptation targets that depend on external finance for between one-third and over four-fifths of their implementation requirements. In all five countries, the 2026 energy shock generated documented fiscal compression through rising import bills, emergency subsidy deployment, and foreign exchange reserve pressure. In all five countries, the resulting fiscal squeeze creates direct competition between emergency energy relief spending and the climate adaptation investment commitments embedded in NDC documents.

The differentiated vulnerability profile across the case set provides additional analytical texture. Sri Lanka demonstrates the most dramatic baseline case, having already experienced a complete

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fiscal and governance collapse from the same structural vulnerability in 2022, making the 2026 shock a second-order test of inadequately resolved dependency. Bangladesh faces the deepest fossil fuel lock-in risk, with a coal expansion pipeline that predates the crisis and is now reinforced by emergency responses. Kenya's vulnerability is concentrated in its near-total external climate finance dependence, making it acutely sensitive to any disruption of international finance flows. Pakistan combines the largest absolute finance need with the most acute IMF program constraints on fiscal flexibility. Ethiopia faces the most severe supply-side disruption in physical terms, with diesel supply halved and commodity prices escalating sharply.

Despite these differences, the fiscal displacement mechanism and the double conditionality trap operate consistently across all five cases. The cross-country evidence supports the conceptual framework developed earlier and establishes the empirical foundation for the policy discussion that follows. Table 1 summarizes the comparative profile of the five countries across the key analytical dimensions.

DISCUSSION

The Double Conditionality Trap and NDC Architecture Fragility

The five-country analysis demonstrates that the double conditionality trap is not a theoretical abstraction but an empirically observable vulnerability that manifests predictably under geopolitical energy shock conditions. All five countries entered the 2026 crisis with recently submitted NDC 3.0 documents containing conditional adaptation targets structured under the assumption of relatively stable international climate finance flows. The crisis has simultaneously disrupted both channels through which those targets were to be financed: domestic fiscal resources have been redirected to emergency energy relief, and international climate finance flows face suppression from the broader geopolitical disruption and donor fiscal pressures.

This finding exposes a structural design flaw in the conditional NDC architecture. The Paris Agreement's transparency and accountability framework requires countries to specify what they will achieve with domestic resources and what additional commitments they can make conditional on international support, but it contains no provisions for protecting conditional commitments against geopolitical disruption. There are no trigger mechanisms that automatically activate emergency adaptation finance when a geopolitical shock threatens NDC conditionality frameworks, no ring-fencing provisions that protect adaptation budgets from emergency fiscal reallocation, and no legal architecture connecting the loss and damage framework to geopolitical energy disruptions. The OECD and UNDP (2025) identified mounting economic uncertainty and geopolitical tensions as factors straining government budgets for climate, but did not propose institutional responses to that vulnerability. This paper argues that COP31 must address that gap.

A reformed conditional NDC architecture should incorporate at minimum three protective elements: a geopolitical shock trigger clause that activates supplementary adaptation finance from the NCQG when a country's fiscal space is demonstrably compressed by a geopolitical energy disruption; a ring-fencing provision that legally protects a defined share of domestic climate adaptation budgets from reallocation to emergency energy relief; and an enhanced monitoring protocol that tracks adaptation budget displacement in real time during crisis periods. These elements are not novel in principle, drawing on established precedents from IMF social spending floors, World Bank crisis response instruments, and Adaptation Fund disbursement mechanisms, but they have not been integrated into the NDC conditionality framework.

Fossil Fuel Subsidies as Structural Climate Finance Competitors

The 2026 crisis adds a new empirical chapter to the long-running literature on fossil fuel subsidy reform. The IMF (Black et al., 2023) estimated that full fossil fuel price reform would raise global net welfare by 3.6 percent of GDP and reduce

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carbon dioxide emissions by 43 percent below baseline by 2030. Yet the 2026 episode illustrates with unusual clarity why this technically optimal reform trajectory is politically and socially unachievable during crises: governments facing immediate social stability risks from fuel price surges have no realistic option other than to subsidize, regardless of their climate commitments.

Jones and Cardinale (2023) demonstrated that the political economy of subsidy reform makes reversals particularly difficult to avoid during periods of price inflation, and that the social and political acceptability of reform requires conditions, including functional social safety nets, credible government commitment, and gradual price adjustment, that are precisely absent during a geopolitical energy shock. Van Asselt (2023) observed that SDG Target 12c commits countries to phasing out inefficient fossil fuel subsidies, yet implementation remains deeply uneven, with developing countries particularly likely to prioritize immediate affordability over long-term subsidy reform. The 2026 crisis confirms and intensifies this pattern.

The structural competition between fossil fuel subsidies and climate finance is not merely a fiscal trade-off; it is a governance failure that the current international climate finance architecture has not adequately addressed. The NCQG does not include provisions for climate finance protection during subsidy expansion episodes. The Paris Agreement's NDC framework does not penalize subsidy expansion that displaces adaptation investment. And the G20 commitment to phase out inefficient fossil fuel subsidies, which van Asselt (2023) noted has been a largely unimplemented aspiration since 2009, has no enforcement mechanism that survives a geopolitical crisis. COP31 represents an opportunity to introduce such mechanisms, building on the Santa Marta Conference's renewed political momentum around the fossil fuel transition.

The Asymmetric Transition and Climate Justice

The UNFCCC Executive Secretary's characterization of the Iran war as supercharging the global renewables (Reuters, 2026) reflects a real empirical phenomenon: the energy price shock is generating renewable investment acceleration in energy-secure, fiscally robust economies. European rooftop solar demand has surged, Chinese renewable energy construction is accelerating, and Pakistan itself has experienced household-level solar adoption. This narrative, however, obscures the equally real phenomenon documented in this paper: the same shock is deepening fossil fuel lock-in and displacing adaptation resources in the five countries analyzed here, all of which are among the world's most climate-vulnerable and least historically responsible for cumulative greenhouse gas emissions.

The asymmetric transition dynamic described in this paper represents a new form of climate injustice that the existing climate finance literature has not fully theorized. The standard climate injustice framework focuses on the mismatch between historical responsibility for emissions and exposure to climate impacts. The asymmetric transition adds a second dimension: the mismatch between capacity to convert a geopolitical energy shock into clean energy acceleration and vulnerability to fiscal displacement of adaptation resources. Countries with strong institutions, fiscal depth, and domestic clean energy supply chains can leverage the price signal from a geopolitical shock to accelerate their energy transitions. Countries without those capacities cannot, and in attempting to protect their populations from the immediate impacts of the shock, they deepen the fossil fuel dependencies that will make future adaptation more expensive and difficult.

Li et al. (2025) demonstrated empirically that the effects of geopolitical risk on the energy transition are non-linear and strongly conditioned by institutional quality and fiscal capacity. This paper's five-country analysis provides qualitative

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case evidence for that non-linearity in the specific domain of adaptation finance. The implication for climate justice is direct: the global clean energy transition will not be equitable if it is accelerated in energy-secure economies while simultaneously delayed and undermined in the most climate-vulnerable developing countries. Addressing this asymmetry requires dedicated international mechanisms that specifically protect adaptation investment in developing countries during geopolitical energy crises.

Implications for Loss and Damage

The 2026 Iran war has introduced a category of loss and damage that the existing UNFCCC framework does not recognize: fiscal losses incurred by developing countries as an indirect consequence of geopolitical conflict between third-party states. The five countries examined in this paper are not parties to the conflict, have not chosen to depend on Middle Eastern oil, and have not caused the geopolitical conditions that produced the Strait of Hormuz closure. Yet they bear substantial fiscal costs from that closure, including the emergency subsidy expenditure, the foreign exchange reserve depletion, and the adaptation budget displacement documented in this analysis.

Siegele (2023) traced the development of the loss and damage framework from its origins in the existential threat of sea-level rise to the operationalization of the FRLD at COP27, noting that Article 8 of the Paris Agreement provides no links to the finance provisions in Article 9 and contains no mechanisms for determining how parties are performing. The Fund for Responding to Loss and Damage, with 768.4 million dollars in pledges as of April 2025 (Bhandari et al., 2025), was not designed to address the fiscal losses generated by geopolitical energy disruptions, and its current mandate does not extend to that category of loss. Lancet Regional Health Europe (2024) characterized the COP29 NCQG agreement as a missed opportunity for climate justice precisely because it omitted loss and damage from its sub-goal architecture.

This paper proposes that the loss and damage framework be extended to incorporate a geopolitical energy shock trigger mechanism: a dedicated instrument within the FRLD architecture that provides emergency fiscal support to developing countries experiencing documented adaptation budget displacement as a result of geopolitical energy disruptions beyond their control. Such a mechanism would require clear eligibility criteria (documented fossil fuel import dependence; evidence of fiscal displacement; absence of direct involvement in the underlying conflict) and rapid disbursement protocols that can respond within the acute phase of a crisis rather than through the slow deliberative processes that currently govern FRLD access.

COP31 Imperatives

The 2026 Iran war has arrived at a moment of renewed political energy around the global energy transition. The Santa Marta Conference on Transitioning Away from Fossil Fuels, held in Colombia on 28 and 29 April 2026, generated a political climate change, in the words of the Temko (2026), that COP31 in November 2026 must translate into institutional commitments. This paper identifies four specific imperatives for COP31 that follow directly from the fiscal displacement analysis.

The first imperative is the introduction of a geopolitical shock protection mechanism within the NCQG architecture, as described above. This mechanism should be grant-based, rapidly disbursable, and specifically designed to protect adaptation budgets in developing countries facing documented energy crisis-driven fiscal compression. The second imperative is the adoption of a formal NDC conditionality resilience standard, requiring that future NDC conditional targets specify not only what international finance flows they require but also what geopolitical disruption scenarios would constitute force majeure conditions that trigger emergency finance activation.

The third imperative is the integration of fossil fuel subsidy reform incentives into the climate

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finance architecture. The current architecture provides no positive incentives for developing countries to resist subsidy expansion during energy crises; indeed, the absence of crisis-period climate finance protection actively incentivizes subsidy expansion as the only available fiscal response. A reformed architecture should provide emergency grant support for developing countries that maintain climate-aligned fiscal policies during geopolitical energy shocks, creating a positive incentive compatible with the political economy of crisis-period governance. The fourth imperative is the extension of the loss and damage framework to encompass geopolitical energy shock fiscal losses, as proposed in the loss and damage discussion above.

The UNEP Adaptation Gap Report 2025 called for containing the adaptation finance gap by promoting mitigation and avoiding maladaptation through fair and locally led finance allocation, and for integrating resilience into finance systems by encouraging central and commercial banks and rating agencies to factor resilience into decisions on lending and rating models (Neufeldt et al., 2025). These recommendations provide a foundation for the institutional redesign that the 2026 crisis makes urgent.

CONCLUSION

The 2026 Iran war has demonstrated with unusual clarity that the global architecture for climate adaptation finance contains a structural vulnerability that geopolitical energy crises expose and amplify. This paper has documented that vulnerability through a comparative desk review of five fossil fuel-import-dependent developing countries: Pakistan, Bangladesh, Kenya, Sri Lanka, and Ethiopia. The analysis traced the operation of a three-stage fiscal displacement mechanism through which oil import bill escalation generates fiscal compression, emergency fossil fuel subsidy deployment crowds out climate adaptation budgets, and conditional NDC commitments are endangered by the simultaneous suppression of both domestic fiscal resources and international climate finance flows.

The double conditionality trap identified in this paper represents a fundamental design flaw in the conditional NDC architecture: the Paris Agreement's framework assumes geopolitically stable international finance environments and provides no institutional protection for conditional adaptation commitments when those environments are disrupted. The asymmetric transition dynamic documented across the five cases demonstrates that the geopolitical shock that is accelerating renewable energy transitions in energy-secure economies is simultaneously deepening fossil fuel lock-in and displacing adaptation resources in the most climate-vulnerable developing countries, producing a new dimension of climate injustice that the existing loss and damage framework does not address.

COP31 must respond to the conditions that the 2026 crisis has revealed. The specific institutional proposals advanced in this paper, including a geopolitical shock protection mechanism within the NCQG, an NDC conditionality resilience standard, fossil fuel subsidy reform incentives, and an extension of the loss and damage framework to geopolitical energy shock fiscal losses, represent a minimum agenda for making the global climate finance architecture genuinely shock-resilient and equitable.

This study has several limitations. The desk review approach necessarily relies on available documentary evidence, which is more comprehensive for some countries and domains than others. The analysis was conducted during the acute phase of the 2026 crisis, meaning that the full fiscal displacement effects, which will take months or years to fully manifest in budget execution data and NDC implementation reports, cannot be assessed. Future research should pursue quantitative modeling of fiscal displacement magnitudes using budget execution data once it becomes available, extend the comparative framework to additional country cases in West Africa, Southeast Asia, and the Pacific, and examine the institutional mechanisms through which geopolitical energy shocks can most effectively be incorporated into the climate finance governance architecture.

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