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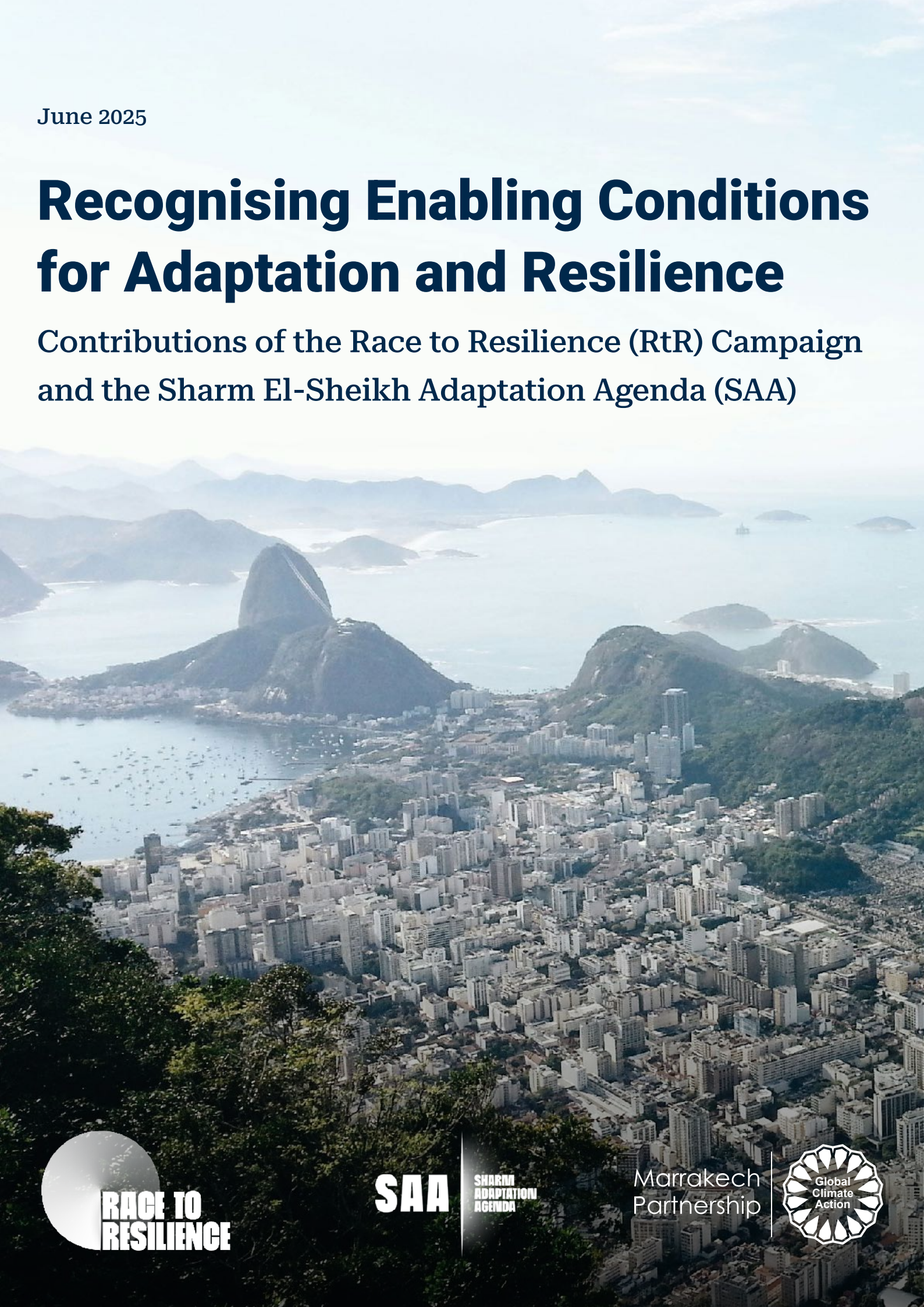
Recognising Enabling Conditions for Adaptation and Resilience

Contributions of the Race to Resilience (RtR) Campaign and the Sharm El-Sheikh Adaptation Agenda (SAA)



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Foreword

From Periphery to Priority

Nigar Arpadarai
COP29, Azerbaijan
Climate High-Level Champion

Dan Ioschpe
COP30, Brazil
Climate High-Level Champion

The urgency of climate adaptation has never been clearer, nor its delivery more complex. Public and private investment in adaptation are among the most crucial of our time, as they are foundational to food security, water access, public health, economic stability and social cohesion. However, adaptation efforts remain underfunded, underprioritised and frequently misunderstood, yet are expected to succeed within systems that are fragmented, overstretched and ill-equipped for the scale of change required.

This situation is not due to a lack of recognition. The accelerating impacts of climate change have made the necessity of adaptation undeniable. The difficulty of adaptation is due to its nature: it requires coordination, consistency and long-term thinking, qualities that become harder to sustain as political attention shifts, fiscal space contracts and global volatility grows.

As Climate High-Level Champions for Conference of the Parties (COP) 29 and COP30, we are witnessing this reality firsthand. From government ministries to grassroots networks and from technical bodies to boardrooms, we see how adaptation efforts are being carried forward, and how easily they are slowed, sidelined or stranded when the enabling environment is weak. Too often, the work begins without the resources it needs to endure.

Policy design is important, but meaningful progress also relies on institutional readiness, political continuity and relationships that enable efforts to endure through disruption. Adaptation is driven by people and actors at all levels of society, but it is sustained by the conditions that enable them to act, adapt and persist.

This paper explores the necessary resources for adaptation efforts to take root and endure.

It focuses on the enabling conditions that shape long-term outcomes: capacity building that activates effective responses, governance that ensures continuity, finance that catalyses investment and reaches those who need it most, markets that signal and support resilience growth, coordination that connects fragmented actors, and trust that sustains partnerships through uncertainty.

The paper builds on lessons from the Race to Resilience and the Sharm El-Sheikh Adaptation Agenda, which are grounded in the practical experiences of those who deliver adaptation every day. From city authorities developing early warning systems to communities restoring mangroves for flood protection, these efforts illuminate the systems, relationships and institutional scaffolding that keep adaptation moving forward, even under pressure.

The enabling conditions examined in this paper, which include financial, institutional, political and social aspects, determine whether adaptation can align, scale and endure. They shape what is built, who is included and how decisions hold when tested.

As the Global Goal on Adaptation (GGA) enters a more defined and implementation phase, this paper offers a shared approach to navigating the road ahead. It highlights not only the progress already underway but also the support required to sustain and accelerate it.

Adaptation can no longer remain at the periphery. It is central not only to the lives people lead today and the futures they aspire to shape but also to the resilience of economies confronting escalating climate risks. As we move from Baku to Belém, this paper is offered as a practical tool to support that shift and empower those working to make adaptation real, connected and built to last.

Executive Summary

To meet the urgency of the climate crisis, we must substantially accelerate and scale up adaptation efforts. This white paper aims to support this acceleration by identifying the key enabling conditions that unlock systemic, transformational adaptation, particularly for the most vulnerable populations.

The opportunity ahead is clear: By strengthening the foundations for adaptation through improved knowledge, finance, governance and market development, we can shift from fragmented initiatives to coordinated, measurable progress. This paper contributes to this shift by offering shared definitions, actionable insights and examples of how enabling conditions can be embedded in policy, as well as investment and implementation on the road to 2030.

Despite the increasing impacts of climate on people, ecosystems and economies, adaptation remains underfunded and inadequately implemented. The Global Stocktake confirms that current efforts fall short in scale, speed and equity, leaving low-income communities, women and girls, Indigenous Peoples and local communities at the greatest level of risk.

The Race to Resilience (RtR) and Sharm El-Sheikh Adaptation Agenda (SAA) initiatives are working to close this gap. RtR, which involves 42 partners across 160 countries, aims to enhance the resilience of 4 billion people by 2030. To drive near real-time action, the SAA has set measurable targets for 2030 across six systems and two key enablers: finance and policy.

RtR's Metrics Framework based on seven Resilience Attributes and the SAA's system-wide progress signals help to track change. Yet, challenges remain, particularly in measuring transformational impacts. This paper introduces a complementary set of enabling conditions, organised across four pillars and reinforced by equity and partnerships, to strengthen the RtR and SAA frameworks and guide their implementation.

The paper concludes with a call for public consultation to co-create a shared agenda for delivery and impact at Conference of the Parties (COP) 30.

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Problem Statement

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2.1. The Urgent Need for Adaptation & Resilience

The intensifying climate crisis is exerting increasingly severe and interconnected impacts on human well-being, ecosystems and economies. Escalating heatwaves, floods, droughts, sea-level rise and slow-onset events are already undermining development gains and increasing the pressure on societies and natural systems worldwide. Adaptation and resilience are no longer optional; rather, they are essential pillars of climate action crucial for protecting lives, livelihoods and ecosystems (IPCC, 2023).

The most vulnerable populations, particularly low-income communities, women and girls, children, young and elderly people, and Indigenous People and local communities, continue to shoulder the greatest risks despite contributing least to climate change (Global Stocktake, 2023; IPCC, 2023; World Bank, 2025). In developing countries and small island developing States (SIDS), the convergence of climate shocks and socio-economic inequalities increases both vulnerability and the risks of irreversible loss and damage (Mycoo et al., 2022; Rockström et al., 2023; UNDP, 2024).

Despite this urgency, adaptation remains substantially underfunded and underimplemented (UNEP GAP Report 2023, 2024; IPCC, 2023). The Global Stocktake confirms that current efforts have fallen short in scale, speed and equity. The window for reducing vulnerability and building climate-resilient development is narrowing rapidly (IPCC, 2022). Mitigation alone is no longer sufficient; robust, system-wide adaptation strategies are essential.

These strategies, ranging from nature-based solutions and early warning systems to gender equity, poverty reduction, public health and food and water security, must be proactive and integrated. Without such systemic interventions, climate risks cannot be reduced at the necessary speed or scale (Cohen et al., 2022; Schipper et al., 2022; Rockström et al., 2023).

A crucial component of adaptation success lies in creating enabling conditions, defined as factors that increase feasibility and accelerate implementation. These include inclusive knowledge systems, enabling markets, finance, collaborative partnerships and effective governance (Colloff et al., 2021; Schipper et al., 2022; Chiriacò et al., 2025; Birchall et al., 2023; Gupta et al., 2024). Emerging markets for adaptation solutions ranging from resilient infrastructure to urban nature-based cooling concurrently present new opportunities for innovation and investment (Tailwind, 2025).

This white paper explores how RtR and the SAA are strengthening both the resilience of people and systems directly and that of the broader enabling environment. Together, these efforts help to lay a foundation for transformational adaptation at the pace and scale demanded by the present.

2.2. Overview of RtR and SAA Efforts

RtR is a global campaign launched at the Climate Adaptation Summit in 2021 by the UN Climate Change High-Level Champions (C-HLCs). It serves as a platform on which to mobilise non-State actors (NSAs), including investors, businesses, cities, regions and civil societies, to enhance the resilience of people and nature in the face of worsening climate impacts. RtR has set an ambitious goal: to increase the resilience of 4 billion people by 2030, reflecting the estimated population that will face increasing climate risks even under full implementation of the Paris Agreement (IPCC, 2022).

To date, RtR includes 42 partners operating in over 160 countries, who are collectively implementing action plans targeting more than 2 billion of the most vulnerable people through concrete adaptation and resilience actions (see the RtR Campaign 2024 Progress Report). These efforts include protecting and restoring nature and assets, improving preparedness and awareness, promoting equity and strengthening capacity. Many partner initiatives also contribute to broader enabling conditions for systemic adaptation through improving governance, advocating for regulatory change, supporting inclusive decision-making, integrating diverse knowledge systems and fostering innovation and research.

Complementing RtR, the SAA was launched at COP27 by the COP Presidency and the C-HLCs in collaboration with the Marrakech Partnership for Global Climate Action, UN agencies and a broad network of implementing partners. The SAA has set measurable targets to accelerate adaptation and finance by 2030 through inclusive, effective and equitable actions.

The SAA identifies more than 45 aspirational outcome targets across six critical systems: food and agriculture, health, human settlements, coastal and ocean systems, infrastructure and water and nature. It further identifies two cross-cutting enablers: finance and planning and policy. These targets are aligned with the GGA and the UAE Framework for Global Climate Resilience. The SAA is supported by seven Task Forces involving over 100 organisations that coordinate system-level implementation and track progress (see SAA Implementation Report 2024).

In 2024, the SAA expanded to include a private sector community of businesses, financiers and non-governmental organisations to mobilise scalable adaptation solutions and commitments. The SAA continues to enhance action around taxonomies and tracking approaches to catalyse the implementation and financing of adaptation.

2.3 Challenges and Experiences in Measuring Progress in Resilience

Although tracking progress is central to both RtR and the SAA, it remains a major challenge. To address this, the RtR Technical Secretariat, hosted by the Center for Climate and Resilience Research (CR)2, has developed and implemented the RtR Metrics Framework. This tool was created through a 4-year collaborative process involving scientists, practitioners and the RtR Advisory Body (Billi et al., 2024).

This framework defines seven Resilience Attributes[1] as proxies for measuring how partner actions contribute to resilience. These attributes are aggregated into a Resilient Increase Index to estimate the number of people made more resilient by partner interventions. The results are published annually and visualised through the RtR Data Explorer[2].

The RtR Metrics Framework was demonstrated to be an effective, powerful and pioneering tool enabling the Campaign to understand the progress and gaps in and outcomes of resilience-building; promote monitoring, evaluation and learning (MEL) about adaptation; bring together multiple and heterogeneous efforts; and understand the integrative impact of these efforts on increasing the resilience of vulnerable people. However, its focus on capturing the measurable benefits of actions on individuals through its Resilience Attributes has reduced its suitability for assessing the potential impacts of more general or indirect actions, including those aiming to promote system-level changes that can foster fertile conditions to accelerate or implement adaptation.

The SAA has been tracking the progress of its 45 outcome targets using a combination of quantitative and qualitative change metrics collected by each of the seven Task Forces. These Task Forces actively collaborate with the SAA to document partners' ground-level implementation and assess overall system advancement at the global scale. Despite these collaborative efforts, several substantial challenges remain, namely in standardising metrics across diverse adaptation contexts, ensuring consistent data collection and establishing clear links between locally led implementation efforts and global resilience outcomes. The complexity of measuring adaptation and resilience, particularly in rapidly changing climate conditions, requires continued refinement of the tracking framework to effectively identify the enabling conditions that lead to meaningful progress towards the SAA outcome targets.

To face these challenges, RtR and SAA have identified a set of enabling conditions that would complement RtR's Resilience Attributes and offer both initiatives a unified approach towards highlighting and assessing partner contributions in areas beyond direct, individual-level impacts. These contributions include those guiding adaptive capacity, promoting social equity and creating flexible systems that can evolve as social and environmental conditions change. Through this joint effort, RtR and the SAA hope to strengthen their MEL mechanisms while acknowledging and pioneering work that can inform other global efforts to develop metrics for adaptation, including the discussion around the UAE's Framework for Global Climate Resilience.

Analysis and Key Insights

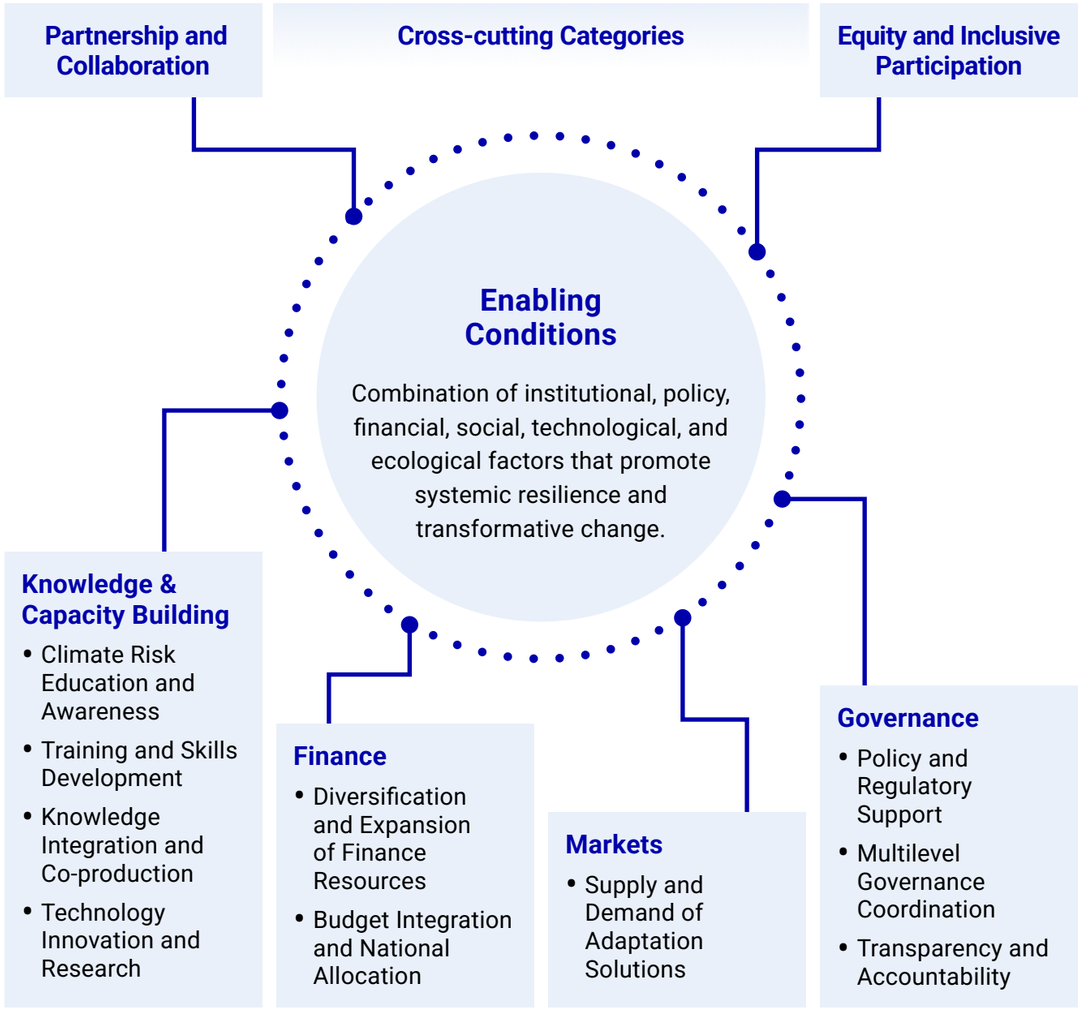
3.1. Understanding Enabling Conditions in Resilience Building

Environments that enable implementation by governments, financiers, businesses and communities are required to accelerate climate adaptation and resilience. These enablers involve a combination of institutional, policy, financial, technological, social and ecological factors that promote systemic change and resilience (UNFCCC, 2024; IPCC, 2022; NAP Global Network, 2023).

Key enabling conditions include a strong political will, clear policies, robust institutions, accessible finance and inclusive governance[3]. They are further strengthened through localised knowledge, Indigenous practices and community networks (Berkes et al., 2000; Orlove et al., 2023). Public–private partnerships play a necessary role, especially when supported by risk-sharing mechanisms and regulatory frameworks that promote innovation and redirect capital towards climate-resilient investments (World Bank, 2021; Casady et al., 2024, Kreibiehl et al., 2022).

RtR and the SAA have made significant progress in showcasing the results of actions implemented by NSA to enhance people's resilience to climate change (e.g. RtR Solution Stories, RtR Data Explorer). However, the great majority of RtR and SAA partners are also working to create the enabling conditions necessary to foster systemic resilience. These efforts fall into four main categories: knowledge and capacity building, finance, markets and governance[4]. Cross-cutting themes, such as equity, participation, and partnerships, further enhance these categories and promote inclusivity, collaboration and innovation across systems (see Fig. 1).

Figure 1. Main enabling conditions and cross-cutting enablers implemented by the Race to Resilience (RtR) Campaign and the Sharm El-Sheikh Adaptation Agenda (SAA). The four enabling conditions – **Knowledge and Capacity Building, Finance, Markets and Governance** – form the foundation of resilience-building efforts. Each condition includes specific subcategories to support more detailed and context-specific implementation. These conditions are further supported by two cross-cutting enablers: **Partnerships and Collaboration and Equity and Inclusive Participation**.



3.1.1. Knowledge and Capacity Building

Knowledge and capacity building are essential enablers of advances in adaptation and resilience. Within the UNFCCC framework, capacity building aims to strengthen countries' and communities' ability to effectively respond to climate change. This includes enhancing institutional capabilities, developing technical skills and mobilising resources through training, toolkits and digital platforms to support adaptation, mitigation, technology transfer, access to finance and transparency (e.g., Iñiguez-Gallardo et al., 2023; Cedergren and Hassel, 2024).

Central to this process is the integration of diverse knowledge systems – scientific, Indigenous and local – via top-down, bottom-up and co-production approaches (e.g., Guodaar et al., 2021). These frameworks empower stakeholders, increase awareness, support the effective communication of science and technological benefits, shape behavioural shifts and support more inclusive policy reform (UNFCCC, n.d., Climate-ADAPT 2016, Hiwasaki et al., 2014; Olazabal et al., 2018, 2025, Guodaar et al., 2021, Bolden et al., 2018). MEL systems are especially crucial, as these help to assess adaptation progress, refine strategies and share best practices (Beauchamp et al., 2024).

RtR partners have provided tangible examples of these enablers in action. For example, REAP supports the integration of comprehensive risk management into national planning while developing e-learning modules for early action. Sanitation Water for All (SWA) has contributed to the UAE–Belém Work Programme by defining indicators for resilience. The Adaptation Research Alliance has advanced transparency through the updated RegionsAdapt Subnational Progress Tracker Tool, and its Toolkit provides guidance for subnational governments regarding vulnerability assessments and adaptation planning. Together, these initiatives demonstrate how knowledge and capacity building catalyse resilience and provide a foundation for systemic adaptation at scale.

Photo Credit: Marcelo Novais

3.1.2 Climate Finance

Climate finance encompasses local, national and transnational financial flows, which are mobilised from public, private, philanthropic and innovative sources, to support mitigation and adaptation strategies that build climate-resilient societies (UNFCCC, n.d.). Large-scale funding investment, such as that provided by the Special Climate Change Fund, Least Developed Countries Fund and Adaptation Fund, is required to shift towards resilient, low-carbon development that enables locally led adaptation actions to benefit people, nature and the economy (UNDP, 2023).

Diversifying finance sources enhances system resilience, mitigates budgetary and risk-related barriers and ensures that funds are aligned with local adaptation needs (Chirambo, 2017; Hussain et al., 2021). A broad financial base also improves access and relevance across sectors and scales (Bhattacharya et al., 2024). Achieving climate justice and meeting the adaptation finance gap require a decisive shift towards implementation through, for example, increases in public–private contributions, expanded access to funds and strengthened pipelines for bankable projects (OECD, 2023; Tandukar et al., 2025).

Public institutions and philanthropists catalyse this process by de-risking investments and mobilising private capital. This is exemplified by the SAA's Call for Collaboration, which unites stakeholders in co-designing financial instruments, improving tracking mechanisms and guiding investments towards locally relevant adaptation solutions.

RtR partners have highlighted this process in practice. For example, Efficiency for Access (EForA) has provided grant funding to 17 grantees working on innovative technologies for early-stage appliances in sub-Saharan Africa and Asia. RegionsAdapt is advancing a fundraising proposal aimed at building pipelines to support subnational adaptation projects seeking to improve access to finance by connecting local governments with capital flows, thus facilitating increased investment in resilience-building initiatives at the regional level. REAP is developing resources intended to support the improvement and adaptation of financial mechanisms, making them more responsive and accessible to early action initiatives. Finally, SWA is strengthening the integration of climate considerations into water sector financing by supporting the Green Climate Fund.

Together, these examples illustrate that scaling climate finance is a matter of not only volume but also structure and access, ensuring that funding is both adequate and aligned with those most vulnerable to climate impacts.

3.1.3 Markets

Markets are a dynamic and increasingly important enabling condition for accelerating climate adaptation. While nascent, the emergence of adaptation markets reflects a powerful set of mutually reinforcing interactions between demand and supply, driven by the growing urgency of climate risks (Goldstein, 2015). As extreme weather events and systemic vulnerabilities escalate, so too does the need for innovative adaptation solutions ranging from drought-resistant crops and heat-resilient infrastructure to advanced early warning systems and parametric insurance.

This growing demand generates a “market pull” effect in three key ways.

- **First**, intensifying climate impacts are driving a surge in demand for adaptation products, services and technologies. This includes everything from flood-proof housing and green urban infrastructure to climate risk analytics and microinsurance (Polaris Market Research, 2024). As demand expands, private sector actors who were previously uninvolved in adaptation are increasingly entering the space, spurred by new opportunities for innovation and value creation. For instance, insurance providers are offering microinsurance products in drought-prone regions, helping to manage climate risk while incentivising proactive resilience strategies.

- **Second**, clear demand signals help to attract capital. Financial flows, whether in the form of venture capital backing climate-smart agriculture, blended finance for resilient infrastructure or sovereign green bonds targeted at adaptation outcomes, tend to follow visible and growing market needs (Climate Policy Initiative, 2024). Financial instruments such as green bonds showcase this enabling function by targeting capital towards climate resilience projects while establishing frameworks for measuring adaptation outcomes. This evolving interest from investors and businesses creates the conditions for adaptation markets to emerge.

- **Third**, early-stage adaptation markets can catalyse the broadening of enabling environments. As market signals grow stronger, they create feedback loops that pressure public institutions to respond through regulatory reforms, public procurement standards and mandatory climate risk disclosures. These measures, in turn, support the maturation of adaptation markets by reducing uncertainty and guiding private-sector engagement (Peace et al., 2020). Measures of this kind include certification schemes, procurement standards or risk disclosure frameworks that guide market behaviour and pull institutions towards reform.

Such market formation is already visible in the contexts of RtR and the SAA. For example, partners of the SAA have reported market advancements on regional power pool integration to drive innovation for climate adaptation and resilience by creating flexible, interconnected energy systems that can withstand climate-related disruptions. As precipitation variability increasingly threatens hydropower reliability, regional integration allows countries to diversify their energy sources and share renewable resources across borders, reducing vulnerability to localised climate impacts. Recent developments demonstrate this market-driven approach in action: the Great Sea Interconnector will link European and Middle Eastern grids through Greece, Cyprus, and Israel, while Africa's OMVS project has connected Mali and Senegal's power systems to facilitate electricity trade across the Sahel region.

Similarly, Southeast Asian nations are prioritising interconnected power systems under ASEAN leadership to enhance regional energy cooperation. These market-based solutions create the infrastructure and institutional frameworks necessary for climate resilience, though further operationalisation is needed to fully realise their adaptive potential, particularly for hydropower-dependent nations facing changing precipitation patterns.

As public and private sectors respond to growing risks, a virtuous cycle of innovation, investment and policy alignment takes shape. With proper governance and equity safeguards, adaptation markets can scale solutions and deliver co-benefits across economic and social systems.

Photo Credit: Alex Block

3.1.4 Governance

Governance refers to the formal and informal structures and rules that shape how public and private actors address climate challenges. Effective climate governance aligns institutions, clarifies roles and enables coordinated adaptation responses across all levels, from global to local (Billi et al., 2021, IPCC glossary).

Evidence shows that clear policies, legal instruments and multilevel coordination enhance adaptive capacity (Khavhagali et al., 2023; IPCC, 2022). These aspects also enhance the ability of governments and stakeholders to assess climate risks, uncertainties and pathways for climate-resilient development (Schipper et al., 2022; Galaz et al., 2017). Importantly, evidence also shows that governance involves not only structure but also legitimacy, participation and the capacity to adapt institutions to emerging risks. Strengthening governance is thus fundamental to enabling transformational resilience (Chaffin et al., 2016).

Resilience actions aimed at enabling changes in governance systems include reforming policy frameworks, legislation and litigation; enhancing the roles of national and regional governments; developing strategies and action plans; implementing legal and policy instruments; establishing regulations and standards; strengthening policy tools; and promoting multilevel governance.

ICLEI, an SAA partner under the Human Settlements Systems Task Force, provides an example of governance as an enabling condition for climate resilience. This partner reports the formation of the Coalition for High Ambition Multilevel Partnership for Climate Action (CHAMP), which is mobilising local and regional governments to commit to the planning, financing and implementation of climate strategies and policies. As of 2024, CHAMP has tracked pledges from over 70 cities, states and regions that are committed to limiting the global temperature rise to less than 1.5 °C average warming. RegionsAdapt, an RtR partner, is amplifying the role of regional governments in sustainable development through its global campaign *#RegionsVoice* by conveying collective regional messages to key UN events and negotiation processes, aiming to increase visibility, recognition and engagement during the UN Decade of Action. Another RtR partner is driving cross-sectoral collaboration and political momentum for climate-resilient water and sanitation systems by supporting high-level meetings with finance ministers in Latin America and the Caribbean. This initiative also contributes to the UNFCCC working group tasked with updating the National Adaptation Plan (NAP) technical guidelines, thus ensuring the integration of water, sanitation and hygiene (WASH) into climate adaptation planning.

3.1.5 Cross-cutting Categories

Two cross-cutting enablers, namely ***Partnerships and Collaboration*** and ***Equity and Inclusive Participation***, play a foundational role across all dimensions of adaptation.

Both enablers emphasise the importance of participatory approaches that integrate diverse knowledge systems and ensure fair representation (de Vente et al., 2016; Buso and Stenger, 2018; Reed et al., 2018; Vincent et al., 2018; Tarchiani et al., 2020). They serve as bridges between scientific, Indigenous and local knowledge and encourage inclusive processes in which all voices are heard and respected (Muir et al., 2023; Aburto et al., 2024). Facilitated spaces for dialogue between communities, policy-makers and scientists can enhance collective learning and decision-making[5].

Embedding equity in governance through laws, policies and programmes that address inequalities based on gender, age, ethnicity, ability, geography or income enables more just and effective building of resilience (Cairney et al., 2023; NAP Global Network, 2024). The impact of adaptation efforts is increased when co-learning platforms, participatory planning and community-led implementation are incorporated (IPCC; 2018; Rojas and Billi, 2023).

Examples from RtR partners illustrate such incorporation in action. REAP promotes partnership by facilitating monthly meetings where different initiative members can share their work, as well as new approaches, technologies and lessons learned. REAP also leads a dedicated Working Group focused on linking social protection with early action and developing advocacy materials to promote shock-responsive and adaptive social protection systems. SWA facilitates the Climate Action Task Team, which brings together diverse WASH stakeholders ranging from civil societies to the private sector to strengthen collaboration. This group is contributing to the UNFCCC GGA Work Programme by developing joint inputs regarding indicators and advancing a shared definition of climate-resilient WASH services. Finally, EForA is leading a design challenge to strengthen youth engagement. This initiative increases students' capacity to conceptualise technologies, thus laying the base for future innovation and implementation.

Photo Credit: JSB Co.

3.2. Relationship between Enabling Conditions and Transformational Change

"Transformational change" refers to structural or systemic shifts that go beyond incremental improvements to address climate risks at their root. It often involves changes in societal values, institutions and behaviours, catalysed by adaptation barriers that highlight the need for more profound interventions (O'Brien et al., 2015).

One common approach used to address transformational change focuses on identifying hard and soft limits to adaptation, which signal the point at which the implementation of incremental efforts becomes insufficient and more fundamental system changes are needed. In particular, hard limits represent thresholds beyond which adaptation actions cannot prevent intolerable risks or irreversible losses, particularly in climate-sensitive ecosystems where there may be few options available to avoid damage and the loss of some or all unique characteristics (UNEP Copenhagen Climate Centre, 2022). These hard limits emerge when the rate and magnitude of climate change outpace natural or human systems' ability to adapt and reduce their vulnerability, regardless of the resources or technology available. Soft limits occur when technological, economic or social constraints temporarily prevent effective adaptation but might be overcome through policy changes, increased resources or shifts in governance approaches; an example is a community lacking access to climate finance (UNEP Copenhagen Climate Centre, 2022).

While the previous approach is useful for clarifying the need for transformational adaptation, it is less able to track progress on this matter. In contrast, signals of transformational change are measurable indicators that track fundamental changes in the attributes, structures and functions of systems as they adapt to climate impacts[6]. These signals capture both gradual shifts and profound structural changes, demonstrating effective, large-scale systemic changes that reinforce climate adaptation and resilience.

Monitoring and evaluating transformational change serve several essential purposes. First, these actions help to identify and distinguish practices that foster adaptation and resilience transformations while avoiding ineffective or maladaptive actions. For example, when identifying effective practices, such as community-based early warning systems, communities and policymakers can prioritise investments in these practices over less effective alternatives. Second, such monitoring and evaluation can build trust and confidence in the feasibility and effectiveness of policy-collective transformative adaptation approaches, encouraging decision-makers to shift from incremental to fundamental system changes while increasing the mobilisation of finance. Third, these actions enable an understanding of progress and gaps and highlight priorities and opportunities for increasing the capacity for transformational change towards adaptation and resilience; examples include tracking the implementation rates of adaptation measures, analysing their effectiveness and identifying specific sectors lagging in transformation.

Enabling conditions do not always constitute signals of change; rather, they create fertile environments that can contribute to both incremental and transformational change. In many cases, however, enabling conditions can directly catalyse and activate the transformations needed for adaptation and demonstrate meaningful progress towards climate resilience across multiple scales. In the following paragraphs, we exemplify these signals across the categories of enabling conditions introduced above.

In **financial systems**, the signals include harmonised disclosure standards, scaled capital flows and new financing models. The International Sustainability Standard Boards' sustainability standards represent a major step towards harmonised climate risk disclosure and have been adopted in over 20 jurisdictions covering 55 per cent of the global gross domestic product (IFRS Foundation, 2024). The Climate Policy Initiative's tracking methodology (2024), mobilised through the Call for Collaboration, has improved the visibility of the private sector's contribution to adaptation finance, which currently accounts for just 2 per cent of all adaptation and resilience funding. Looking ahead, the UNEP estimates that the global adaptation solutions market must grow to an annual value of USD 215–387 billion. Encouraging signals are emerging, including that investments in climate-resilient infrastructure are accelerating, corporate climate disclosures are expanding, nature-based urban solutions are gaining traction and community-led initiatives are scaling. Together, these trends reflect a shift towards proactive adaptation and a reconfiguration of financial mechanisms to meet growing resilience needs.

Increasingly, transformational change in **climate governance** is demonstrated by policy instruments and legislative agendas that promote climate justice, accelerate decarbonisation and reorient institutions toward system-wide resilience (Pelling, 2010; Korhonen-Kurki et al., 2025). A notable example is the SAA Food and Agriculture Systems Task Force, which advances sustainable and regenerative agricultural practices. These efforts have been reinforced by the COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action, which was endorsed by 160 Heads of State, signalling a collective shift in global policy priorities towards food systems transformation.

Beyond legislative reform, transformation emerges from the capacity of governance systems to evolve. This capacity includes policy flexibility, institutional innovation and the promotion of inclusive dialogue that embeds adaptation and resilience into governance structures. Simultaneously, citizen-led climate action, embedded in networked governance structures, is shaping decision-making from the ground up, thus strengthening public accountability, local participation and policy responsiveness (Tosun et al., 2016).

Knowledge and capacity building drive signals of transformation change via shifts in how knowledge is produced, shared and applied. This includes the activation of double- and triple-loop learning, where stakeholders reflect on not only strategies but also underlying values and assumptions. Initiatives such as science–policy interfaces, participatory scenario building and co-created MEL systems exemplify this transformation. For example, consistent frameworks for tracking and measuring private adaptation investments are being developed to support unified adaptation taxonomies that improve finance data; examples include those created by the Global Adaptation & Resilience Investment Working Group (2024), the and the Climate Bonds Initiative. Meanwhile, the Multilateral Development Banks Working Group has introduced a joint methodology for reporting adaptation finance, supporting a context-sensitive and conservative approach to investment reporting (European Investment Bank, 2022). These frameworks enhance transparency,

decision-making and the alignment of private capital with climate resilience goals.

Markets, the final enabling condition, often demonstrate transformational change through market-based indicators such as green finance growth, sustainability-oriented business models and changes in supply and demand (Kerrigan and Kulasooriya, 2020; McKinsey, 2022). "Green finance growth" refers to the mobilisation of financial resources, including investments, loans or capital, dedicated to addressing climate challenges (Fu et al., 2024). Currently, green bond markets have grown to $2.9 trillion, a sixfold increase over the amount in 2018, showing how market-based approaches can rapidly scale financing for climate solutions when the necessary structures and incentives are in place (Demski et al., 2025). Sustainability-oriented business models represent a shift in how companies create and deliver value by integrating environmental and social considerations into their core operations, such as supply chain transformations that prioritise sustainable sourcing (SAP, n.d.). Finally, changes in market representation involve how markets understand, value and communicate environmental efforts. These changes may include the evolution of marketing language or consumer preferences, such as sustainability-conscious purchasing patterns. Overall, these market-based indicators signal a shifting landscape where climate action is a central driver of business strategy and capital allocation rather than a secondary consideration.

Cross-cutting enablers such as **partnerships and collaborations** support transformational change by mobilising diverse resources, ensuring coordinated action and creating platforms for knowledge exchange, where multiple perspectives can converge to generate innovative solutions that cannot be achieved in isolation. For instance, the Baku COP Presidencies Continuity Coalition for Climate and Health, co-led by Azerbaijan, the United Kingdom, Egypt, the United Arab Emirates, Brazil and the World Health Organization, demonstrates multi-COP alignment and commitment; by scaling climate-health financing and aligning global efforts, it exemplifies how multi-stakeholder coalitions can institutionalise transformational change. Such initiatives ensure that transformation is not only technically feasible but also socially inclusive and politically supported.

The final cross-cutting enabling condition that reinforces transformational change is **equity and inclusive participation**. This condition recognises that effective adaptation requires the meaningful involvement of all affected stakeholders, particularly those who have historically been marginalised such as women, youth and Indigenous Peoples. Some current examples of transformational change include the formulation of the Principles for Just Food System Transitions by the Just Rural Transition initiative, which has outlined 10 guiding principles to achieve a just food system transition that emphasises rights-based approaches and local ownership of solutions. Similarly, the Climate Investment Fund has designed a Just Transition Planning Toolbox, which provides practical guidance and resources for planning climate and sustainability transitions that are equitable and inclusive.

Call to Action: Opportunities and Next Steps

Over the past 4 years, the RtR Metrics Framework has shown that adaptation and resilience progress can be meaningfully tracked using well-designed indicators. However, it has also revealed the need for more sophisticated MEL systems capable of not only assessing direct benefits but also enabling conditions and systemic change.

Many adaptation actions operate at a systems level. They do not always produce immediate, quantifiable outcomes but instead create institutional, financial or social conditions that enable broader, more durable change. Recognising this, RtR and the SAA have worked to identify and measure such enabling conditions across NSA networks. This paper illustrates how these conditions, ranging from governance and finance to knowledge, markets and participation, are being delivered by RtR and SAA partners and are directing efforts towards climate resilience.

Both RtR and the SAA are advancing methodologies to capture transformational change. This effort involves moving beyond traditional metrics to track signals of system-level shifts, such as new regulatory frameworks, emerging markets for adaptation solutions or institutional reforms in water governance. By embedding these signals into adaptation tracking, RtR and the SAA are enabling a more complete and credible overview of progress. **The combination of policy commitments, financial innovation, multi-stakeholder partnerships and standardised methodologies has created an increasingly robust tracking system that can identify positive transformation occurring at the scale and pace required to achieve global climate action.**

The process of harmonising taxonomies, aligning data collection methods and applying context-specific indicators across regions and sectors is complex. Addressing these issues can provide opportunities to build more integrated, inclusive and flexible approaches to MEL that support both local and global adaptation efforts.

As increasing climate risks are disproportionately affecting vulnerable communities, the need for robust, systems-oriented tracking frameworks has never been more urgent. RtR and the SAA will

continue to convene diverse coalitions of experts to refine their MEL approaches, blending quantitative and qualitative methods to better capture the complexity of adaptation and transformation.

The C-HLCs play a vital role in this process. At major international fora, such as the UNFCCC COP and Regional Climate Weeks, C-HLCs are amplifying the voices of NSAs regarding adaptation. Through collaboration with the Marrakech Partnership Resilience Focal Points, the C-HLCs are consolidating tracking efforts focused on people, ecosystems and economic outcomes.

As part of this effort, the C-HLCs have submitted their joint contributions to the UAE–Belém Work Programme and plan to expand NSA consultations throughout 2025. RtR will also integrate specific questions on enabling conditions into its reporting framework, thus ensuring that partner activities are captured through a systemic lens. The findings will inform a comprehensive progress report to be launched alongside the SAA Implementation Report at COP30, summarising adaptation efforts across 45 outcome targets.

Beyond tracking, RtR and the SAA are actively shaping environments to enable adaptation finance and business engagement. Both initiatives are helping to unlock private sector finance through collaborations with partners such as the Atlantic Council and the World Business Council for Sustainable Development. These efforts include supporting capacity building for local financial institutions and promoting transparent disclosure practices in alignment with emerging global standards.

Together, these efforts are advancing what RtR and the SAA describe as a “just, resilient transition”: a model that aligns mitigation and adaptation objectives, ensures social equity and centres the leadership of vulnerable and historically excluded groups. The integration of participatory approaches, scientific knowledge and Indigenous wisdom reinforces this vision and strengthens its legitimacy.

In light of these developments, we call on the global adaptation and resilience community – both State actors and NSAs – to take the following actions:

- **Recognise enabling conditions as key components of incremental and transformational climate adaptation and resilience.** The identification, development and tracking of enabling conditions need to be integrated into adaptation planning, implementation and monitoring frameworks at all levels.
- **Adopt and scale indicators beyond counting beneficiaries.** Frameworks that capture both quantitative outcomes and qualitative signals of systemic change should be embraced to enable adaptation progress to be measured in terms of not only reach but also depth, durability and equity.
- **Advance global learning on transformational change.** Actors should contribute to methodologies for identifying and tracking the signals of transformational change, thus enabling robust, transparent and comparable assessments across regions, sectors and scales.
- **Technology, including artificial intelligence and digital MEL tools**, should be harnessed to support assessments of enabling conditions, strengthen data systems and build inclusive local and global knowledge networks.
- Actors should embed learnings, experiences and solution stories, as well as the lessons learned from **building MEL systems** that can enable their identification, in discussions that emerge ahead of COP30. This will enable actors to identify insights to inform ongoing discussions on indicators for the GGA, scale opportunities to accelerate actions enabling conditions for resilience and enhance the leadership of RtR and the SAA to successfully articulate additional actors (including NSAs) to advance adaptation agendas.

Finally, sustained engagement will be essential. We encourage stakeholders to continue to enhance their MEL capacity and build transparent and accountable reporting systems. These efforts should be aligned with broader adaptation finance and policy agendas, such as the GGA and NAPs, while elevating the role of NSAs as catalysts for innovation, delivery and accountability.

Open Public Consultation

As part of this process, the SAA invites stakeholders to participate in a public consultation on this white paper. Feedback, questions and suggestions may be submitted to **adaptation@climatechampions.team** or via this consultation **survey** open through 31 August 2025.

Contributions will be reviewed for inclusion in the next **SAA Implementation Report**, which will reflect ongoing progress towards building global resilience.

Thank you for your continued engagement and collaboration in advancing a more resilient, inclusive and equitable future.

Photo Credit: Vigneshwar Rajkumar

Endnotes

[1] As explained in the RtR Metrics Framework, the Resilience Attributes approach has several advantages, including the abilities to aggregate impacts across multiple kinds of actions, correct for potential double counting and avoid the need for complex estimations of baselines, endlines and attributions. As explained below, the enabling conditions built through this experience can complement the Resilience Attributes in capturing more "indirect" and system-level types of impacts, which would otherwise not be sufficiently considered. Both approaches are meant to seamlessly integrate within RtR, although only the Enabling Conditions are currently applicable to the SAA.

[2] The RtR Data Explorer is under revision and the new version will be presented at COP30. This new version will feature improved data visualisation and a more dynamic interface, enabling users to access and explore more comprehensive and detailed information about the RtR Campaign.

[3] Notably, the definition of Enabling Conditions was informed by (and attempted to align with) similar approaches to enabling factors and/or cross-cutting considerations such as those advanced by the Adaptation Committee, NAP Global Network or the GGA Framework, among others. However, as the present proposal is meant for non-Party stakeholders, it must be emphasised that there is no full coincidence between these categories and that the present proposal is not in any way aiming to substitute for much-needed debates on this topic by COP parties.

[4] These categories loosely map to the "three revolutions" proposed by the Global Commission on Adaptation in understanding, planning and finance.

[5] As mentioned above, cross-cutting factors, like the other enabling conditions, are inspired by existing frameworks such as the UAE Framework for Global Climate Resilience; however, as enabling conditions are designed for NPSs, they do not necessarily fully map with these frameworks nor are they meant to substitute for Party debate regarding indicators for the UAE GGA Framework.

[6] This definition synthesises elements from previous conceptualisations of transformational change signals developed by the following organisations: Transformational Change Learning Partnership, IPCC Working Group II, and International Climate Finance.

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Thanks also to authors and contributors:

RtR Advisory Group – Methodological Group

- Anand Patwardhan
- Emilie Beauchamp
- Ana María Loboguerrero
- Marta Olazabal
- Patricia Villarroel Sáez
- Tariq Al-Olaimy
- Md Nurul Alam
- Karl Schultz

RtR Technical Secretariat – CR2

- Laura Ramajo
- Marco Billi
- Francis Mason
- Nicolle Aspee
- Carla Lanyón
- Maria Paz Cárdenas

Climate Champions Team

- Daniela Palma
- Mariam Allam
- Maria Aguilar
- Marcia Toledo
- Ramiro Fernandez

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