


**RAISINA-IE GLOBAL STUDENT CHALLENGE:  
BRINGING TOGETHER PERSPECTIVES  
ON RENEWED GLOBAL GOVERNANCE**



**POLICY SOLUTIONS  
FOR THE INTERNATIONAL  
CLIMATE CHANGE REGIME**



**A PROPOSAL TO GET BACK ON TRACK**

**A HARMONISED PROPOSAL PREPARED BY TEAMS 1, 2, 3, 4, and 5**

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# Executive Summary

**T**he 2024 Global Stocktake of the United Nations revealed that Parties are off track to meeting the Paris Agreement goals. This calls for adjustments of the national climate commitments (i.e., Nationally Determined Contributions, NDCs) approach, a reassessment of how to hold global actors accountable to reach long-term low-emissions development, and rethink forms to finance climate change mitigation and adaptation to enable systems transformation.

To get the Parties back on track, we propose a shift towards a sectoral approach for climate change mitigation and adaptation commitments. The achievements of state and non-state actors with respect to reaching low-emissions goals and honouring climate



commitments can be monitored by a transparent Digital Climate Accountability Framework that continuously visualises the emissions reduction paths of all actors, providing a global continuous ‘flow-take’ and functioning as an enforceability mechanism. To enable change and systems transformation, we propose a rethinking of forms to finance innovations needed to promote and accelerate systems transformation. We propose that the Digital Climate Accountability Framework also monitors and visualises all financial flows between countries, from origin to destination and towards mitigation or adaptation.



# Abbreviations

<b>ACTO</b>	Amazon Cooperation Treaty Organization
<b>AI</b>	Artificial intelligence
<b>APAEC</b>	ASEAN Plan of Action for Energy Cooperation
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>GCAP</b>	Global Climate Action Partnership
<b>GCF</b>	Green Climate Fund
<b>GEF</b>	Global Environment Facility
<b>GHG</b>	Greenhouse gases
<b>IoT</b>	Internet of Things
<b>LT-LED</b>	Long-Term Low-Emissions Development



<b>MDBs</b>	Multilateral Development Banks
<b>NDCs</b>	Nationally Determined Contributions
<b>REPP</b>	Renewable Energy Performance Platform
<b>RGGI</b>	Regional Greenhouse Gas Initiative
<b>SDRs</b>	Special Drawing Rights
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change





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# 1. Introduction

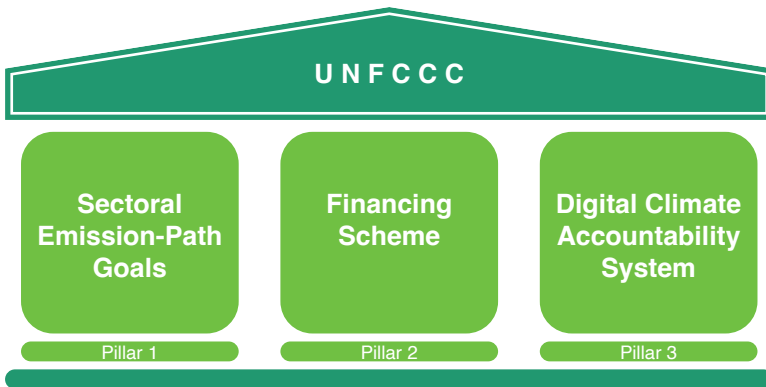
With 2023 becoming the warmest year on record, the urgency of actions to achieve the Paris Agreement goals on time has intensified (WMO, 2024). One of the main takeaways from the first Global Stocktake was that the “[...] Parties are off track when it comes to meeting their Paris Agreement goals” (UN, n.d.), necessitating an assessment of how to get the Parties back on track.

Despite the collective efforts of state and non-state actors, global progress remains insufficient to achieve the 1.5°C threshold (IEA, 2023; UNFCCC, 2023a). As per our assessment, the international community needs to rethink its approaches for achieving low-carbon emissions by focusing on sectors rather than countries. We see



this as Pillar 1 of our joint proposal. Further, while the majority of current climate change financing goes towards mitigation, more financing is needed for innovation and climate change adaptation to enable systems transformation. New financing schemes constitute Pillar 2 of our proposal. Finally, we consider that the current model of climate governance not only lacks transparency, but its five-year Global Stocktake generates delays of awareness regarding whether we are on a track—this is something that we cannot afford, as it can make it more difficult to make timely adjustments. Therefore, Pillar 3 of our proposal recommends a new way to enforce actors' compliance with the climate commitments in the form of a Digital Climate Accountability Framework.

**Figure 1: Overview of the Framework**



*Source: Authors' own*



The primary objectives of this proposal are to justify why it is helpful to adapt the Nationally Determined Contributions (NDCs) with sectoral emission-path goals and how this can be achieved; to introduce a Digital Climate Accountability Framework that provides a more transparent and continuous visualisation of all actors' emissions reduction paths; and to provide suggestions on how to improve financing for much-needed innovation to enable climate change adaptation at the sectoral and country levels. We deem improved financing critical to enable and accelerate systems transformation. Section 2 presents the rationale behind the three components of this proposal, and Section 3 describes how these key components can be implemented within the international climate change regime.



# 2. Proposal

## 2.1 Pillar 1: Adapting NDCs with Sectoral Emission-Path Goals

**N**ationally Determined Contributions (NDCs) are commitments made by countries under the Paris Agreement to curb future emissions (UNFCCC/PA/CMA, 2023) and play a pivotal role in global climate action. However, while the Paris Agreement emphasises the necessity of ambitious NDCs, current NDCs lack uniformity and often fall short of required emissions reductions. Therefore, we propose adapting the NDCs with sectoral emission-path goals, as we are of the view that sector-specific targets and strategies, along with increased transparency brought about by a Digital Accountability Framework, can bridge the ambition gap and facilitate the transition to low-carbon economies.



Adapting NDCs with sectoral emission-path goals can enhance the effectiveness, transparency, and accountability of climate change mitigation efforts, including the following: (a) enable countries to identify cost-effective emission reduction opportunities and bottlenecks as well as highlighting the need for innovation to diminish emissions in specific sectors; (b) enhance transparency and accountability by visualising sectoral emissions trajectories, thus fostering sector-specific accountability and providing a framework for monitoring progress and links to international systems of transferable emission credits; (c) provide clear roadmaps for each sector, enhancing the effectiveness of emissions reduction strategies by aligning them with the Sustainable Development Goals and differentiating between mitigation and development efforts; (d) enable countries to optimise emissions reductions by tailoring strategies to each sector's unique potential and cost-effectiveness, such as defining carbon dioxide (CO<sub>2</sub>) emissions goals for forestry or specific targets for the energy sector; and (e) enhance accountability through quantifiable targets, enabling regular reviews and ensuring that sectors are accountable for meeting their objectives, which is crucial for the success of countries' NDCs.

Adapting NDCs with sectoral emission-path goals requires a holistic approach that integrates sector-specific considerations into national climate policy frameworks. Of these, we consider the following six components to be key:

- **Data collection and analysis:** Robust data on emissions sources, trends, and potential mitigation measures are



essential for setting meaningful sectoral emission-path goals. Countries need to invest in data collection and analysis capabilities, including the development of emission inventories and modelling tools.

- **Setting specific emissions reduction targets for each sector**, based on the analysis of collected data, in alignment with overall national emissions reduction goals. These targets should be ambitious yet realistic and should take into consideration the unique characteristics and challenges of each sector.
- **Developing policies and measures tailored to each sector** to achieve emissions reduction targets. This may involve a combination of regulatory measures, incentives, investments in clean technologies, and capacity-building initiatives.
- **Engaging stakeholders** from government, industry, civil society, and other relevant sectors in the development and implementation of sectoral emission-path goals. Consultation and collaboration are essential to gain buy-in, share knowledge and expertise, and foster collective action.
- **Establishing robust monitoring and reporting mechanisms** to track progress towards sectoral goals. This includes regular data collection, analysis of trends, evaluation of policy effectiveness, and transparent reporting to ensure accountability and facilitate learning.
- **Periodically reviewing and, if necessary, adjusting sectoral emission-path goals** based on evolving circumstances, new technologies, and updated scientific understanding. Flexibility and adaptability are key to ensuring that goals remain ambitious and relevant over time.



## 2.2 Pillar 2: Improving Financing of Innovation for Systems Transformation

Recent estimates put the global financing gap for climate change adaptation at US\$194-366 billion per year and the annual adaptation financing need for developing economies at US\$387 billion (UNEP, 2023). The accountability of Parties to agreed-upon financial flows from developed to developing economies is lacking. To address these financial shortcomings, we propose the following:

- Integrating a Digital Climate Accountability System into the Long-Term Vision on Complementarity, Coherence, and Collaboration between the Green Climate Fund (GCF) and the Global Environment Facility (GEF), thereby ensuring that the financial mechanisms of the UNFCCC are aligned with our proposed framework;
- Increasing concessionality and risk-taking by multilateral development banks (MDBs) and other development institutions to ensure that public finance is not flowing towards projects that could be fully funded by commercial investors;
- Promoting the comprehensive integration of climate and biodiversity risk in the risk methodologies of MDBs and credit rating agencies to lower the interest rates of developing countries looking to finance green projects;
- Fostering community engagement and empowerment investment criteria for financial actors, so that more resources are channelled to vulnerable communities in order to foster the bottom-up initiatives of climate resilience, decentralised renewable energy, and other projects that generate social





value locally and ensure a participatory governance structure; and

- Recording essential data using blockchain-based registries to improve investors' accountability and transparency.

### 2.3 Pillar 3: A Digital Accountability Framework

The third and final pillar of our proposal is a Digital Climate Accountability System, which we consider crucial to put Parties back on track as it provides a continuous global flow-take of progress with the emissions reductions and financial flows required for adaptation and technological innovation. It is a framework that uses advanced technologies to transform climate action. Through a universally accessible digital repository for climate disclosures from state and non-state actors, this system would simplify reporting, improve data analysis, and enhance credibility. Governed by the UNFCCC, it would align with global climate initiatives and contribute to the existing UNFCCC Global Climate Action Portal (HLEG, 2022). The framework provides detailed information about the key actors, their roles, activities, and how data is created, harmonised, and managed (Hsu & Schletz, 2023). The essential components of the framework are as follows:

- **Comprehensive data sources:** State and non-state actors input greenhouse gas (GHG) emissions inventories, standardised reports, and country metrics (Hsu & Schletz, 2023); Table 1 presents examples of country metrics. Satellite imagery and Internet-of-Things (IoT) sensors provide real-time



environmental data for verification, maintaining accuracy and reliability (Edmond, 2023; Hsu et al., 2020).

- **Harmonised data integration:** Standard-setters ensure data harmonisation for consistency and comparability (Hsu & Schletz, 2023).
- **Artificial intelligence (AI) powered analysis:** The country-specific AI model analyses metrics by country, ensuring equity, fairness, and accuracy. Large language models can understand contexts and perform tasks such as summarisation translation (Debnath et al., 2023). AI algorithms can also process satellite imagery to detect changes in land use, deforestation, and urbanisation, providing insights into environmental impacts (Jain et al., 2023).
- **Benchmarking and comparisons:** Actual emissions are compared against benchmarks to assess progress.
- **Transparency and reporting:** Real-time data is displayed on the UNFCCC GCAP, with country comparisons and progress toward Long-Term Low-Emissions Development (LT-LED) goals. It also highlights anomalies, triggering alerts for countries that are falling behind.
- **Independent data verifiers:** Watchdog groups, including scientific experts, verify and assess the reported data to ensure that it aligns with climate objectives, enhancing transparency and accountability (Hsu & Schletz, 2023).
- **Enforcement and incentives:** Failure to meet climate targets may result in enforcement mechanisms like a carbon tax or higher carbon prices (IEA, 2019). The allocation of extra Special Drawing Rights (SDRs) incentivises countries to meet commitments and supports lower-income nations.



**Table 1: Examples of Country Metrics**

<b>Country Metric</b>	<b>Unit of Measurement</b>
<b>Economic Factors</b>	
GDP	Current international \$
GDP per Capita	Current international \$
<b>Social Factors</b>	
Population Size	Number of inhabitants
Population Density	Number of people per km <sup>2</sup>
Urbanisation Rate	%
Human Development Indicator (HDI)	Value between 0 and 1
<b>Environmental Factors</b>	
Natural Resource Dependence	High, Medium, Low
<b>Equity Metrics</b>	
Gini Coefficient	Value between 0 and 1
Climate Vulnerability Index	High, Medium, Low

*Source: Authors' own*



Countries need to make progress in technology development, technology transfers, and technology funding, including financial transfers, as outlined in the Paris Agreement and reflected in their NDCs. However, these flows are currently inadequate (UNFCCC, 2023b). The large financial-flow shortfalls, which were observed from 2009 up till 2023, would have been exposed if a transparent system had been in place to promote accountability and corrective actions (Stallard, 2022). The Digital Climate Accountability System's transparency aims to fill this gap. It will monitor carbon emissions and technological and financial transfers, from high-tech-high-income to lower-tech-lower-income economies. Compliance will be enforced through public data disclosure. The system will also enforce necessary technology transfers to reduce emissions further. Moreover, it will track funding and financial transfers across countries to enable funding for new and existing green technologies. In so doing, the system will enhance the economic viability of climate change measures by providing a continuous flow-take of available climate financing opportunities provided by, for example, the UNFCCC carbon markets, the GCF, and the IMF's Resilience and Sustainability Trust (IMF, 2022).

The proposed system will also provide an instrument to visualise cross-country inequalities and potentially contribute to their mitigation. It would highlight the amount and direction of financial flows from higher-income to lower-income countries, addressing cross-country inequalities and showing deficiencies.



# 3. Implementation

## 3.1 Short-Term Implementation

**I**n order to implement the three pillars, in the short run, we propose the following four actions at the national level:

- Conduct a nationwide appraisal of emissions levels of different types of economic activities, and use sectoral averages to establish sectoral decarbonisation task forces that will be responsible for co-designing and implementing net-zero transition pathways and acknowledging the inherent differences across sectors. Subsequently, the task forces should clearly delineate the mandates, timelines, and least-cost mitigation strategies by using sectoral



benchmarks derived from the results of the survey and climate science. For instance, Parties could draw on the UK's Sector Deals case study as part of their industrial strategy, which would foster collaboration between the government and industries for innovation and sustainability in key sectors (GOV.UK, 2017).

- Mobilise companies towards net-zero transition pathways, particularly carbon-intensive industries such as energy, transportation, and agriculture, through the use of policy menus and incentive structures provided by Parties, which are in sync with each country's long-term development needs and political capabilities. These menus could draw on best practices and lessons from successful case studies, such as the renewable energy transition in Denmark (Ministry of Foreign Affairs of Denmark, 2018). Incentives could entail tax rebates and grants for businesses that adopt green technologies or subsidies that favour sustainable practices. Norway's use of sovereign wealth funds to invest in renewable energy and sustainable development projects is an example of political will translated to climate mitigation priorities (Feingold, 2022).
- Implement technology manufacturing allocations. Following the selection of the appropriate national directive from the policy menu, countries can work to decouple adverse environmental impacts from economic and corporate activities through the use of state-of-the-art climate technology. This includes the identification of sector-specific



least-cost technological innovations and the introduction of fiscally responsible taxation structures to make technologies cost-effective for widespread adoption. For instance, the use of satellite sensing and image processing, predictive weather and hazard forecasting using GEOINT systems that run on machine-learning analytics, and the adoption of smart irrigation technologies can improve the efficient use of scarce water resources and foster climate adaptation in agriculture-dependent economies.

- Leverage private finance, such as by promoting public-private partnerships to mobilise investments in green technologies. For example, the Renewable Energy Performance Platform (REPP) model has successfully catalysed renewable energy projects in Africa (Africa.com, 2023).

At the regional level, we propose the following:

- **Regional task forces** to complement and monitor national task forces. An example is the Regional Greenhouse Gas Initiative (RGGI) model in the United States (US), where states collaborate to cap and reduce CO<sub>2</sub> emissions across borders (RGGI, 2019). Such task forces will be especially valuable in preventing multinational corporations from shirking their responsibilities by migrating their operations to a different national jurisdiction. They will also facilitate technology transfers and capacity building within the region. An example is the ASEAN Plan of Action for Energy Cooperation (APAEC), which enhances energy security



and sustainability through regional collaboration (APAEC et al., 2016).

- **Integrated transboundary climate and biodiversity strategies** can be used to develop integrated strategies by focusing on shared regional ecosystems. Their formulation can draw from the Amazon Cooperation Treaty Organization (ACTO, 1978), which promotes sustainable development and conservation practices in the Amazon basin through regional cooperation. These strategies can include directives to conduct periodic vulnerability and needs assessments for at-risk populations, flora and fauna, and geographical forms.

At the international level, we propose the following:

- **Kickstart the Digital Climate Accountability Framework**, a digital platform for the transparent reporting and monitoring of emissions and climate action commitments, akin to the Climate Action Tracker, which assesses national climate targets and actions. This platform will integrate real-time data from satellite imagery and IoT sensors to perform accurate monitoring, drawing from the Global Forest Watch Initiative's success in using technology for deforestation tracking.
- **Identify new forms of financing to close the gap, such as an angel energy transition fund**, which utilises innovative and feasible green capital. Such a fund could play a transformative role in advancing sustainable initiatives with





the support of angel investors. It can also include independent auditors to review finances and project performance to ensure the credibility of the fund's operations. Transparency and accountability can be ensured through open data platforms that publish financial flows, project outcomes, and impact assessments.

### 3.2 Medium- to Long-Term Implementation

We propose the following additional actions at the regional level:

- **Implement cross-border green infrastructure projects**, such as interconnected renewable energy grids with high-capacity battery storage systems and transnational legislation of must-dispatch rules to ensure seamless, reliable, and cost-effective variable renewable energy generation and integration. This could be modelled after the EU's transnational energy networks.
- **Form regional climate governance bodies** to ensure and enable inclusivity, coordination, accountability, and contract-bound compliance among countries. Trade relationships between neighbouring countries can be leveraged, and cross-border conservation agreements can be established to protect shared ecosystems and wildlife corridors.



At the international level, we suggest the following:

- **Expand and enhance the Digital Accountability Framework** by including advanced earth observation satellites and AI-driven analytics for predictive modeling and scenario planning. These expansions and enhancements can be used to revise national-level policy menus and provide tracking metrics and information to facilitate carbon accounting and transactions and promote international collaboration and consensus building for setting standardised data-reporting protocols and verification mechanisms.
- **Undertake comprehensive financing mechanism overhaul** through creating a pipeline of projects and instruments to mitigate the financial risks of green investments by using innovative financial tools and harmonising international green financing standards to scale up investments in sustainable development.

### 3.3 Risks and Mitigants

We foresee the following risks to the adoption and long-term sustainability in the implementation of the proposed measures. Accordingly, we propose the following mitigants:



- **Industries with high carbon footprints may resist transformation** and capture the political institutions of countries where they operate due to perceived threats to their profitability and operational continuity. **Mitigant:** Offer transitional support, including financial incentives and technical assistance, to expedite the shift towards sustainable practices. A phased approach could alleviate political challenges.
- **Political risk:** Changes in elected administrations can lead to policy reversals, ebbs and flows in political will, and regulatory uncertainties, impacting long-term planning. **Mitigant:** Strengthen legal frameworks to ensure policy continuity beyond political cycles. Foster bipartisan support for climate initiatives to ensure that they are insulated from political changes.
- **Technological feasibility and adoption:** The assumed technological advancements, particularly in carbon capture and renewable energy storage, may not progress as anticipated, which may hinder decarbonisation targets. **Mitigant:** Prioritise investment in R&D and pilot projects to test and improve technologies before full-scale implementation. Diversify technology portfolios and enhance market competition to avoid over-reliance on specific solutions and complacency among vendors.
- **Financing and investment risks:** The required scale of investment might not be met due to perceived risk by investors, especially in developing regions or for untested, innovative technologies. **Mitigant:** Use blended finance structures and national, regional, and international credit guarantee systems



to derisk investments, combining public funds with private capital. Insurance products would also need to develop to cover specific risks such as force majeure risks in climate change-induced extreme weather events.

- **Data compliance risks in the Digital Accountability Framework:** The collection and sharing of data for monitoring and reporting purposes could raise concerns about compliance from national authorities and confidentiality of sensitive data. **Mitigant:** Implement robust data-protection regulations and encryption technologies while fostering transparency and accountability through the use of blockchain technology, enabling stakeholders to control their data.
- **Equity and inclusivity concerns:** Policies and measures may disproportionately impact or have unforeseen adverse consequences on already vulnerable populations, thus exacerbating social and economic inequities. **Mitigant:** Integrate social impact assessments in the planning and implementation phases. Design policies that include social safeguards and compensation mechanisms for adversely affected groups.



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