



SAA

**SHARM
ADAPTATION
AGENDA**

IMPLEMENTATION
REPORT 2023

**SHARM
EL-SHEIKH
ADAPTATION
AGENDA**



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FOREWORD

The Global Stocktake and Global Goal on Adaptation make COP28 an unprecedented prompt for parties and other stakeholders to deliver an adaptation implementation agenda that is transformative, inclusive and catalyzes the finance needed for global net zero, resilient and nature-positive development.

The world faces grave risks to lives, livelihoods, and the ecosystems upon which they depend, from escalating climate impacts. The IPCC sixth assessment report provides that 3.3 to 3.6 billion people living in climate vulnerability hotspots are disproportionately affected. Systems transformation is desperately needed across themes and sectors to address adaptation and resilience needs for food, water, health, infrastructure, ecosystems, disaster risks, morbidity and mortality, climate migration and displacement, and increased debt burden, among other challenges.

This change will only be possible if adaptation finance from public and private sources is mobilized and accessed at scale, to finance the soaring US\$387 billion annual adaptation finance costs in developing countries, and to scale-up adaptation investments and de-risk innovation. At the same time, the returns on investment in adaptation

and resilience have never been higher, offering exceptional opportunities to fulfill the Sustainable Development Goals and Kunming-Montreal Biodiversity Framework, while also enhancing economic prosperity.

The Sharm El-Sheikh Adaptation Agenda (SAA) consolidates this opportunity to close the implementation gap. It provides a set of clear and tangible near-term solutions that enable adaptation and resilience transformations across all systems to make 4 billion vulnerable people resilient by 2030. As a global adaptation solutions agenda, SAA articulates science-backed adaptation solutions across food and agriculture, water, nature, ocean, health, human settlements and infrastructure systems, and puts ecosystem-based approaches, nature-based solutions, lives and livelihoods, equity and inclusivity at the heart of adaptation action.

Following its inception at COP27 through the leadership of COP27 Presidency and UN Climate Change High-Level Champions which was welcomed by the Sharm El-Sheikh Implementation Plan; the SAA started operationalization in 2023 through seven task-forces that leverage a coordinated adaptation response between COP Presidency initiatives, businesses, financiers, NGOs, cities and regions, UN agencies,



Marrakech Partnership, and Race to Resilience partners, among others. The emphasis on 2023 was to:

- ▶ Consolidate the set of solutions across systems and refine the SAA 2030 adaptation outcome targets through a wide consultation and co-creation process that puts locally-led adaptation at the center;
- ▶ Convene diverse stakeholders and catalyze action to accelerate implementation of the adaptation solutions through efforts such as the Coral, Mangrove, and Ocean Breakthroughs and Early Warning Systems for All; and
- ▶ Develop an assessment approach to track progress.

SAA also notably this year built on COP27's Initiative on Climate Action and Nutrition (ICAN) and identified a set of key health-adaptation outcomes, in collaboration with the COP28 Presidency, the World Health Organization (WHO) and the International Federation of Red Cross and Red Crescent Societies (IFRC).

This collaboration is one of several SAA partnerships that can be found in this report.

To secure sustained implementation and annual reporting of SAA progress on adaptation and resilience at successive UNFCCC Conferences of Parties, a Steering Committee was established and convened by the COP27 and COP28 Presidencies, the UN Climate Change High-Level Champions, Special Adviser and Assistant Secretary-General for Climate Action at United Nations, UNFCCC, UNEP FI and Rockefeller Foundation, to provide strategic guidance, support contributions of the SAA to global policy processes, and unlock impactful partnerships to accelerate adaptation investments.

Looking ahead, the urgency of collaboration among businesses, financiers, cities, regions, civil society groups and governments in adaptation implementation will only grow, and we invite all stakeholders and initiatives to join us in this effort. The SAA will continue to convene, catalyze and unlock opportunities that keep our focus on people and our underpinning

ecosystems – and provide the inspiration and rationale for greater climate ambition and action.



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EXECUTIVE SUMMARY

This year is a defining moment for adaptation, resilience, and loss and damage action. Grounded in findings of the IPCC sixth assessment report, the outcomes on enhancing adaptation implementation stemming from the first Paris Agreement Global Stocktake (GST), together with advancements in unpacking the Global Goal on Adaptation (GGA) and the COP27 decision on the Loss and Damage Fund, signal to the world a mounting urgency to improve collaboration and scale-up adaptation action and finance in a transformative manner.

Climate action on adaptation is increasingly shaping economies, nature and human systems through multi-stakeholder collaboration and inclusive, locally-led initiatives. The growing momentum on adaptation is generating myriad opportunities for societies and economies to advance resilient development towards 2030 and beyond. To embrace this change we must pivot to a new era of transformational adaptation that is just, equitable, and leaves no one behind.

While adaptation finance flows and planning instruments by public and private actors have seen a marked increase, they are still not enough to meet growing adaptation investment needs and costs. International public

finance for adaptation is 10 to 18 times lower than estimated needs in developing countries, and tracked private finance for adaptation has not exceeded a 2% of available funding.

Transitioning to an adapted and resilient world by 2030 requires significantly scaling up action, finance, and climate-risk informed decision-making by all stakeholders, across geographies and at all scales. At COP28, world leaders, alongside representatives from businesses, NGOs, cities and regions, youth and Indigenous Peoples are coming together to address gaps in our collective climate response.

The Sharm el-Sheikh Adaptation Agenda (SAA) constitutes the global adaptation solutions agenda driving public-private collaboration and partnerships to respond to existing implementation, finance and planning gaps. It offers an opportunity to expedite transformations in human, natural and economic systems at the pace and scale needed to benefit four billion people by 2030, and rally action towards achieving the Global Goal on Adaptation and a portfolio of multi-actor solutions to inform the Global Stocktake.

The SAA converges diverse stakeholders around near-term actionable adaptation

solutions and outcome targets through 2030. It helps guide actions of businesses, investors, cities, regions, NGOs, and local communities towards long-term climate resilience.

The SAA also provides an opportunity to cascade adaptation and resilience priorities among countries and the ecosystem of non-party actors and vice versa. It promotes the uptake of locally-led adaptation action solutions by subnational and national level decision making. Furthermore, it creates a link and continuity of thematic initiatives related to adaptation and resilience between successive UNFCCC COP Presidencies.

The First Implementation Report of the SAA captures the progress made on adaptation planning and policies, partnerships and inclusivity, knowledge and capacity, technology, innovation and data, and finance by highlighting the signals of change at system and outcome levels. The report sheds light on the critical interconnectivities that exist among economies, nature and human systems and how adaptation solutions delivered have multiple benefits including mitigation co-benefits. It also reflects on the power of radical collaboration between multiple party and non party stakeholders that are paving the way for resilient, net zero and nature-positive development.

To institutionalize the SAA as a global solutions agenda, seven Task Forces and a Steering Committee were established this year to drive partnership engagement, catalyze implementation and track progress across systems and outcomes.

SAA Task Forces embarked on an unprecedented process to convene leading organizations, initiatives and local actors across all priority systems throughout Regional Climate Weeks and key thematic sessions to socialize and refine the agenda through a consultative and inclusive approach.

The Task Forces focused on consolidating the agenda of solutions to ensure that locally-led, inclusive and equitable adaptation action is at the centre. In addition, it identified science-backed baseline information of the progress made in implementing solutions in 2023. This was critical to assess future progress of adaptation implementation at system and outcome levels.

A critical enhancement of the SAA this year, together with the COP28 Presidency and the World Health Organization and the International Federation of Red Cross and Red Crescent Societies, was to include health as a priority system in the SAA and define 2030 health adaptation targets.

The report highlights significant opportunities for transformation to accelerate planning, finance and implementation. It elevates the benefits of integrating planning across systems and levels of governance. In addition, it showcases opportunities for businesses to invest in adaptation with key examples of transformations unfolding across supply chains and business models. Additionally, the report emphasizes the vast potential and pressing need to accelerate action within the finance sector to mobilize funds from public, private, and blended sources, and Multilateral Development Banks (MDBs).

While the emphasis of the report is to highlight progress and opportunities across priority systems, it also acknowledges challenges, gaps, barriers and the urgency to address these issues and catapult action. **The following summarizes progress and key opportunities across systems:**

- ▶ Climate-related impacts on **agrifood systems** cascade across supply chains, nature, economy and people. Because agrifood systems are well featured in countries' climate plans, there is opportunity to accelerate implementation and integration of plans with other sectoral/ local plans and investments. Regenerative, agroecological solutions and planetary-friendly



production examples exist and have proven outcomes. However, policies and public funding could tap into its full potential to foster inclusive approaches (e.g., regenerative, agroecological), enhancement of supply chains (e.g., food loss levels), and improved consumer behavior. Finance must increase by 13x.¹ Radical collaboration is happening, with actors engaging along the food life cycle, from production to consumption.

- ▶ Greater recognition of the importance and potential of nature-based solutions (NbS) in **Coastal and ocean systems**, with almost 100 new or updated NDCs including at least one coastal and marine NbS². A concerted science-to-policy effort was made to translate existing knowledge and guide action with multiple mechanisms and initiatives supporting these efforts, such as knowledge hubs and global frameworks (e.g., Nairobi Work Programme, Kunming-Montreal Global diversity framework). Funding is starting to flow on mangrove protection and restoration projects, but overall investments still fall short of needs, despite a strong economic

case for coastal and marine NbS. And, in the absence of a global coastal resilience finance tracking mechanism, the total amount committed to coastal and ocean solutions is unclear. Radical collaborations have helped converge actors around clear near-term solution outcomes that started with mangroves, extended recently to corals, and are now inspiring similar efforts for seagrass.

- ▶ With the first UN Conference on Water in 46 years that took place this year, and the prominence of Nature as a key theme at COP28, **Water and Nature** are increasingly recognized on the global climate stage as foundational cross-cutting systems, to be protected, restored, and managed sustainably. Positive developments exist in terms of standards and guidance, such as the recognition and universal definition of the term NbS and more advanced standards for private entities on how to set targets and disclose risks related to nature. Nevertheless, integrated planning efforts that streamline water and nature into planning and policy-making at the national, sectoral, and especially local

1 CPI, [Landscape of Climate Finance for Agri-food Systems \(2023\)](#), 2023

2 Ocean & Climate Platform, Conservation International, IUCN, Rare, The Nature Conservancy, Wetlands International and WWF, [Coastal and marine ecosystems as Nature-based Solutions in new or updated Nationally Determined Contributions](#), 2023

levels are still far from optimal. Addressing the barriers of siloed planning, capacity and knowledge, as well as accelerating access to data and information and valuing water and natural resources are the most critical transformations needed. Key to this is multiplying finance for NbS by 2.5x³ by 2025.

- ▶ A growing recognition of the **Health-Climate** nexus exists, with health and climate communities alike elevating these topics on global agendas. To build upon this momentum, the SAA has now adopted a new 2023 Health impact system, comprising four new Adaptation Outcomes around finance, surveillance systems, heat resilience and health infrastructure and facilities. There is also notable progress on policy with a marked increase in health representation in NDCs (Lancet 2022; 86% of 126 UN members)⁴ and 81 countries having designated a Health-Climate focal point in their government to coordinate cross-sectoral action and collaboration. However, finance remains a major gap preventing implementation with 70% of countries identifying insufficient finance as a key barrier to implementation in 2021.
- ▶ Cities and regions are prioritizing adaptation because they are at the frontlines of the climate crisis in **Human Settlements**. Some progress has been made in planning and policy and more cities have detailed, science-based climate adaptation plans or strategies in place. Multi-level governance is critical to improve planning and access finance. An increasing number of global initiatives are mobilizing finance at the city level (e.g., ICLEIs TAP, The City Climate Finance Gap Fund). Regional initiatives such as the Decent Life Initiative for a Climate Resilient Africa are advancing adaptation in rural development and initiatives like Early Warning for All (EW4ALL) are advancing coverage of early warning systems by 2027.
- ▶ **Transportation and Energy systems** are still insufficiently represented in countries' adaptation and resilience planning; nor is adaptation well considered in national energy plans, or national development strategies. Here, there are great opportunities to develop a common taxonomy for resilient infrastructure, standards and

3 UNEP, [State of Finance for Nature](#), 2023

4 Indicator 5.4, [The Lancet Countdown report on health and climate change: Health at the mercy of fossil fuels](#), 2022

guidelines to support the industry in its transition. Evidently, funding is not meeting projected needs: annual finance for transport projects must increase 1.5x⁵ by 2030 to ensure mobility solutions for all, while adaptation-related funding for transport infrastructure needs to increase by 60x⁶. Grid investment needs to double to US\$605⁷bn by 2030 to support adaptation and mitigation targets. Finally, technical capacity for adaptation and resilience is a major gap and an opportunity for adaptation action.

- ▶ **Adaptation Finance** from public, private and blended sources continues to be significantly insufficient and must increase exponentially to meet the US\$215-387bn needed annually for adaptation in developing countries.⁸ Existing finance must be used more impactfully to ensure development addresses current adaptation gaps, is made climate-resilient, and is gender-responsive, socially inclusive, and directed to communities with the most critical needs. Public financiers play a critical role, not only in increasing

allocation of climate finance for adaptation and resilience (A&R) (to ensure a balanced allocation of funding between mitigation and adaptation and exponential rise of adaptation financing), but also advancing International Financial Architecture reforms and providing the enabling environment for private capital to flow. Private financiers also play a role in integrating physical climate risk in financing decisions and leveraging industry-wide approaches to adaptation. Notably, financial innovation is underway to catalyze finance from all sources and mobilize flows towards the geographies and sectors most in need. There have also been developments in practical frameworks, tools, and methodologies that are enabling a more standardized and comprehensive approach to A&R lending and investment.

- ▶ To build resilience for vulnerable people globally, **Adaptation Planning** is needed at the national, state/region, and city levels, as well as for the private sector where the flow of critical goods and services could be disrupted by climate shocks and

5 G20, [Global Infrastructure Outlook](#), Accessed 17 November 2023

6 World Bank, *Lifelines: the resilient infrastructure opportunity*, 2019 (see infrastructure systems section for further elaboration)

7 IRENA, *World Energy Transitions Outlook 2023: 1.5°C Pathway*, 2023

8 UNEP, [Adaptation Gap Report](#), 2023

stresses. To date, 573 cities and 36 regions have A&R plans.⁹ To close the gap in achieving the SAA target, constraints in technical capacity, finance, multi-level governance, data, and ensuring a systems-approach to planning need to be addressed, especially for cities and regions in the Global South facing resource constraints. Organizations like the Race to Resilience, Regions4, and ICLEI have provided cities and regions with support in integrating resilience across all aspects of urban planning. For example, starting in 2021, RegionsAdapt partnered with the Race to Resilience campaign to share critical insights, data, and commitments from subnational governments. This includes assessing climate risks faced by RegionsAdapt members, tracking their progress in adaptation planning and actions, and facilitating peer-to-peer learning for replicable adaptation strategies

SAA implementation will be carried forward annually by COP Presidencies and UN High-level Climate Champions with the leadership of the Task Force co-leads and all members joining the agenda, and with strategic guidance from the SAA Steering Committee.

Given the opportunity to accelerate implementation, the SAA will continue to

convene and foster collaboration among COP initiatives, businesses, financiers, cities, regions, civil society groups and governments and will actively seek to unlock opportunities that benefit people and the planet. Alongside the diversity of actors engaged on adaptation and resilience, **SAA has observed potential for a greater role of businesses, financiers, and local changemakers (which include cities, regions, civil society organizations, researchers, local communities and others) as key catalysts for transformational change in their communities and economies. They can deliver tangible progress on SAA outcomes and progress tracking, with equity, climate justice and inclusivity at the core.**

In 2024, SAA leadership and task forces will prioritize progress on all fronts from technical capacity and policy, to financing and implementation of solutions that include but are not limited to: innovative financing models, products and instruments; strengthened business case for adaptation; adaptation and resilience actions that safeguard assets, supply chains, and operations in a manner that mutually benefits local communities and natural ecosystems; disclosure and integration of climate risk in investment decision making and provision of financing; and developing, sharing, and scaling adaptation and resilience solutions, including technology, data, and analytics.

⁹ CDP, Cities, States, and Regions Questionnaire, 2022

Based on this year's first progress assessment, key Action Recommendations for different stakeholders are highlighted on page 14 of this report. They should be implemented through various forms of partnerships, collaboration and support between all actors.

How to join the SAA?

Interested in joining the SAA Task Forces and contributing to accelerating adaptation implementation?

Send us a note with your contact information [here](#) or scan the QR code



TABLE NO. 1 SAA ENHANCED 2030 ADAPTATION OUTCOMES

SAA Systems	2030 Adaptation Outcomes
<p style="text-align: center;">Food and agriculture systems</p>	<p>50% of food globally is produced through sustainable agriculture practices (incl. agro-ecological & regenerative approaches), without expansion of the agricultural frontier into pristine ecosystems, to deliver for people, nature, and climate</p>
	<p>Halve global food waste and food loss per capita (relative to 2019)</p>
	<p>Adoption of healthy, locally-appropriate, and sustainable diets in line with global goals, respecting socio-cultural sensitivities and geographic variations. This includes increasing the global consumption per capita of fruits, vegetables, seeds, nuts, and legumes by 1.5x, while also significantly increasing the share of alternative plant-based proteins in the meat and seafood markets.</p>
	<p>Protect, manage, and restore biodiversity, including by halting and reversing forest loss and land degradation and conversion of natural ecosystems for agriculture, safeguard soil health, and ensure water quality and availability, to provide healthy and functioning natural ecosystems and resources for food and agriculture and other systems</p>
	<p>Scale and re-orient climate finance flows from public and private sources towards resilient, inclusive, and sustainable food systems, increasing direct access for small-scale family farmers, women, youth, and Indigenous Peoples, aligned with climate risk-informed food policies and plans</p>
	<p>By 2030, end hunger and malnutrition in all its forms, in particular for the poorest and most vulnerable, including infants, through access to safe, nutritious and sufficient food all year round</p>
	<p>Advance a just and inclusive food systems transition, ensuring equitable and resilient livelihoods and meaningfully engaging all relevant stakeholders, and especially smallholders, women, youth and Indigenous Peoples, in relevant plans, processes and finances that affect them, with special emphasis on supporting their efforts to secure land and resource tenure rights, as well as boosting local markets for local consumption</p>

SAA Systems	2030 Adaptation Outcomes
<p style="text-align: center;">Coastal and ocean systems</p>	<p>Secure the future of 15 million hectares of mangroves globally by mobilizing US\$4 billion to halt mangrove loss, restore half of recent losses, double protection of mangroves globally to support the resilience of 15 million people and over US\$65 billion worth of property annually</p>
	<p>Secure the future, halt loss, protect and restore 125,000 sqm of shallow-water tropical coral reefs with investments of US\$12 billion to support the resilience of more than half a billion people globally</p>
	<p>Coastal cities are protected from ocean-based hazards by green, gray and hybrid solutions building resilience of at least 900 million people globally</p>
	<p>Halt loss of, protect and restore seagrass ecosystems to mitigate climate change and support people and biodiversity globally</p>
	<p>Halt loss, protect and restore , marshes, and kelp forests to support people in temperate communities</p>
<p style="text-align: center;">Water and natural systems</p>	<p>Restore 300,000 kms of rivers and 350 million hectares of wetlands by 2030 and protect healthy rivers and wetlands</p>
	<p>By 2028, all communities living in the overlap of high climate hazard exposure and insufficient water, sanitation, and hygiene access have been targeted with climate resilient water, sanitation, and hygiene services</p>
	<p>Countries develop... agriculture” with the following text: “Coherent national policy frameworks and climate strategies are enhanced to integrate water planning that enables transformative climate outcomes in agriculture</p>
	<p>By 2030, 1% of annual water sector spending is invested in NbS via watershed in-vestment programs - like water funds – resulting in improved management and/or protection of rivers, lakes and wetlands, driving water security benefits and improving critical habitat for biodiversity</p>
	<p>Water systems are smart, efficient and robust with a reduction in water loss through leakage, and wastewater systems maximize recycling and reuse alongside natural wetland filtration with zero environmental spillage</p>

SAA Systems	2030 Adaptation Outcomes
<p style="text-align: center;">Water and natural systems</p>	<p>Protection of 30% of the world's lands and inland waters, 2 billion hectares sustainable management and 350 million hectares restoration of land securing legal Indigenous and local communities with use of nature-based solutions to deliver the integrity of natural ecosystems for climate, water, food, health and other biodiversity life supporting roles</p>
	<p>By 2025, financial institutions contribute to halting land conversion by eliminating commodity-driven deforestation from portfolios and all actors tap into nature-based solutions investment opportunities of US\$484 billion/year needed by 2030</p>
<p style="text-align: center;">Health systems</p>	<p>Health systems and facilities are resilient to climate hazards and vulnerable populations have access to safe and quality health services</p>
	<p>Multi-sectoral heat action plans and health-sector action plans protect high risk populations (older persons, workers, impoverished, marginalized), for 50% of the populations exposed to extreme heat</p>
	<p>All countries have climate-informed health surveillance and early warning systems in place for priority climate-sensitive diseases, including vector-borne, water-related, airborne</p>
	<p>Increase financing flows to build climate-resilient health systems</p>
<p style="text-align: center;">Human Settlements Systems</p>	<p>1 billion people have better design, construction and access to finance to live in decent, safe homes</p>
	<p>Multi-hazard early warning systems have universal coverage</p>
	<p>US\$1 trillion invested in NbS for communities in urban areas</p>
	<p>Improve social infrastructure and related services to ensure equitable and inclusive access to essential needs and resilience capacities</p>
	<p>Increased municipal solid waste recovery and management in controlled facilities to reduce open burning by 60% while including the informal waste sector</p>
	<p>[Urban water resilience under development]</p>

SAA Systems	2030 Adaptation Outcomes
Infrastructure systems	<p>Transmission and distribution grids' resilience to extreme events is increased and flexibility is enhanced to accommodate varying daily, seasonal, and inter-annual patterns of demand. Global grid investment nearly doubles by 2030 to over US\$600 billion per year, including 359 GW of battery storage capacity.</p>
	<p>Regional power pool integration is scaled up to mitigate the potential negative impacts on supply and demand of hydropower due to increased precipitation variability, allowing for a growing complementarity of renewables sources</p>
	<p>Adaptation of energy generation, transmission and distribution infrastructure is mainstreamed into national energy planning and scenarios at national and sub-national levels</p>
	<p>Affordable, reliable, sustainable, and modern energy access to electricity for 675 million unconnected people and higher quality access for 1 billion underserved people through climate resilient energy systems</p>
	<p>2.4 billion people with access to clean cooking through at least US\$8 billion/year in innovative finance for clean cooking action worldwide</p>
	<p>Support grid infrastructure resilience by reducing electricity consumption for cooling by approximately 30% (1900 TWh per year) by 2030</p>
	<p>2.2 billion people access low-cost, clean vehicles and mobility solutions through the expansion of affordable public and private transport services</p>
	<p>Transport infrastructure is resilient to climate hazards through adoption of new technology, design and materials</p>
Planning and policy	<p>10,000 cities and 100 regional governments have evidence-based, actionable adaptation & resilience plans</p>
	<p>2,000 companies have evidence-based, actionable adaptation & resilience plans</p>
	<p>Universal access to data and analytics required to integrate climate risks and impacts into decision making and action across all levels</p>
	<p>100% operationalization of NDCs with Adaptation components, National Adaptation Plans, and Locally-Led Principles, enabling adaptation in a country-driven localized and consultative manner</p>

SAA Systems	2030 Adaptation Outcomes
Finance	Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing adaptation and resilience so as to enable the mobilization of the US\$215 billion to US\$387 billion that will be needed annually across both public and private sources
	Public finance actors increase provision of climate finance and allocate 50% of climate funds to adaptation and resilience
	Global property and casualty insurance sector has an industry capabilities framework, actively supports project implementation, and institutionalizes a longer-term industry approach to climate adaptation
	Multilateral Development Banks and Development Partners support scaling-up private finance by providing dedicated resources to support credit enhancement and de-risking of adaptation investments

TABLE NO. 2 SAA POSITIVE SIGNALS OF PROGRESS

The table below highlights key positive (non-exhaustive) signals of change across the systems and outcomes, observed since the launch of the agenda at COP27. Please refer to the system chapters in this report for a holistic view of progress, including signals of progress, gaps, challenges and opportunities.

Multiple case studies are integrated throughout the systems chapters to provide concrete and impactful examples of adaptation progress by leading organizations. Case studies were selected in a way that balances geographical representation and types of partners. Additional case studies can be found in the Appendix section.

SAA Systems	Key Highlights
<p style="text-align: center;">Food & Agriculture</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Under the UN Food Systems Summit process, multiple coalitions (including the Climate Resilient Food Systems Alliance CRFS), the Resilient Local Food Supply Chain Alliance (RLFSC), and Fighting Food Crisis along the Humanitarian, Development and Peace Nexus Coalition (HDP Nexus Coalition) were launched related to addressing climate risks, impacts and capacities for resilient food systems, championed by 90+ actors ▶ Building on efforts at COP26 and COP27, the COP28 Presidency has identified food systems for the first time as a Presidential priority area, with plans to launch a leaders statement and a non-state actor Call for Action on food systems ▶ Increased global awareness and urgency to transition and transform agri-food systems as a main climate solution, in terms of mitigation, adaptation and loss and damage ▶ To date, agriculture and food sectors are prominently featured in countries' climate plans (92% of NDCs and 100% of NAPs submitted to UNFCCC)
	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Smallholder farmers worldwide are spending \$368bn every year of their own income on measures to adapt to climate change, including through conserving and restoring biodiversity ▶ Early (small-scale) initiatives driving progress on adoption of sustainable agriculture practices (e.g., Climakers, Initiative 20x20) Slight decrease in global food loss levels between 2019 - 2022 (from 13.8% to 13%) ▶ Promising and broad range of initiatives working on advancing SAA outcomes, such as FAST, I-CAN, and Champions 12.3

SAA Systems	Key Highlights
<p style="text-align: center;">Food & Agriculture</p>	<p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by the Food & Agriculture Organization and the International Union for the Conservation of Nature, drove progress assessment for this system, with active participation of the Just Rural Transition, Chatham House, World Wildlife Fund, Stronger Foundations for Nutrition, and the World Resources Institute ▶ Other partnering actors paving the way for resilient food & agriculture systems and included in the SAA progress assessment efforts are: Scale for Resilience, BFA Global / CIFAR Alliance, the Agroecology Coalition, Regen10, the Transforming Urban-Rural Food Systems Consortium (made up of C40 Cities, CARE, EAT, GAIN, ICCCAD, the Club of Rome, and WWF), WRAP, Champions 12.3, the Global FoodBanking Network, I-CAN, Food and Agriculture for Sustainable Transformation Initiative (FAST) and more
<p style="text-align: center;">Coastal & Ocean</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Science-to-policy efforts have supported the translation of knowledge into action with multiple supporting mechanisms in place such as knowledge hubs and global frameworks (e.g., Nairobi Work Programme, Kunming-Montreal Global diversity framework) ▶ A clear case for investment in coastal adaptation has been made, and engagement from countries on coastal and marine NbS is increasing, as evidenced by the Bonn Climate Change Conference 2023 Ocean and Climate Change Dialogue ▶ Many initiatives are driving progress e.g.,: <ul style="list-style-type: none"> ◆ The Ocean Risk and Resilience Action Alliance (ORRAA) to catalyze at least US\$500m into coastal and marine natural capital by 2030. As of the start of 2023, US\$14m has been invested in 76 projects helping over 121,000 people be more resilient. ◆ Blue Carbon Buyers Alliance serves as the “buyers voice” in the growing blue carbon community of practice to help scale blue carbon markets to conserve and restore coastal ecosystems ◆ Multiple tools have been developed to record and track protected and conserved marine areas (e.g., The Mangrove Restoration Tracker Tool, The Allen Coral Atlas, The Action Platform for Source-to-Sea Management)

SAA Systems	Key Highlights
<p style="text-align: center;">Coastal & Ocean</p>	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Some notable progress in mangrove protection and restoration, resulting in slowed mangrove loss in recent decades, but not at the scale and pace required. The launch of the Mangrove Breakthrough will help catalyze US\$4bn by 2030 to accelerate global action. ▶ The window for protecting coral reefs ecosystems is closing rapidly but the recent launch of the Coral Reef Breakthrough in 2023 will scale action through unlocking US\$12bn by 2030 ▶ The future launch of the Seagrass Breakthrough in 2024 will set the ambition for seagrass protection and restoration by 2030 <p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by the Ocean & Climate Platform, drove progress assessment for this system, with active participation of the Ocean Risk and Resilience Alliance (ORRAA), Stimson Center, UN Environment Program (UNEP), Global Mangrove Alliance (GMA) and the Global Funds for Coral Reefs (GFCR) ▶ Other partnering actors are paving the way for resilient coastal and ocean systems including Coastal 500, Sea'ties and CitiesWithNature, who are building resilience with local governments and communities in urban environments
<p style="text-align: center;">Water & Natural</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Both systems are increasingly recognized on the climate stage as foundational systems and key contributors to climate resilience, including across agri-food, human settlements, ocean and coastal, and infrastructure systems. This is exemplified by the UN Water Conference, resulting in the Water Action Agenda, where non-party actors submitted over 800 commitments, and the central place of Nature at COP28. ▶ Many countries have included nature as part of their NDCs (92%) and NAPs (83% mentioning ecosystem vulnerability and 70% mentioning NbS) ▶ Progress has been made in terms of standards and guidance, such as the recognition and universal definition of the term Nature-based Solution (adopted at UNEA 2022) and more advanced standards for private entities on how to set targets and disclose risks related to nature ▶ NbS is now recognized as one of the main critical climate solutions for both climate change mitigation and adaptation across systems

SAA Systems	Key Highlights
<p style="text-align: center;">Water & Natural</p>	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Notable progress on protection of lands and inland waters (to date, protected area stands at 17%) ▶ 210m hectares out of the 350m hectares target set out in the Bonn Challenge have been pledged for restoration across 60 countries ▶ Broad range of projects are working on advancing the water and nature outcomes, such as the Freshwater Challenge, the UN Decade on Ecosystem Restoration, and AWARe
	<p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by Stockholm International Water Institute for Water and International Union for Conservation of Nature for Nature, drove progress assessment for this system, with active participation of the UN Environment Programme, Sanitation and Water for All, World Wildlife Fund, and The Nature Conservancy. ▶ Other partnering actors are paving the way for resilient Water and Nature systems including the Global Nature Based-Solutions Coalition Water Resilience Coalition, Initiative 20x20 and GSK, among others
<p style="text-align: center;">Health</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Recognition of the Climate-Health nexus is growing with this being the first year with a dedicated Health thematic day at COP28 and adoption of a Health impact system within the SAA ▶ Increase in health representation in NDCs (86% of 126 UN members vs. 82% in the first NDCs)¹ ▶ Key initiatives such as the Alliance for Transformative Action on Climate and Health (ATACH) launched to support implementation of COP26 health commitments, and help countries drive forward the agenda on Climate Resilient Low Carbon Sustainable Health Systems
	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Development of four SAA Health outcomes around finance, surveillance systems, heat resilience and health infrastructure and facilities, progress assessment will start in 2024

¹ Indicator 5.4, [The Lancet Countdown report on health and climate change: Health at the mercy of fossil fuels](#), 2022

SAA Systems	Key Highlights
<p style="text-align: center;">Health</p>	<p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by the World Health Organization (WHO) and the International Federation of Red Cross and Red Crescent Societies (IFRC) drove progress assessment for this system, while more partners will be involved in supporting the implementation of the SAA Health outcomes ▶ Other partnering actors are paving the way for resilient health systems including Extreme Heat Resilience Alliance (EHRA) and the United Nations Social Development Network (UNSDN), among others
<p style="text-align: center;">Human Settlements</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Subnational advancements have been achieved for planning & policy, with numerous cities adopting and implementing comprehensive, science-driven climate adaptation and resilience plans or strategies ▶ At COP27, cities and governments were recognized as key in achieving global climate action goals, highlighting the importance of multi-level governance for managing multiple climate risks and impacts.
	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Based on the SDG 11's progress, 2.8 billion people experience some form of housing inadequacy, of those 1.1 billion live in slums or informal settlements. Multiple initiatives are driving progress for climate-proof, decent and safe housing such as Roof Over Our Heads (ROOH), Extreme Heat Resilience Alliance (EHRA), Decent Life Initiative for a Climate Resilient Africa but major shifts in urban policy and investments are still required to provide 1 billion people with safe homes by 2030. ▶ Pivotal Early Warnings For All Initiative (EW4All) was launched at COP27 to serve as an overarching framework for various early warning initiatives across sectors and systems with the aim to reach universal coverage by 2027. The rollout phase started with an initial group of 30 at-risk countries. ▶ Governments have showed increased willingness to allocate funds for the implementation of NbS in cities (e.g., China invested US\$12bn flood protection through NBS) but investment needs must be substantially scaled up (UNEP finance gap of US\$230bn in 2025).¹ ▶ In 2024, SAA and COP28 Presidency will launch a new working group to develop urban water resilience outcomes.

¹ UNEP, [State of Finance for Nature in Cities: Time to assess, Summary for local policymakers](#), 2023

SAA Systems	Key Highlights
<p style="text-align: center;">Human Settlements</p>	<p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by ICLEI and UN Habitat drove progress assessment for this system, with active participation of Habitat for Humanity International, Extreme Heat Resilience Alliance (EHRA), Roof Over our Heads (ROOH), UN Environmental Program (UNEP) and the French Solid Waste Partnership ▶ Key initiatives, providing support and mobilizing climate finance for urban areas, include: ICLEI's Transformative Actions Program (TAP), RISE-UP: Resilient Settlements for the Urban Poor, Cities Alliance, The City Climate Finance Gap Fund, Alliance of Sub-national Development Banks, ICLEI's initiative: Amazon for Climate, Green Finances for Local Governments, The African Cities Water Adaptation (ACWA) Platform. ▶ Other actors paving the way for resilient human settlements systems include Build Change, Resilience First, Cities Race to Resilience, and Daraja, among others
<p style="text-align: center;">Infrastructure</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Climate-proofing of infrastructure across energy, transport and industry sectors but also across human settlement, health, agrifood, ocean coastal systems, is increasingly recognized as an essential solution for adaptation and resilience. ▶ The Maritime Breakthroughs, launched at COP27, provide a consolidated action agenda to future proof the maritime shipping sector. ▶ The Catalytic Capital Fund, closed by The Rockefeller Foundation and the Private Infrastructure Development Group (PIDG) as part of the Urban Resilience Fund initiative (TURF), is designed to support African cities in building commercially viable infrastructure projects for climate resilience, and mobilizing up to €10bn in private investment for these projects. <p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ On energy, strong progress on electricity access (halving of people without access to electricity over 2010-2021) and funding for clean cooking (record high of US\$200m in funding in 2022), for both mitigation and adaptation. ▶ On transport, a range of promising initiatives, including the Low Carbon Transport for Urban Sustainability initiative.

SAA Systems	Key Highlights
<p style="text-align: center;">Infrastructure</p>	<p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by IRENA for Energy and SLOCAT/OECD for transport, drove progress assessment for this system, with active participation of International Coalition for Sustainable Infrastructure and UN Environment Programme, and other actors paving the way for resilient Infrastructure systems including Resilience First, among others.
<p style="text-align: center;">Planning & Policy</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ 2023 was a landmark year for global policy frameworks such as the Global Goal on Adaptation, First Global Stocktake, and midpoint review of the Sendai Framework - with advancements on all three fronts expected to culminate at COP28 ▶ Countries are increasingly submitting adaptation components in their NDCs and integrating adaptation instruments in their policies, e.g., 80% of parties reported on adaptation in their NDCs¹ and 85% of countries have some form of adaptation policy instrument including policies, laws, strategies, or plans² ▶ The private sector has evolved positively, with standards boards and standards setters clarifying methods, tools, and approaches to disclose climate risks and impacts and A&R strategies e.g., those created by the Taskforce on Nature-Related Financial Disclosures (TNFD) <hr/> <p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ To date, 573 cities and 36 regions have A&R plans, with 122 cities in the CDP Cities A list in 2022 compared to 95 in 2021; for the first time, the CDP A list included several countries in the Global South such as Peru, Ecuador, Cameroon, Turkey, Jordan, and India³ ▶ 25% of businesses that disclose to CDP are recognizing and disclosing their financial exposure to physical climate risks, but not all of them disclose the adaptation and resilience actions they are implementing to manage these risks. Advancements in private sector approaches to adaptation, including the Climate-Resilient Pathways Framework (led by Resilience First, Resilience Rising, and C2ES)

1 UNFCCC, [NDC Synthesis Report](#), 2022

2 UNEP, [Adaptation Gap Report](#), 2023

3 CDP, Cities, States, and Regions Questionnaire, 2022

SAA Systems	Key Highlights
Planning & Policy	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Cross-sector alliances of academia, funders, researchers, communities, and companies are in motion to expand adaptation research, and AI, data, and analytics solutions for adaptation (e.g., Adaptation Research Alliance, AI for the Planet Alliance), and principles to gather and make data available have been established to guide a responsible use of data (e.g. FAIR, CARE, and those identified at the 2023 Resilience Evidence Forum) ▶ Data and analytics on climate risks, vulnerabilities, capacities, impacts and L&D are being advanced with GRII as an example. ▶ Eight Locally Led Principles for Adaptation underscore the importance of participation and empowerment of vulnerable groups who bear the brunt of climate impacts, with the Global Hub for Locally-Led Adaptation under expansion to empower local governments and communities through the provision of additional resources and capacity ▶ So far, some efforts are guided by inclusivity, equity and climate justice, which need to be widely embedded in delivering all A&R <p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ Global Resilience Partnership, CDP, Regions4, WEF, Global Center on Adaptation, and the Cities and Regions Race to Resilience, who are providing support for sub-national governments to integrate A&R in all aspects of planning, access finance, and report on progress across sectors and systems.
Finance	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Global adaptation finance grew 37% to US\$63bn in 2021/22 versus 2019/20¹. However, this still falls short of increasing adaptation needs and costs amounting to US\$215-387bn annually in developing countries alone.² ▶ The volume of public finance for adaptation has increased, but this only represents 10% of total public climate finance with majority flowing to mitigation.³ This is not in line with the Paris Agreement’s call for a balanced allocation between mitigation and adaptation. In particular, international public climate finance directed to developing countries declined 15% from 2020 to 2021⁴, placing the world further away from meeting the COP26 call for doubling adaptation finance from developed to developing countries, to around US\$40bn annually by 2025

1 CPI, [Global Landscape of Climate Finance](#), 2023
2 UNEP, [Adaptation Gap Report](#), 2023
3 CPI, [Global Landscape of Climate Finance](#), 2023
4 UNEP, [Adaptation Gap Report](#), 2023

SAA Systems	Key Highlights
<p style="text-align: center;">Finance</p>	<p>System-level signals of progress:</p> <ul style="list-style-type: none"> ▶ While flows have yet to meet the scale and pace needed for the world to adapt, there are emerging signals of progress of growing awareness from public and private stakeholders on the opportunities to invest in adaptation and resilience: ▶ Evolutions in the International Finance Architecture to structurally lower barriers to financing adaptation and resilience, strengthen risk management and guarantees, and unlock financing for debt-constrained countries ▶ Innovations in financing instruments to catalyze finance from all sources and direct finance towards local stakeholders driving action on-the-ground (e.g., CRAFT Facility, Landscape Resilience Fund) ▶ Advancements in programs to facilitate access to finance for developing countries (e.g., Africa Adaptation Acceleration Program)
	<p>Outcome-level signals of progress:</p> <ul style="list-style-type: none"> ▶ Developments in tools and methodologies for supporting the enabling environment needed to scale up private finance (e.g., PCRAM, Resilience Bonds Taxonomy). Regardless, the private sector only contributes 2% of tracked adaptation finance.¹ ▶ Progress across the international community on the Bridgetown initiative aiming to support vulnerable developing countries grappling with debt crises and enable them to invest in climate adaptation, resilience, and sustainable development ▶ Advancements in standardizing capability frameworks in the insurance industry (e.g., ICMIF and UNDRR) ▶ New SAA outcome on blended finance, recognizing the important role multilateral development banks and development partners play in catalyzing private finance

¹ CPI, [Global Landscape of Climate Finance](#), 2023

SAA Systems	Key Highlights
<p style="text-align: center;">Finance</p>	<p>Radical collaboration with key actors paving the way:</p> <ul style="list-style-type: none"> ▶ SAA Task Force, co-led by the Institutional Investors Group on Climate Change, CDP, and the UN Economic Commission for Africa, drove progress assessment for this system, with active participation of the Atlantic Council Foundation and Climate Policy Initiative. ▶ Other partnering actors paving the way include Race to Resilience partners: Scale for Resilience, Insurance Development Forum, CIFAR Alliance, and InsuResilience. Arsht-Rock and Atlantic Council Foundation are also leading the Call to Action from various investors and international organizations, urging policymakers to create the conditions to mobilize private finance for adaptation and resilience

SAA SUMMARY ACTION RECOMMENDATIONS

The SAA has been established as an agenda implementation platform that convenes a broad range of party and non-party stakeholders accelerating the delivery of adaptation solutions and contributing to tracking of progress at outcome and system level. The agenda contributes to the inclusion of all types of stakeholders across geographies, sectors and levels of government. It supports efforts that enhance transparency and accountability and reflects on opportunities for governments and people across systems, especially on the frontlines of the climate crisis. Based on this year's first progress assessment, key recommendations are highlighted below for each type of stakeholder to be implemented through various forms of partnerships, collaboration and support between all actors with equity, climate justice and inclusivity at core:

- ▶ Establish clear and prioritized global objectives through the Global Goal on Adaptation, ensuring a globally coordinated approach and narrative that helps drive adaptation and resilience at all levels of governance and transboundary
- ▶ Ensure public actors increase provision of climate finance that is accessible at all levels, and allocate 50% of climate funds to adaptation and resilience

Supranational organizations

- ▶ Establish guidelines that enable “fit for purpose” National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs), making them more integrated to include systems through cross-sectoral approaches, inclusive, multi-level, and responsive to evolving climate challenges and associated needs



National and sub-national governments

- ▶ Step up climate adaptation policy and planning, including enhancing National Adaptation Plans, Nationally Determined Contributions, Technology Needs Assessments, Transformative Action Programs, and sectoral plans, among others, mainstreaming adaptation and resilience across all actors and government levels. Ensuring standardized physical climate risk assessments of all public, private, and MDB/ DFI financed projects in order to build systemic resilience and help mainstream and standardize across the private sector
- ▶ Strengthen climate risk assessments and translate impacts projected risks into an actionable investment pipeline of A&R projects
- ▶ Build internal technical capacity needed to ensure data collection and management and the analytical power required to downscale climate data to local contexts and enable robust risk and impact assessments
- ▶ Develop policies and regulations, enabling environment needed to unlock action and ensure finance and capacity building flows down to the sectors leading implementation
- ▶ Ensure climate risk and resilience is integrated in infrastructure development and mainstreamed in broader development plans, strategies, and policies
- ▶ Identify and communicate adaptation priorities
- ▶ Clarify the role of business action into National Adaptation Plans
- ▶ Explore innovative financial incentives and structures to de-risk or scale business action, and clearly communicate what type of financing or non-financial incentives are available.

Financiers

- ▶ Provide grant and concessional finance to build the policy frameworks and technical capacity required to structure projects and develop investable pipelines that attract various forms of capital
- ▶ Design financial instruments to incorporate climate risk considerations, ensuring that all financing decisions account for climate resilience. Establish a taxonomy for adaptation and resilience that enables all actors to use a shared language, unlock finance in capital markets and ensure that finance is flowing towards credible resilience-building projects, and methodically track and report on adaptation and resilience financing flows
- ▶ Align standards and metrics for integrating climate risks in financing decisions and tracking project outcomes, ultimately aiming to ensure A&R is factored into capital allocation and to make visible the business case for provision of finance and investing in A&R, especially nature-based solutions
- ▶ Public financiers provide catalytic capital and other de-risking mechanisms to mobilize private finance, alongside increasing

provision of finance for A&R and ensuring parity

- ▶ Private financiers integrate physical climate risks into lending and investment decision-making, including by ensuring that investments flow towards resilience-enhancing activities
- ▶ Insurers build capabilities to factor in climate risks, innovate offerings that increase coverage to vulnerable populations, risk-engineer both public and private sectors, and ensure that investments in capital projects factor in resilience

Private sector companies

- ▶ Embed adaptation as a key consideration in climate and business strategy by building the business case across three key drivers of value - enhancing resilience, capitalizing on opportunities, shaping collaborative outcomes.
- ▶ Implement adaptation and resilience actions that safeguard assets, supply chains, and operations in a manner that mutually benefits local communities and ecosystems

- ▶ Disclose climate risks and provide financing and capabilities for implementation Develop and scale adaptation and resilience solutions, including technology, data, and analytics
- ▶ Collaborate with governments and other non-party actors to build capacity, share lessons and accelerate adoption of technological innovation
- ▶ Prioritize near term actions, investments and collaborations to deliver the SAA by 2030
- ▶ Support with continued capacity building, sharing of lessons and learning
- ▶ Facilitate public-private sector dialogue and responsible engagement to enable the design of fit for purpose policy signals and incentives

Civil Society, Local Communities and Local Changemakers

- ▶ Continue to catalyze adaptation action by bringing together multiple stakeholders across sectors to help solve common challenges, share scalable solutions and resources and collaboratively push the adaptation agenda forward
- ▶ Maximizing the connecting tissue across local, national and global levels and across stakeholders with changemaker’s innovation and capacity skills that realize social impact.

SAA

**SHARM
ADAPTATION
AGENDA**



CHAPTER 1

SHARM EL-SHEIKH ADAPTATION AGENDA

INTRODUCTION

Climate change is disrupting lives, livelihoods, ecosystems and economies globally. Mitigation is crucial as our first line of defense, and we must not falter on this front. However global efforts to reduce GHG emissions have been slow and are not sufficient to prevent worsening climate impacts and risks disproportionately affecting the most vulnerable populations worldwide. **We must adapt and build resilience at an unprecedented scale and pace by accelerating the implementation of proven adaptation solutions that benefit locally and can be scaled globally.**

Adaptation requires a diverse set of solutions across nature, economy and human systems. These systems are highly interconnected and actions on all fronts are needed to achieve resilience. For example, coastal and ocean resilience play a pivotal role in protecting coastal human settlements. Human settlements, in turn, depend on resilient infrastructure for climate risk protection and services. Health resilience depends on a resilient food and agriculture system to guard against malnourishment. And water and nature form the bedrock upon which all systems lie. **Deployment of multiple adaptation solutions that contribute to system transformations is needed to enhance resilience and maximize the interconnectivities across systems.**

To achieve this we need to seize the full potential of adaptation actions that are beyond reactive responses, but that accelerate the transformative effects of adaptation across all human, natural and economic systems to pursue a resilient, net zero and nature positive development.

To provide clarity on the solutions needed and drive action on the ground, the COP27 Presidency, the UN Climate High-Level Champions and the Marrakech Partnership launched the Sharm el-Sheikh Adaptation Agenda (SAA) in 2022 as the global solutions agenda to rally action from parties and non-party stakeholders by 2030. The SAA put forward a set of global solutions with near-term actionable adaptation outcomes targets across priority systems needed to increase resilience of 4 billion vulnerable people by 2030. **Not only does the SAA bring awareness to the criticality of adaptation and resilience and where urgent action is needed, but it provides a common narrative on what it takes to achieve a resilient world, deconstructing the complexity of adaptation and resilience into a clear set of concrete and actionable solutions.** It helps guide the ecosystem of global actors by showcasing the journey advanced toward joint adaptation outcomes and by providing clear entry points to take action.



The SAA also provides an opportunity to cascade adaptation and resilience priorities from countries down to the ecosystem of non-party actors implementing adaptation and resilience and vice versa, provides an opportunity to bring locally-led adaptation solutions to be uptaken at local, subnational and national level. Furthermore, it creates a link and continuity of initiatives between successive UNFCCC COP Presidencies.

The Sharm el-Sheikh Adaptation Agenda First Implementation Report summarizes the SAA implementation process and is the first edition in a series of annual reports that takes stock of adaptation progress across each of the systems and outcomes of the Sharm-El-Sheikh Adaptation Agenda, up to 2030. Given this is the first iteration of this progress assessment process, the aim for this year was to:

- 1. Consolidate the set of key solutions across systems, refine the SAA 2030 adaptation outcome targets through a wide consultation and co-creation process** that ensures locally-led adaptation at the center, and where possible, identify the baseline data backed by science of the 2023 state of progress across each of the outcomes, highlighting key gaps, challenges, and opportunities.
- 2. Convene multiple stakeholders and catalyze action to accelerate implementation** of the adaptation solutions
- 3. Initiate the development of an assessment approach to track the signals of progress** of adaptation implementation and system transformation.

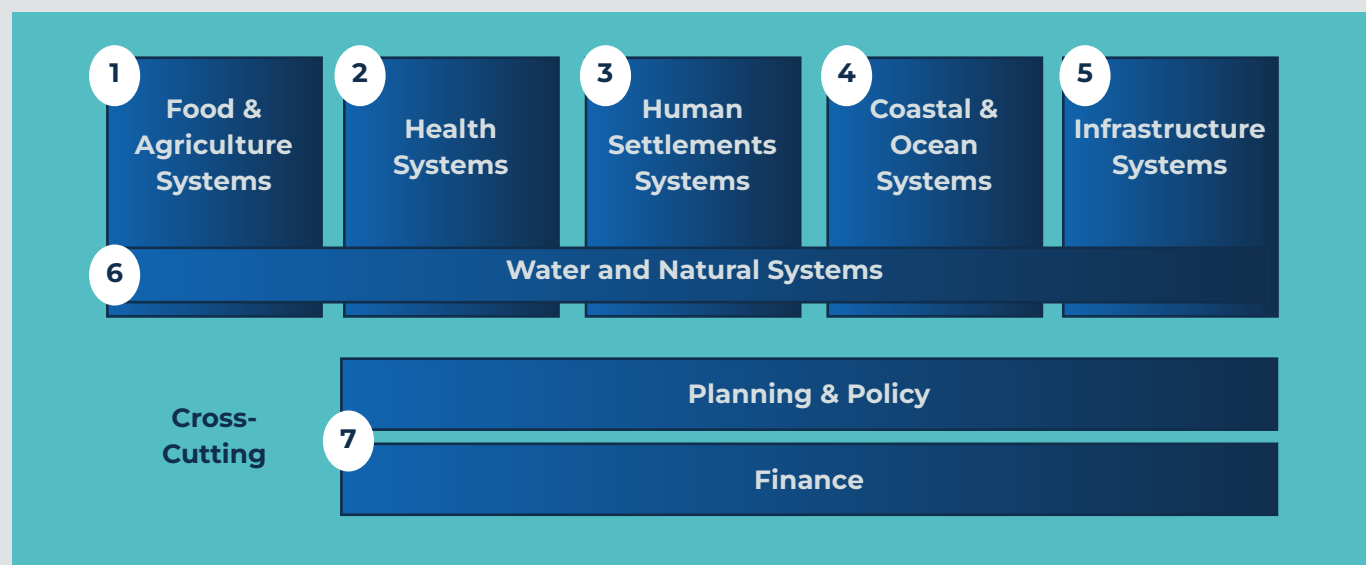
1.2 SAA ORIGINS AND EVOLUTION

The content in this report was sourced in a consultative manner through each of the system task forces, building on the data and expertise of a broad range of stakeholders. The SAA launched at COP27 in 2022 consisted originally of 30 global adaptation outcome 2030 targets across five priority systems: food and agriculture, water and nature, coastal and ocean, human settlements, and infrastructure, and two cross-cutting enablers: planning and finance. As the SAA continues to evolve and implementation is accelerated, enhancements have been included

to reflect the critical opportunities to accelerate resilient development.

Following the SAA operationalisation in 2023, its systems were updated to include Health with support of the COP28 Presidency and leading actors on the climate and health agenda resulting; also, water and natural systems were made cross-cutting, given their importance for the resilience of each of the systems. Additionally, the set of outcomes were enhanced to align with global adaptation-related agendas and advancements.

Exhibit 1: SAA Priority Systems



1.3 TRACKING SIGNALS OF CHANGE: PROGRESS ASSESSMENT APPROACH

Each year ahead of COP, SAA Task Forces will take stock of global progress toward the SAA.

The Sharm Adaptation Agenda progress assessment approach is based on the idea that global adaptation and resilience transformation requires collective action at all levels to build the resilience of vulnerable people globally. Enhancing the livelihood of 4 billion people requires shifting from incremental and fragmented progress to transformative actions across systems. This requires radical mobilization of all actors around the Sharm Adaptation Agenda's global targets to accelerate adaptation action.

Progress is assessed not only at the outcome level but also at the system and macro level including signals of change across key enablers.

At the outcome level, a set of simple and measurable quantitative metrics is defined for most SAA outcomes. For those without targets, proxy metrics and qualitative assessment of progress is performed. At the system (e.g., Food and Agriculture) and macro (i.e., global cross-system) level, signals of change that are not specific to an outcome are evaluated. Signals of change are assessed across 5 critical enablers:

- ▶ **Planning & Policy:** Development and enhancement of strategies, guidelines, regulations and frameworks to guide decision-making and investment decisions, and create a structured approach and effective coordination to climate adaptation action.
- ▶ **Finance:** Enhancing provision and access to climate finance from multiple sources and instruments to bridge the adaptation finance gap required to support the implementation of adaptation measures and advance research and innovation.
- ▶ **Technology, Innovation & Data:** Development of innovative tools, systems and approaches to address data gaps (e.g., climate data, socio-economic data), as critical input to understand current and future exposure to climate risks and assess potential physical, environmental and socio-economic impacts as well as technological advancements to ensure wider adoption of adaptation solutions.

- ▶ **Knowledge & Capacity:** Creation and dissemination of knowledge and capacity at all levels to understand the science of climate change, the current impacts and projections of climate risks and design and implement adaptation solutions including the recognition and valorization of traditional, local and Indigenous knowledge to design effective and inclusive adaptation solutions.
- ▶ **Partnerships & Inclusivity:** Set consultative processes and coordinations to integrate diverse perspectives, share knowledge and expertise, enable pooling of financial resources & technical capabilities and influence policy development for a large-scale action.

Annual progress assessment will be a key SAA activity and COP deliverable going forward, requiring engagement from a broad ecosystem of actors.



SAA

**SHARIM
ADAPTATION
AGENDA**

CHAPTER 2

SAA IMPLEMENTATION PROGRESS IN PRIORITY SYSTEMS

2.1 FOOD AND AGRICULTURAL SYSTEMS

SAA Task Force, co-led by the Food & Agriculture Organization (FAO) and the International Union for the Conservation of Nature (IUCN), drove progress assessment for this system, with active participation of the Just Rural Transition, Chatham House, World Wildlife Fund (WWF), Stronger Foundations for Nutrition, and the World Resources



SYSTEM-LEVEL PROGRESS

Climate change is significantly impacting agrifood systems, exacerbating food insecurity and malnutrition, and negatively impacting the planet, health, social equity, and the economy. Agrifood systems provide livelihoods for 4 billion people¹ and are the socio-economic backbone of many countries and communities. Yet despite producing an excess of calories, 735 million people² are in a chronic state of hunger and 3 billion people cannot afford a healthy diet. Climate induced shocks or extreme weather events such as droughts, floods and storms, and stresses like changing rainfall patterns, are depleting crop yields, reducing pasture and livestock, and other food production. Other shocks, such as COVID-19 and conflicts, are also exposing the vulnerabilities of agrifood systems, as food shortages and rising costs are becoming more common.

Agrifood systems today are not fit to prevent, anticipate, absorb and adapt to these shocks and stresses. As well as being impacted by climate change, they are significantly contributing to the climate crisis. Food systems are responsible for a third of total greenhouse gas emissions³ and are the number one driver⁴ of ecosystem degradation and biodiversity loss.

1 FAO, [Estimating Global and Country-Level Employment in Agrifood Systems](#), 2023

2 FAO, [The State of Food Security and Nutrition in the World 2023](#), 2023

3 European Commission, [EDGAR - Emissions Database for Global Atmospheric Research - Food](#), 2023

4 The Food and Land Use Coalition, [Aligning regenerative agricultural practices with outcomes to deliver for people, nature, and climate planet](#), 2023

They are the largest user of freshwater⁵ and a major driver of increased risk of future pandemics due to large-scale land conversion disrupting forests and natural habitats⁶.

Today's extractive, high-input, polluting and industrial agrifood systems have taken their toll on natural ecosystems and resources, even though the systems themselves depend on the integrity and health of our natural world.

Transformed, agrifood systems can become one of the main climate solutions for both mitigation and adaptation. For example, more sustainable production, including regenerative and agroecological approaches, can increase yields and farmer incomes and food, as well as help to deliver on our climate and nature goals and build resilient livelihoods. By reducing food loss and waste and shifting consumption towards less resource-intensive foods, we can use less resources while feeding more people. An equitable transition on a global scale to low-meat and predominantly plant-based, minimally-processed diets that are locally-appropriate and context-specific is beneficial for both human and planetary health.⁷ **However, progress is slow and significant gaps still need to be bridged to build resilient, inclusive, and sustainable agrifood systems that deliver for people, nature, and climate.**

It is critical that smallholder farmers, on the frontlines of the climate crisis and bearing the brunt of impacts and losses, are given a central role in this transition. Smallholders have a critical role to play in ensuring food supply (80% of food in Africa and Asia is produced by smallholders⁸), to manage precious natural resources, and to act as change agents for adaptation and mitigation efforts. A recent global survey across 13 countries in Asia, Africa and Latin America suggests smallholder farmers are already spending US\$368bn of their own income every year on measures to adapt to climate change including through conserving or restoring biodiversity, according to the Forest and Farm Facility and IIED.⁹

5 OECD, [Managing water sustainably is key to the future of food and agriculture](#)

6 WWF, [COVID 19: URGENT CALL TO PROTECT PEOPLE AND NATURE](#), 2020

7 The Lancet, [Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems](#), 2019.

8 IFAD, [Smallholders can feed the world](#)

9 IIED, [The unsung giants of climate and nature investment](#), 2023

PLANNING & POLICY

Agri-food systems are featured in countries' climate plans. In 2021, 92% of all NDCs¹ (85) contained components related to climate impacts to the agri-food sector and 95% of all NDCs outlined priority actions related to adaptation for food and agriculture. Further, all NAPs (47)² currently submitted to the UNFCCC highlight food and agriculture as a priority sector. **Yet progress on implementation is slow, and critically, a systems approach involving all food stakeholders is lacking** - where attention is given to both encouraging better patterns of consumption and reduced waste, as well as more inclusive, resilient and sustainable production practices and related food value chains. Climate-related policies, strategies and plans must consider entire food systems, from production to consumption, across mitigation and adaptation, and across borders, because agri-food systems are highly interconnected locally and globally and reliant on trade. Agri-food systems' related policies and plans (e.g. national food systems pathways) must reinforce climate plans by being climate risk and impact informed.

Governments should leverage all relevant climate and agri-food policies to spur urgent action at scale. This includes addressing trade, regulatory, and finance barriers to create a level playing field for healthy and sustainable foods, changing food environments to make it easier for consumers to eat more healthily and sustainably (reducing nature and climate footprint while being also fair and just), and leveraging subsidy, tax, and institutional procurement to incentivize public and private investment into sustainable, resilient, inclusive and nature-friendly production. Most agri-food policies and public spending still promote unsustainable, harmful practices. UNEP, UNDP and FAO report that the majority (87%) of US \$540 billion of support³ to agricultural producers is either price distorting or harmful to nature or health. Policymakers also need to implement climate risk informed and nature-positive policies that incentivize private capital to fund sustainable production (e.g., impose deforestation-free supply chains regulation, introduce mandatory climate risk disclosures, mandate food labeling rules and certifications, encourage banks to develop products that promote adoption of climate-smart technology).

1 FAO, [Global Update Report: Agriculture, Forestry, and Fisheries in the Nationally Determined Contributions](#), 2021

2 NAP Global Network, [NAP Trends](#), Accessed 17 November 2023

3 UNEP, UNDP & FAO, [A Multi-Billion-Dollar Opportunity: Repurposing agricultural support to transform food systems](#), 2021

CASE STUDY (RTR PARTNER):

The production of Tequila, in particular growing the Agave plant, has significant impacts on deforestation and degradation of tropical forests. The Jalisco state government (Mexico), partner of **Regions4**, signed an agreement with the Tequila Regulatory Council to build a cooperation scheme that would reduce deforestation by 50% by 2024, and 100% by 2030, framed into state strategy



FINANCE

Climate-related funding for food and agriculture systems remains insufficient and is even decreasing as a share of total climate capital. CPI estimates that total climate funding for food and agriculture-related projects amounted to US\$28 billion (2020), with climate adaptation efforts only representing around a fourth (US\$7.3bn) of that.¹ Further, climate-related development funding for food and agriculture has been decreasing as a share of overall climate-related development finance allocations, from an average of 37% in the period 2000-2010 to around 20% in 2020.² A significant gap still exists between the current funding levels and the estimated needs, which, as estimated by UNEP, could amount to US\$380bn per year through 2030.³ It is however estimated that US\$670bn of public capital and US\$630bn of private capital flows annually to the food sector⁴, showcasing the availability of capital and the need to redirect and repurpose incentives. Agri-food subsidies need to start flowing in the right direction led by policies that must incentivize private funds to drive low carbon and climate risk informed economies.

However, a recent IIED survey suggests that “smallholder farm and forest producers (who manage 10 hectares or less of land) are investing on average 20-40% of their annual income (on average US\$838 per year) in adaptation to climate change.

1 CPI, [Landscape of Climate Finance for Agri-food Systems \(2023\)](#), 2023

2 FAO, [Climate-related Development Finance in the Agriculture and Land Use Sector between 2000 and 2020](#), 2022

3 CPI, [Landscape of Climate Finance for Agri-food Systems \(2023\)](#), 2023

4 CPI, [Landscape of Climate Finance for Agri-food Systems \(2023\)](#), 2023

With 439 million smallholder farmers globally, it is likely that they are collectively investing US\$368bn annually on climate change adaptation, dwarfing the US\$230m pledged for the Adaptation Fund at last year's COP27 climate negotiations".⁵

PARTNERSHIPS AND INCLUSIVITY

The urgent need to change and transform agri-food systems is gaining momentum on the global climate stage, with partnerships and collaborations growing and evolving. Building on efforts at COP26 and COP27 and the UN Food Systems Summit and other processes, the COP28 Presidency has identified food systems for the first time as a Presidential priority area, with plans to launch a leaders' statement and a non-party actor Call for Action on food systems. Further, under the UNFSS process, three coalitions were launched related to building climate resilient food systems, championed by 90+ actors. Several civil society and mixed public-private and community initiatives are gaining more momentum and emerging in this space. From an adaptation and resilience perspective, some of these include the Just Rural Transition, the Agroecology Coalition, Regen10, the Transforming Urban-Rural Food Systems Consortium (made up of C40 Cities, CARE, EAT, GAIN, ICCCAD, the Club of Rome, and WWF), WRAP, Champions 12.3, the Global FoodBanking Network, I-CAN, Food and Agriculture for Sustainable Transformation Initiative (FAST) and others. COP27 also saw the adoption of the Sharm El-Sheik Joint Work on implementation of climate action on agriculture and food security (3/CP.27), taking forward the work of the Koronivia Joint Work on Agriculture (4/CP.23).

OUTCOME-LEVEL PROGRESS

OUTCOME 1:

50% of food globally is produced through sustainable agriculture practices (including agroecological and regenerative approaches), without expansion of the agricultural frontier into pristine ecosystems, to deliver for people, nature and climate.



5 IIED, [The unsung giants of climate and nature investment](#), 2023

Transitioning to sustainable agriculture (including agroecological and regenerative approaches) is a critical part of the solution. Although a universal definition does not exist, such practices generally aim to improve soil health, enhance water infiltration and storage, increase the resilience of farms, and reduce reliance on chemical inputs¹ but also bring social and economic benefits. There is emerging evidence that sustainable agricultural practices can help to achieve climate and biodiversity goals and increase yields and farmers incomes vs. a business-as-usual approach.² For example, some studies suggest yield increases could be as high as 40% and the boost to economies would create as many as 5m full-time jobs by 2040 in farming, processing, and supportive industries.³ This transition must draw on the traditional knowledge of Indigenous Peoples and Local Communities around the world, many of whom are already implementing such practices, and know what works in their specific contexts.

Critically, a sustainable agriculture transition must address both how food is produced and what food is being grown, as a global, equitable convergence on diets to low-meat and predominantly plant-based, minimally-processed, locally-appropriate and context-specific diets is beneficial for both human and planetary health (see Outcome 3, below)⁴. This requires reshaping financial incentives and introducing supportive climate and nature-sensitive policies and regulations that create market and trade conditions to favour the production of sustainable and healthy foods, especially at local level.

Given the lack of consensus on what type of practices ‘sustainable agriculture’ comprises (e.g., agroecology, regenerative agriculture, climate-smart agriculture, etc.), it is difficult to quantitatively assess progress. The FAO’s 10 elements of agroecology that have been endorsed by 194 member states provide overarching guidance. Regen10 is developing a holistic outcomes framework to measure changes at the farm and landscape level to transition to regenerative, agroecological approaches. For this edition of the report, the organic share of total agricultural land is used as a proxy, which was at 1.5% in 2019, as reported by FIBL.⁵ Whilst not a perfect proxy, it does give an indication of the gap that remains and shows that **adoption of sustainable agriculture practices is still very low.**

1 The Food and Land Use Coalition, [Aligning regenerative agricultural practices with outcomes to deliver for people, nature, and climate planet](#), 2023

2 Global Alliance for the Future of Food, [Natural farming through a wide-angle lens](#), 2023

3 IUCN, [Regenerative agriculture works: New research and African businesses show how](#), 2021

4 The Lancet, [Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems](#), 2019.

5 FIBL, [The World of Organic Agriculture](#), 2021

The 50% target is an aspirational target, which could potentially be refined in future editions of this report. This report also notes the EU's objective of at least 25% of the EU's agricultural land under organic farming by 2030 as another target that this outcome could be based on. The next version of this report will provide an update on targets and indicators for this outcome, as more holistic and robust targets to measure sustainable agriculture are developed.

Policy and finance are critical levers to achieve more sustainable and resilient food and agriculture systems. Governments should reorientate agricultural and food policies and repurpose subsidies and investments to agroecological practices and more plant-based, resilient, sustainable, and locally-appropriate food production and consumption. They should also address trade, finance, and regulatory barriers to ensure a level playing field for healthy and sustainable and fair trade products. It is critical that these measures are designed with smallholders in mind, considering they will bear the brunt of impacts, but are also key actors in implementing lasting adaptation and mitigation changes in the production process. **Advertising and marketing by consumer companies and governments** can also help accelerate demand-side changes, as well as public procurement of healthy, local and sustainable foods. Climate risk-informed finance for smallholders, especially in the Global South, should be prioritized. Finally, **investment in innovation, such as in organic fertilizers**, remains a crucial lever to drive adoption of regenerative practices. Reducing food loss - resulting from losses throughout the food supply chain - and

CASE STUDY (RTR PARTNER):

Initiative 20x20 is supporting the revival of the Brazilian Babassu tree, a sustainable alternative to imported palm oil, restoring degraded land, and producing rich oil and plant fiber. The production has expanded to 120 thousand hectares in Brazil, benefiting 1500 families.



OUTCOME 2:

Halve global food waste and food loss per capita (relative to 2019).

food waste - resulting from decisions or actions taken by consumers and retailers - is a significant lever to build the resilience of agri-food systems. As well as positively contributing to income and food security, availability, and affordability, reducing food loss and waste also ensures the resources used to produce the food (e.g., water, energy, labor) are not lost.⁶ Further, it can avoid GHG emissions along the entire food supply chains (incl. from landfills) and thus promotes more circular economies.

Globally, around one third of total food production is lost or wasted.⁷ In 2019, a total of 119.9 kg of food was wasted per capita globally at household, food service or retail levels, representing 17% of total food produced.⁸ While there are some differences in levels of food waste across regions, it remains a prevalent issue globally, even in lower income countries, highlighting the need for action in all countries. **Food loss per capita was around 97 kg in 2019 (13.8% of total food produced), with a slight decrease from 13.8% to 13% in 2022.⁹** There are significant differences in food loss between higher and lower income countries (e.g., around 9% of food was lost in Europe and North America, vs. 21% in Sub-Saharan Africa).

To limit food loss, especially in the Global South, investing in post-harvest and cold-storage infrastructure, funding farmer education programs to optimize harvesting and storage techniques, and financing more advanced agricultural equipment can help. Also, improving communications throughout the supply chains, including better information about crop availability, can help farmers with excess food find markets that are able to buy it. **To reduce food waste, focusing on consumer education and advancing policy to incentivize retailer behavior (e.g., to donate waste to food banks) are significant levers.** Other policy options could include consistent use of food labeling with only one date label on products, expansion of composting access and infrastructure to turn food waste into valuable resources, standardized policies on imports, and more simplified packaging to simplify operations for value chain players and eliminate losses. **Better measurement and assessment of food loss and waste hotspots** is also essential to focus efforts and should be invested in.

6 United Nations, [Reducing food loss and waste: Taking Action to Transform Food Systems](#)

7 SDG 12 Hub, [Food Loss and Waste](#), Accessed 17 November 2023.

8 United Nations, [The Sustainable Development Goals Report 2023](#), 2023

9 SDG 12 Hub, [Food Loss and Waste](#), Accessed 17 November 2023.

It is important to note this does not include on-farm food loss, which is estimated to be 1.2 billion tonnes of food each year.

CASE STUDY:

The work of women fish processors around Lake Tanganyika has undergone a transformative shift with the Food and Agriculture Organization's (FAO) FISH4ACP programme, addressing challenges like poor refrigeration and declining yields due to climate change and Illegal, Unreported, and Unregulated (IUU) fishing. New methods taught by the programme, such as building drying racks and modern kiln processors, have empowered fish processors like Suzana Hamimu Kaleju and Tumaini Godfrey Luhingulanyi. Through these new skills and materials, they've formed cooperatives, reduced food losses, and increased income that help to increase their capacities to manage climate risk and impact for climate resilience and more sustainable use of fishery resources in the region.



OUTCOME 3:

Adoption of healthy, locally-appropriate, and sustainable diets in line with global goals, respecting socio-cultural sensitivities and geographic variations. This includes increasing the global consumption per capita of fruits, vegetables, seeds, nuts, and legumes by 1.5x, while also significantly increasing the share of alternative plant-based proteins in the meat and seafood markets.

An equitable global transition to healthy, locally-appropriate, and sustainable diets in line with global goals, that is predominantly low-meat and plant-based, can contribute significantly to reducing greenhouse gas emissions and building climate resilience, as plant-based diets largely require less land and resources. As stated by the IPCC and many other reports, a healthy diet is a sustainable one – good for both human health and environmental sustainability, and is made up of

predominantly more plant-based food sources, and less animal-based proteins.¹ It is important to note that shifts in diets will differ in every part of the world and should be **equitable and respect socio-cultural differences and varying geographical contexts**. For example, consumption of red meat in North America is over 6x the prescribed quantity, whereas consumption in South Asia is significantly less.² Regions where undernutrition and micronutrient deficiencies are prevalent may need to increase consumption of animal-based proteins.

Outcome 3 comes from the EAT-Lancet Commission, which states that, in order to double the global consumption of healthy plant-based foods by 2050, the **consumption of fruits, vegetables, seeds, nuts, and legumes needs to grow 1.5x compared to 2022 levels**.³ Alternative plant-based proteins that are nutritious and sustainable can be an important part of that diet, especially as significant growth is projected over the coming years in all parts of the world. Focus on ensuring the same level of access to alternative plant-based proteins in the Global South should be prioritized.

Governments should focus on changing food environments, availability, and prices, so that it's easier for people to eat more healthily and sustainably, including using public procurement to source healthy and sustainable foods (especially locally produced food) and introducing policies that **level the regulatory playing field** (e.g., taxes, expediting regulatory reviews, dietary guidelines, certification) between plant-based, sustainable foods and unsustainable products. Focus should be on making plant-based foods - fruits, vegetables, legumes, nuts etc. - more available, accessible, and affordable for all, as well as scaling alternative plant-based foods that are healthy and sustainable. Additionally, **marketing and advertising and consumer education** on the benefits of plant-based foods, including health and environmental, can boost customer adoption, as well as investment in R&D to improve alternative plant-based foods in taste and price.

1 IPCC, [IPCC AR6 Synthesis Report: Climate Change 2023](#), 2023

2 The Lancet, [Healthy Diets from Sustainable Food Systems](#), 2019

3 The Lancet, [Healthy Diets from Sustainable Food Systems](#), 2019

CASE STUDY (COP27 initiative):

The **Initiative on Climate Action and Nutrition (I-CAN)** was launched at COP27 by the Egyptian presidency, WHO and FAO and strives to build a strong alliance across the nutrition and climate communities to strengthen existing efforts to act and address gaps in both areas. In 2023, i-CAN convened advocacy meetings and workshops, expanded membership, and worked towards key COP28 deliverables: a baseline study of the indicators defined in COP27 to inform decision-makers about the status of integrated action on climate and nutrition, and a technical report on the evidence of systems pathways to address climate and improve nutrition outcomes simultaneously.



OUTCOME 4:

Protect, manage and restore biodiversity, including by halting and reversing forest loss and land degradation and conversion of natural ecosystems for agriculture, safeguard soil health, and ensure water quality and availability, to provide healthy and functioning natural ecosystems and resources for food and agriculture and other systems.

Food systems rely on the vital resources and services provided by nature, as outlined in the [Kunming-Montreal Global Biodiversity Framework](#). Maintaining the genetic diversity of crops, livestock, and trees and expanding the types and varieties of food we grow and eat, are essential to ensure the resilience and sustainability of food systems.¹ Healthy ecosystems such as forests, wetlands and marine systems also maintain the conditions needed to support food production, for example by regulating rainfall (up to one third of all the rain that falls in tropical agricultural lands

¹ FAO, [The biodiversity that is crucial for our food and agriculture is disappearing by the day](#), 2019

is derived from tropical forests²), stabilizing and replenishing soils, and sustaining fish stocks. Additionally, farmers rely on insects to pollinate their crops, and on soil microorganisms to maintain soil health and fertility.³ Indigenous Peoples and Local Communities are vital custodians of biodiversity and natural resources and they are on the frontlines of climate change and biodiversity loss.⁴

Agriculture is the largest global source of ecosystem degradation and biodiversity loss.⁵ For example, it is estimated that at least 20% of global land is now degraded⁶, representing half of all agricultural land; whilst pollution from nutrients, including those from agriculture, has created at least 700 dead zones in the world's productive oceans.⁷ Such practices are in turn reducing the resilience of our food systems to the impacts of climate change. For example, deforestation is making agricultural lands more susceptible to droughts and floods, pollution is interacting with rising temperatures in aquatic environments to further [threaten fish stocks](#),⁸ and unsustainable and inequitable water use is reducing water availability in areas where rainfall is increasingly unreliable.

As this is a new outcome (closely connected with nature and water systems), indicators for measuring progress will be developed for the next version of the report. **Some potentially relevant indicators include** (inter alia): [Indigenous Peoples rights and land-tenure](#); global and regional [deforestation rates](#); the extent and location of [degraded land](#); the extent and location of [marine eutrophication](#); [losses of nitrogen](#) to the environment; risk index for [pollinator](#) populations; scale of unsustainable [agricultural subsidy](#) payments; the '[4 per 1000](#)' initiative launched by France at COP21 to measure soil carbon; and the [Agro-Biodiversity Index](#). This report will align on such progress indicators in the next edition.

Examples of policies to address these issues include scaling up international financial flows and improving access for smallholder family farmers, to help them adopt nature-positive agricultural practices that support adaptation and resilience; repurposing subsidies to support nature-aligned agricultural practices and land

2 Smith, C, J. C. A. Baker, & D. V. Spracklen, [Tropical deforestation causes large reductions in observed precipitation](#), 2023

3 IPBES, Assessment report on Pollinators, Pollination, and Food Production, 2016

4 WWF, The state of Indigenous People's and Local Communities' lands and territories, 2020

5 The Food and Land Use Coalition, [Aligning regenerative agricultural practices with outcomes to deliver for people, nature, and climate planet](#), 2021

6 UNCCD, [Global Land Outlook, Second Edition](#)

7 UNDESA, [SDG Indicators Goal 14](#)

8 Cao L., Halpern B.S., Troell M., et al, Vulnerability of blue foods to human-induced environmental change, 2023

CASE STUDY (RtR partner):

Restore Africa, launched by the Global EverGreening Alliance at COP 26, aims to restore 1.9m Ha of degraded agricultural land and enhance the livelihoods of 1.5m farming families by selling carbon credits from land restoration efforts and giving the proceeds to the families owning the trees.



OUTCOME 5:

Scale and re-orient finance flows from public and private sources towards resilient, inclusive and sustainable food systems, increasing direct access for small-scale family farmers, women, youth, and Indigenous Peoples, aligned with climate risk-informed food policies and plans.

restoration; regulating supply chains to eliminate actions that destroy and damage nature; and putting in place new and scaling up existing mechanisms to secure payments for a range of ecosystem services (including but not limited to carbon storage and sequestration). It is critical that policies and finance respect and support the rights of Indigenous Peoples and Local Communities, recognizing the leading role they play in sustainable and resilient food production, while also protecting, managing and restoring nature.

Funding from all sources – domestic, public, private, multilateral, philanthropic and blended – as well as restructuring markets, including through regulation, taxation, and subsidies – is critically needed to fund the transition to resilient, inclusive, and sustainable food systems.

Progress has been slow, and a significant gap exists between the current level of finance flowing towards resilient food and agriculture solutions, and its projected needs. FAO reports that the current hidden costs of the food system (incl. environmental, health, and social costs resulting from harmful practices) amount to more than US\$10 trillion⁹, far outweighing the estimated costs of the transition.

9 FAO, [The State of Food and Agriculture 2023](#), 2023

UNEP estimates that climate finance (mitigation and adaptation) in agrifood systems needs to grow to at least US\$381bn¹⁰ annually by 2030 to match the needs estimated by a conservative climate transition scenario (with other estimates ranging to US\$1.3 trillion).

Current (2019/20) climate finance flows only amount to US\$28.5bn, representing only a fraction of the required investments, with **adaptation-focused agrifood system investments only receiving US\$7.3bn of that total**¹¹. 85% of total climate-related agri-food funding (US\$28.5bn) came from public sources (mainly DFIs and governments), with the **private sector only representing 12% of current investment levels**, mostly focused on mitigation-related projects. Multinational corporations (3%) and philanthropies (1.5%) only represent minor shares.¹² The share of climate-related development funding allocated to food and agriculture projects **has been decreasing over the past two decades** (from 37%¹³ over the period 2000-2010, to 25% over the period 2010-2020; currently around 20%). Further, only 1.5%¹⁴ of global climate finance is targeted to smallholder farmers, reflecting the need to increase the inclusivity dimension of climate finance. Also, only 8%¹⁵ of companies have set financial targets to support farmers in their supply chain to incentivise the uptake of regenerative agriculture.

Effective adaptation investment in agrifood systems is challenging because its success is contingent on the collaboration of multiple actors along different food value chains (from production to consumption) to make lasting changes. **Further, initiatives in agri-food systems are highly local and context specific**, requiring local knowledge, capacity, and ownership to succeed. **Finally, a general lack of data and tracking/monitoring of climate-related spending**, funding gaps, and the state of agriculture systems globally also pose a significant challenge.

Repurposing public and private spending, including subsidies in agri-food systems could significantly boost climate and nature sensitive interventions, as public subsidies to agriculture are estimated around US\$670bn per year, and private capital available for food system investment is estimated at US\$630bn annually¹⁶, both mostly directed to harmful practices. Further, to significantly increase climate-

10 CPI, [Landscape of Climate Finance for Agri-food Systems \(2023\)](#), 2023

11 Ibid

12 Ibid

13 FAO, [Climate-related Development Finance in the Agriculture and Land Use Sector between 2000 and 2020](#), 2022

14 UN Food Systems Summit +2, [Food Systems and Climate Action](#)

15 FAIRR, [Food sector making 'more promises than progress' on regenerative agriculture](#), 2023

16 CPI, [Landscape of Climate Finance for Agri-food Systems \(2023\)](#), 2023

related spending and remove hurdles, actors need to take a systems-based approach to investing, involving different stakeholders along the food life-cycle. Large funders need to think globally, but act locally, involving local financial institutions and development agencies with local operations, to also bridge the gap in technical capacity that farmers and food enterprises often face.

Finally, governments and research organizations need to step up efforts to track and monitor financial flows and agri-food related data to bring transparency and progress.



CASE STUDY (COP27 Initiative):

The **Food and Agriculture for Sustainable Transformation (FAST)** initiative, launched by the Egyptian presidency and FAO, is a multi-stakeholder partnership aimed at enhancing food and economic security by improving the quantity and quality of climate finance allocated to transform agriculture and food systems by 2030. The first inception meeting will be a high-level event at COP28 to gain more members and receive pledges. FAST will also be part of the COP28 programme on agriculture and food systems, providing a link between the COPs on food system strengthening.

CASE STUDY:

The Innovative Finance for the Amazon, Cerrado and Chaco Initiative (IFACC), launched in 2021 at COP26 by TNC, Tropical Forest Alliance, and UNEP, aims to support US\$1bn in IFACC-aligned capital disbursements by the end of 2025 and lay the groundwork for over US\$10bn by 2030. This will be done by bringing together leading companies, banks, and investors who work together to meet the need for transitional finance in the production of beef, soy, and other agricultural products without further deforestation or conversion.



OUTCOME 6:

By 2030, end hunger and climate-induced malnutrition in all its forms, in particular for the poorest and most vulnerable, including infants, through access to safe, nutritious and sufficient food all year round.

It is essential to acknowledge and address global growing hunger and malnutrition as a foundational pillar of the climate adaptation and resilience agenda. The global food system is failing and is vulnerable to climate-induced shocks and stresses. Climate change will continue to exacerbate already dire levels of food insecurity and malnutrition especially in fragile settings. For example, FAO estimated that climate-induced shocks to the food system between 1991-2021 have resulted in losses of around US\$123bn per year, equivalent to 5% of global agricultural GDP or the real GDP of Brazil in 2022¹. Improving access to safe and nutritious foods and critical nutrition services can make individuals physically and mentally stronger, more resistant to diseases, and more productive, ultimately building more resilience to climate change.

Outcome 6 is directly linked to [UN SDG 2](#) on creating a world free of hunger by 2030. **We are significantly off track to meet this target. 735 million people - 9.2% of the world's population - are chronically hungry**, representing a staggering rise of 122

¹ FAO, [The Impact of Disasters on Agriculture and Food Security](#), 2023

million people compared to 2019 - **levels not seen since 2005.**² At the same time, the world continues to suffer from overwhelming levels of malnutrition. 2 in 3 women of reproductive age are micronutrient deficient³. Among young children, 148 million (22.3%) are stunted and 45 million (6.8%) are wasted.⁴ **Combined, these forms of malnutrition are responsible for over 3 million child deaths per year,** and IPCC modeling suggests there will be a **further 10% decrease in disability-adjusted life years by 2050 solely due to climate-change induced undernutrition.**⁵

Conflict, rising food prices, widening income inequality, and the persisting effects of the COVID-19 pandemic, continue to undermine progress towards achieving the 2030 global hunger and nutrition targets. All are exacerbated by increasing extreme weather events with growing impacts and loss and damage. It is estimated that in 2022, 56.8 million people were in a state of acute hunger due to weather extremes⁶, more than double the amount in 2021.

Coordinated action, policy solutions and increased funding will be paramount to achieving hunger and malnutrition targets, which will also contribute to global health, income growth, and reducing entrenched inequalities. In addition to those included in the above outcomes, solutions include: expanding smallholder (and especially youth) access to inputs, extension, finance and markets for nutritious and local foods; including nutrition-related indicators such as child wasting and food prices in early warning systems for climate-related shocks and expanding climate and nutrition-sensitive social protection; centring women's needs as producers, consumers and caregivers, addressing structural and normative barriers which are holding women back; scaling up key nutrition interventions, including local food diversification, food fortification, biofortification, supplementation including multiple micronutrient supplements for pregnant women, promotion and protection of breastfeeding, and provision of ready-to-use-therapeutic foods to treat child wasting; and expanding access to primary and community health for the most vulnerable, ensuring their capacity to deliver integrated health and nutrition services.

Achieving outcomes 1-6 will require profound changes to our food systems. Given that billions of livelihoods are on the frontlines of climate change, and critically

2 FAO, [The State of Food Security and Nutrition in the World 2023](#), 2023

3 The Lancet, [Micronutrient deficiencies among preschool-aged children and women of reproductive age world-wide: a pooled analysis of individual-level data from population-representative surveys](#), 2022

4 FAO, [The State of Food Security and Nutrition in the World 2023](#), 2023

5 Sulser T., Beach R. Wiebe K., Dunston S., Fukagawa N., [Disability-adjusted life years due to chronic and hidden hunger under food system evolution with climate change and adaptation to 2050](#), 2021

6 Food Insecurity Information Network, [Global Report on Food Crises 2023](#), 2023

OUTCOME 7:

Advance a just and inclusive food systems transition, ensuring equitable and resilient livelihoods and meaningfully engaging all relevant stakeholders, and especially smallholders, women, youth and Indigenous Peoples, in relevant plans, processes and finances that affect them, with special emphasis on supporting their efforts to secure land and resource tenure rights, as well as boosting local markets for local consumption.



depend on these food systems (70% of people in developing countries rely on agriculture for their livelihoods⁷), **it is crucial to ensure these transitions are fair, inclusive, and based on 'just transition' approaches** such as the Principles for Just Food System Transition. In the same sense that access to adequate food is an international human right, so too should access to technical and financial capacity for preventing, anticipating, absorbing, and adapting to climate shocks be non-negotiable. Just transitions should work towards an **'end state' food system that is more equitable and sustainable**, ensure the process to get there is just, and leverage the change **process to address systemic social and economic inequalities and vulnerabilities**⁸.

Ensuring a just and equitable transition process in agrifood systems is especially challenging. Top-down and simplistic climate policies could leave large rural communities stranded, with few options for secured livelihoods, exacerbating deep injustices already ingrained in current systems. For example, 94%⁹ of workers in agriculture are informally employed, earning low wages, often exploited, with poor job security and no social protection. **The transition should provide these communities with support, safety nets, and social protection, while improving working conditions.** The change also needs to be inclusive, involving key actors that are marginalized and ignored, such as women farmers.¹⁰

There are a number of opportunities and 'levers' to promote such transitions. **These include policy processes, financial instruments, and market incentives that reflect the needs and perspectives of producers, food actors and those whose**

7 FAO, [The Right to Food](#)

8 Just Rural Transition, [Principles for Just Food System Transitions](#), 2023

9 ILO, [Women and Men in the Informal Economy: A Statistical Picture](#), 2018

10 ActionAid, [Principles for a Just Transition in Agriculture](#), 2019

livelihoods will be impacted, with a particular focus on the most marginalized groups such as smallholders, women, youth and Indigenous Peoples. This will require broad and meaningful involvement of these groups in participatory planning and decision-making about the transition at all levels. These instruments should also be designed with the goal of fairly distributing the risks, burdens, and benefits of the transition. For example, they should support and finance food producers and their communities in transitioning to sustainable agricultural practices. Those who can't continue working in the food sector should receive support to learn new skills and access alternative jobs and social safety nets. **A just and inclusive transition will also require international collaboration and financial support** (including ODA, multilateral funding, philanthropic capital, and private capital from agri-business companies), especially from North-to-South.

For this year's edition of the SAA report, this outcome was included to highlight the importance of a just and inclusive transition, yet further consultations are required to define concrete targets and tracking metrics, which will be further refined towards the 2024 edition of this report.

CASE STUDY:

The YouthADAPT challenge, jointly organized by the Global Center on Adaptation, the African Development Bank and Climate Investment Funds as part of the Africa Adaptation Acceleration Program awards at least 50% of its grant to women-led enterprises. Examples of funded companies include Agritech Analytics, which has developed a crop and soil management tool that leverages AI-powered satellite imagery data analytics and data from solar powered Internet of Things to reverse soil degradation, an issue faced by several small-holder farmers in Kenya. Also, Soupah Kitchen & Company uses hydroponics to plant vegetables such as lettuce, kale, leafy greens, and herbs as a response to crop losses resulting from several extreme weather events experienced in Nigeria. The technical expertise and funding provided by YouthADAPT helped Soupah Kitchen & Company increase their production capacity seven times over. To further highlight the role of women, the 2024 YouthADAPT competition will solely focus on female-owned enterprises which pioneer Fourth Industrial Revolution (4IR) technologies for climate adaptation.

2.2 COASTAL & OCEAN SYSTEMS

SAA Task Force, co-led by the Ocean & Climate Platform, drove progress assessment for this system, with active participation of the Ocean Risk and Resilience Alliance (ORRAA), Stimson Center, UN Environment Program (UNEP), Global Mangrove Alliance (GMA), Global Funds for Coral Reefs (GFCR)



SYSTEM-LEVEL PROGRESS

By 2050, the global community will face annual costs of over US\$1 trillion¹ to coastal urban areas due to rising sea levels, extreme weather events, and other climate-induced changes. Impacts will disproportionately impact more exposed countries, such as Small Island Developing States (SIDS) and Least Developing Countries (LDCs). **Enhancing ocean and coastal resilience requires protection and restoration of coastal and ocean ecosystems.** Ocean and coastal habitats not only help mitigate the impacts of climate change by sequestering carbon and acting as natural buffers to sea-level rise and storm surges, but also sustain income, culture, livelihoods, and nutrition security for coastal communities globally.

PLANNING & POLICY PROGRESS

Coastal and marine nature-based solutions (NbS) have gained substantial recognition in recent years, with significant advancements in policy and planning. On planning, almost 100 new or updated NDCs (i.e., submitted in first revision cycle) include at least one coastal and marine NbS² and almost all include coastal and marine NbS in their adaptation strategies.³

¹ Climate Champions, [The Business case for investing in coastal ecosystems](#)

² Ocean & Climate Platform, Conservation International, IUCN, Rare, The Nature Conservancy, Wetlands International and WWF, [Coastal and marine ecosystems as Nature-based Solutions in new or updated Nationally Determined Contributions](#), 2023

³ Ocean & Climate Platform, Conservation International, IUCN, Rare, The Nature Conservancy, Wetlands International and WWF, [Coastal and marine ecosystems as Nature-based Solutions in new or updated Nationally Determined Contributions](#), 2023

A true science-to-policy effort led to the development of crucial reports and guidelines to assist countries in this effort (e.g., [IUCN Global Standard for Nature-based Solutions](#), [International Guidelines On Natural And Nature-Based Features For Flood Risk Management](#), [Guidelines for Blue Carbon and Nationally Determined Contributions](#)).

On policy, countries are increasingly engaging on coastal and marine NbS, as evidenced by the Bonn Climate Change Conference 2023 Ocean and Climate Change Dialogue, which focused on coastal ecosystem restoration (including blue carbon) and fisheries and food security. Over 250 case studies were shared, highlighting numerous good practices already being implemented.

One example is [Fishing for Climate Resilience](#), which empowers small-scale fishing communities to adapt and build resilience to climate change impacts, and restore critical habitats through ecosystem-based approaches.

Furthermore, UNFCCC mechanisms and processes exist to support these efforts. For example, the [Experts Group for Ocean and Coastal Zones of the Nairobi Work Programme](#) (NWP) supports parties, especially LDCs, in designing effective adaptation plans. Similar progress was also achieved under UNFCCC's sister convention the UN Convention on Biological Diversity (CBD). Parties to the CBD adopted the [Kunming-Montreal Global Biodiversity Framework](#) in December 2022 to halt and ultimately reverse biodiversity loss. Among the 23 targets, two respectively aim to protect 30% and restore 30% of coastal and marine areas by 2030.

PARTNERSHIP & INCLUSIVITY

There is a growing body of knowledge available on ocean-based climate adaptation with extensive scientific research related to climate impacts, risks to ocean and coastal ecosystems and adaptation solutions. Examples include:

- ▶ [The IPCC AR6 WGII](#) provides a global assessment of current and projected vulnerabilities, risks and impacts on ocean and coastal ecosystems and their services as well as adaptation options.
- ▶ Strong evidence that Marine Protected Areas (MPAs) contribute to climate adaptation. [Studies](#) show that MPAs can significantly enhance carbon

sequestration, coastal protection, biodiversity conservation, and the reproductive capacity of marine organisms as well as fishers' catch and income.

This system has been progressed through multiple initiatives and partnerships.

For example:

- ▶ **Mangrove Breakthrough:** In collaboration with the Global Mangrove Alliance, 50 civil society and research institutions, public and private financial institutions, and governments working together to protect and restore mangrove ecosystems for the benefit of biodiversity and the human communities who depend on them.
- ▶ **Coral Reef Breakthrough:** In collaboration with the International Coral Reef Initiative (ICRI) and the Global Fund for Coral Reefs (GFCR), includes more than 45 countries representing 75% of the world's coral reefs to secure the future of coral reefs.
- ▶ **Seagrass Breakthrough:** Technical experts, civil society organizations, financial institutions, governments, Indigenous Peoples, local communities, and funding agencies accelerating a comprehensive, coordinated, global approach to seagrass conservation and restoration at scale.
- ▶ **Coastal 500:** Largest global network of Mayors and local governments leaders working towards creating thriving and prosperous coastal communities.
- ▶ **CitiesWithNature:** ICLEI, The Nature Conservancy and IUCN brings together 300 Cities and regions from 72 countries to promote and support integration and implementation of NbS into urban environments, providing a shared platform for partners to engage and connect.
- ▶ **Sea'ties:** International initiative facilitating development of hybrid coastal adaptation policy, bringing together more than 40 coastal cities mayors, governors and other stakeholders globally. It offers a forum to share knowledge and sustainable solutions for sea level rise.

FINANCE

There is a clear economic case to invest urgently in coastal adaptation and resilience. The cost of inaction could potentially reach up to US\$8.4 trillion over the next 15 years and damage to coastal infrastructure could reach US\$3.98 trillion.⁴

Furthermore, healthy coastal ecosystems can avoid costs generated by climate impacts. Coral reefs can reduce the annual expected damages from storms to human life and property by more than US\$4bn⁵ and according to the Global Commission on Adaptation, protecting and restoring mangroves globally, at a cost of less than US\$100bn, could create US\$1 trillion in net benefits by 2030⁶.

Despite the clear economic case, there are not yet clear signals of financial progress. In the absence of a global coastal resilience finance tracking mechanism, the total amount committed to coastal and ocean solutions is unclear. However, some positive investment examples include:

- ▶ **[The Ocean Risk and Resilience Action Alliance \(ORRAA\)](#):** A multi-stakeholder ocean finance alliance that brings insurers, banks, governments, academia, and civil society together across geographies – with a focus on the Global South. They pioneer, pilot, and scale innovative finance products that invest in coastal and ocean resilience with a mission to catalyze at least US\$500m into coastal and marine natural capital by 2030, through development and deployment of finance products that mitigate risk and build resilience. As of the start of 2023, US\$14m has been invested in 76 projects helping over 121,000 people be more resilient.
- ▶ **[Blue Carbon Buyers Alliance](#):** Serves as the “buyers voice” in the growing blue carbon community of practice to help scale blue carbon markets to conserve and restore coastal ecosystems. The private sector can commit to purchase high quality blue carbon credits to send a strong demand signal in a nascent market.

4 WWF, [Trillions in assets at risk due to declining ocean health and climate change](#), 2021

5 Climate Champions Team, [A guide to private sector investment in coastal resilience](#), 2022

6 Climate Champions Team, [A guide to private sector investment in coastal resilience](#), 2022

- ▶ **AXA Climate:** Provides new insurance schemes for coastal communities, indirectly reducing costs associated with hazards or hazard risk by adjusting insurance premiums or providing capital to rebuild after a disaster.

DATA & TECHNOLOGY

There are still data gaps for this system, with a collective lack of data on many ocean variables and poor granularity and data coverage required for predictive models. Further, there is a need to upgrade marine technological capabilities and expand international cooperation. These gaps may be driven by high costs of offshore work, prohibitive to most countries, and limited technology training. **However, multiple tools have been developed to record and track protected and conserved areas such as:**

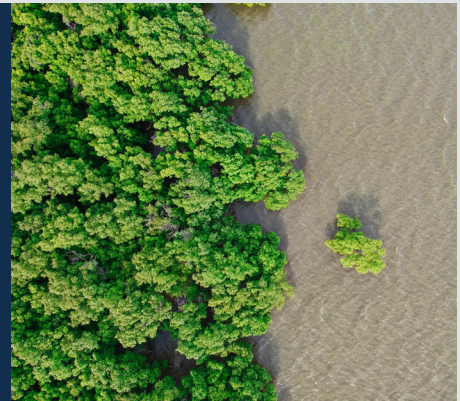
- ▶ [The Mangrove Restoration Tracker Tool \(MRTT\)](#) to record and track mangrove restoration projects across its lifetime
- ▶ [The Allen Coral Atlas](#), the world's first global satellite-based coral reef monitoring system
- ▶ [The Global Fishing Watch](#) to monitor and understand marine ecosystems and support the design, management and monitoring of Marine Protected Areas (MPAs)
- ▶ [Global Mangrove Watch](#) is an online platform that provides remote sensing data and tools for monitoring mangroves and provides countries lacking a national mangrove monitoring system with first cut mangrove extent and change maps.
- ▶ The [IUCN Green List](#) are examples to track their restoration projects across their lifetime.
- ▶ [CORVI](#) provides decision support tool for leaders to make smart climate investments to improve the safety and security of coastal cities and Z island states

- ▶ [The Action Platform for Source-to-Sea Management \(S2S Platform\)](#) is a multi-stakeholder initiative to exchange and generate knowledge, and support joint action for improved management of land, water, coastal and marine linkages.

OUTCOME LEVEL PROGRESS

OUTCOME 1:

Secure the future of 15 million hectares of mangroves globally by mobilizing US\$4 billion to halt mangrove loss, restore half of recent losses, double protection of mangroves globally to support the resilience and reduce flood risks for over 15 million people and over US\$65 billion worth of property annually.



Mangrove conservation and restoration are essential and effective nature-based solutions to adapt to climate change and build resilience of coastal communities globally. Mangroves act as natural barriers, reducing the impact of climate events such as storm surges and coastal erosion. They also have the ability to provide food and livelihoods, while harboring incredible biodiversity and acting as immense carbon sinks.

Some progress has been made in recent years to restore and protect mangroves, resulting in slowed mangrove loss in recent decades, but not at the scale and pace required. Over 1 million hectares of mangroves have been lost since 1996, highlighting the urgent need for action⁷.

A key sign of progress was the launch of the [Mangrove Breakthrough](#) at COP27, which sets a science-based, achievable and measurable target for non-party actors and governments to collectively restore and protect mangroves at the scale needed, catalyzing US\$4bn to scale proven solutions and mobilize action. To date, six governments have endorsed the Mangrove Breakthrough and many are in process. In achieving the Mangrove Breakthrough, over 43.5 million tonnes of

⁷ Global Mangrove Alliance, [The State of the World's Mangroves](#), 2022

CO2 are estimated to be sequestered into mangrove biomass and an additional 189 million tonnes of CO2 safeguarded or sequestered in the soil. Restoring half of recently lost mangroves would potentially benefit 37 commercial marine species of fish, crabs, bivalves and shrimp by providing habitat for over 25 billion juveniles each year while providing coastal protection against flooding and storms – securing lives, infrastructure and economic security.

Funding is starting to flow but to reach the US\$4bn target, there is a need to re-imagine and consolidate the landscape of mangrove-positive investment opportunities, in addition to traditional approaches. Financing traditional approaches like conservation areas and restoration projects will remain critical. But regenerative, productive businesses also have a vital role to play in creating market-driven mechanisms and socio-economic incentives to secure the long-term health of these critical ecosystems.

CASE STUDY:

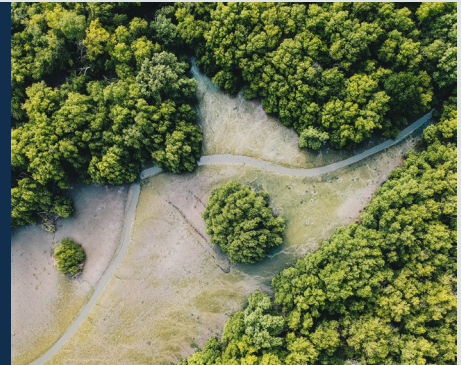
The **M40 programme**, led by Earth Security, is creating a global pipeline of mangrove-positive business models, bridging the gap between commercial capital and the conservation and restoration of mangroves. It includes proposals in sectors such as sustainable aquaculture, green infrastructure, agroforestry, blue carbon, tech, and ecotourism, which will be scaled across 40 regions with the highest concentrations of mangroves globally. In collaboration with UBS Optimus Foundation, investment pilots are being developed in key countries like Indonesia. The Global Environment Facility (GEF) is supporting the M40 pipeline's expansion in Least Developed Countries. The programme has catalyzed the development of 'Mangrove Insurance' products in the Philippines and the scoping of a 'Mangrove Bond' in collaboration with HSBC Australia. Future plans include developing regional investment blueprints and a fund in 2025.



Finally, it is crucial to engage with local actors including governments to address the challenge of tenant rights as this presents a significant roadblock for mangrove restoration and protection initiatives. Lack of clearly defined property rights contribute extensively to the conversion of mangroves to alternative use. Local governments play a pivotal role in facilitating dialogue, clarifying land tenure issues, and crafting policies that balance the rights of local communities and Indigenous people, with the imperative to safeguard mangrove ecosystems.

OUTCOME 2:

Secure the future, halt loss, protect and restore 125,000 sqm of shallow-water tropical coral reefs with investments of at least US\$12 billion to support the resilience of more than half a billion people globally.



The window for protecting coral reef ecosystems is closing rapidly. Coral reefs exist in more than 100 countries and territories, support at least 25% of marine species, and support more than one billion people's lives and livelihoods, including in vulnerable coastal communities. The world has lost 14% of the coral on its coral reefs since 2009⁸.

A key signal of progress is the recent launch of the [Coral Reef Breakthrough in 2023](#) which aims to scale action and finance by establishing an accountability framework for the public and private sector. In addition, there has been notable progress on policy making with many countries referring to coral reef protection in their NDCs. Out of 148 new or updated NDCs (i.e., submitted as of 1 October 2023), 36 explicitly mention coral reefs. Among these, 23 highlighted pressures on corals (e.g., acidification causing bleaching) and consequences arising from coral reef loss (e.g., decline in fish stocks). Moreover, 26 committed to measures to effectively protect and restore coral reefs⁹.

⁸ Climate Champions, [The Mangrove Breakthrough: a call to action for a critical ecosystem](#), 2022

⁹ Ocean & Climate Platform, Conservation International, IUCN, Rare, The Nature Conservancy, Wetlands International and WWF, [Coastal and marine ecosystems as Nature-based Solutions in new or updated Nationally Determined Contributions](#), 2023

CASE STUDY:

Willis Towers Watson (WTW) and the Mesoamerican Reef Fund (MAR Fund) joined forces to create the world's first multinational parametric insurance cover for hurricane risk. This project, dubbed the MAR Insurance Programme, is a brilliant interweaving of finance and climate risk management. Its purpose is to protect the Mesoamerican Reef – an ecological lifeline for Mexico, Belize, Guatemala, and Honduras. Communities here rely on the reef for protection, food security, and livelihoods, with nearly 2 million beneficiaries at its core. Inception of the MAR Insurance Programme came with the backing of the Canadian government via Race to Resilience partner, the Ocean Risk and Resilience Action Alliance (ORRAA), and continuous support from the German government through the InsuResilience Solutions Fund (ISF).

OUTCOME 3:

Coastal cities are protected¹ from ocean-based hazards by green, gray, and hybrid solutions building resilience of at least 900 million² people globally.



1 “Cities” are defined as in the IPCC AR6 WGII CCP2 and “protected” primarily refers to coastal protection measures vs. relocation measures

2 Based on an estimate of 898 million people living in low-elevation coastal zone globally ([Population development as a driver of coastal risk: Current trends and future pathways](#)) and the projection of this number to more than 1bn by 2050 (IPCC, AR6-WG-CCP2)

There is a growing recognition of the urgency to deliver tangible solutions for interconnected risks in coastal zones. As hubs of solutions and innovation, coastal cities are starting to launch adaptation projects and programmes. In 2019, over 800 cities reported more than 3,177 projects aimed at addressing climate hazards, of which 25% were focused on flooding and sea level rise³.

Yet, coastal adaptation is still a significant gap, with important disparities between the Global North and South, as well as between densely populated wealthy cities and smaller settlements. Few cities have defined ambitious adaptation strategies, and even fewer secured the funding and human and technical capacity to implement them. In 50% of cases, coastal adaptation plans are not implemented, and 85% actions are not framed by current and future impacts of climate change (IPCC, AR6). Incremental actions, reactive and protection-based shoreline management remain the norm even though they rarely match local needs, sometimes exacerbating inequalities and vulnerabilities, conflicting with the preservation of natural buffer zones and key ecosystems. Consulting local populations, including low-income and marginalized people, is critical for an inclusive adaptation approach, and is not yet fully integrated.

Lack of financial resources is a significant challenge to accelerating coastal adaptation. Less than 5% of climate finance for cities is dedicated to adaptation. Despite being projected to absorb most of the population growth, secondary cities from the Global South have limited budgets and access to international finance. Increasing investment in long-term coastal resilience involves: developing multi-criteria analyses that consider adaptation co-benefits and ecosystem services (e.g., [UCSC Coastal Resilience Lab](#)), involving sectors of the blue economy (e.g., coastal tourism, shipping, ports) and pooling adaptation projects for increased funding opportunities.

However, various options are now available to design robust and effective adaptation responses⁴ and overcome these challenges, including mixing options to create hybrid solutions⁵ (e.g., green-gray infrastructure) as it better addresses multifaceted risks while delivering co-benefits such as improved water quality, erosion control and biodiversity conservation in addition to flood resilience and carbon sequestration.

3 Bongarts Lebbe, T., Beguin Billecocq, I., Vegh, T., & Sarkozy-Banoczy, S. [Investment Protocol: Unlocking Financial Flows for Coastal Cities Adaptation to Climate Change and Resilience Building](#). Blue-tinted white paper, 2022

4 Bongarts Lebbe T., et al., [Designing Coastal Adaptation Strategies to Tackle Sea Level Rise](#), 2021

5 Ocean & Climate Platform, Sea'ties Initiative, [Policy Recommendations for coastal cities to adapt to sea level rise](#), 2023



CASE STUDY (RTR):

Green Gray Infrastructure in Concepcion, Philippines. The Municipality of Concepcion is located in the northern part of Panay Island, the sixth-largest and fourth-most populous island in the Philippines, formed by more than 25 island villages. This coastal area is exposed to the effects of climate change, from more intense dry seasons to extreme storms and typhoons, affecting the livelihoods of local communities. The Global Mangrove Alliance is working with Conservation International to use nature-based solutions along grey infrastructure to increase the resilience of 11 island villages. The project uses a combination of wave attenuation fences, sediment trapping fences, low-crest semi-permeable breakwater as grey solutions, and mangrove restoration and the establishment of a community-based Marine Protected Area (MPA) as green solutions. So far, a total of 110,363 seedlings of native species have been planted covering an area of 11 hectares of mangrove rehabilitation and establishing a 769.7-hectare community-based marine protected area (CB-MPA), which included capacity building and training.

OUTCOME 4:

Halt loss of, protect and restore seagrass ecosystems to mitigate climate change and support people and biodiversity globally

Seagrass plays a pivotal role in climate change mitigation and adaptation, through its highly effective carbon sequestration and storage capacity¹, pollution mitigation, and ability to protect populations against sea-level rise and flooding.

Seagrass is also fundamental to biodiversity maintenance, providing critical habitat for many species, including nursery grounds for endangered species and 20% of the world's biggest fisheries.

Despite its crosscutting importance in climate benefits, biodiversity conservation and pollution reduction, seagrass continues to be undervalued, under-protected and overlooked in decision-making, resulting in loss of 7% of this key marine habitat per year globally².

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The launch of the UNEP report [Out of the blue: The value of seagrasses to the environment and to people](#) in 2020 was a milestone in turning the tide for seagrass protection globally. The report shows the importance of seagrass ecosystems for people and nature, marking a significant step in raising awareness on the urgency of preserving these key ecosystems.

However, seagrasses' value is not yet fully recognized and integrated into global frameworks and national strategies. Seagrasses are not always integrated in countries' Nationally Determined Contributions (NDCs) or global frameworks such as the SDGs.

1 18% of the world's oceanic carbon is stored in seagrass - UNEP, [Five ways often unheralded seagrasses boost biodiversity](#), 2023

2 UNEP, [Out of the Blue report: The value of seagrasses to the environment and to people](#), 2020

3 18% of the world's oceanic carbon is stored in seagrass - UNEP, [Five ways often unheralded seagrasses boost biodiversity](#), 2023

4 UNEP, [Out of the Blue report: The value of seagrasses to the environment and to people](#), 2020

Limited and inadequate awareness and communication about the importance of seagrasses hinders public and private support for conservation initiatives.

As a result, financial mechanisms and incentives are still lacking to stimulate seagrass conservation and restoration efforts, among other challenges such as:

- ▶ Incomplete global mapping and data sets: Lack of a comprehensive global map of seagrass distribution and health, with existing gaps in global data sets for seagrass extent and distribution, hindering targeted conservation efforts.
- ▶ **Cost and viability challenges associated with seagrass restoration:** Ensuring successful restoration of seagrass ecosystems is costly and technically challenging in addition to being less effective than protection and conservation, hindering interest in undertaking it.
- ▶ **Inadequate Marine Protected Areas (MPAs)** and local management: Insufficient designation of MPAs or locally managed marine areas (LMMAs) consider seagrass ecosystems, leading to a critical gap in protecting seagrass habitats and ecosystem services.

CASE STUDY:

Empowering Communities through Seagrass Conservation in the Indo-Pacific Region. CMS Office - Abu Dhabi Dugong MOU is conserving +20,000 ha of seagrass ecosystems in priority sites across five Indo-Pacific countries. This is the first project in the Indo-Pacific region delivering site-specific assessments of seagrass health and threats, and evaluating the ecosystem services seagrass provides, while empowering more than 6 local NGOs supporting +23,000 people. The information collected during these assessments is used to guide and influence local NGOs, coastal communities and other stakeholders in developing informed policy. The initiative helps develop business models that provide sustainable sources of financing to community groups leading seagrass conservation efforts. The project is funded by the International Climate Initiative, a key instrument of the German Federal Government supporting international climate action and biodiversity.

For this year's edition of the SAA report, no concrete targets or metrics are adopted for this outcome. Further consultations and analysis will be done in 2024 as part of the Seagrass Breakthrough to set aspirational yet achievable targets by 2030

OUTCOME 5:

Halt loss, protect and restore, marshes, and kelp forests to support people in temperate communities



For this year's edition of the SAA report, no concrete targets or metrics are adopted. Further consultations and analysis needs to be done to set aspirational yet achievable targets on marshes and kelp forests.

2.3 WATER & NATURAL SYSTEMS

SAA Task Force, co-led by SIWI for Water and IUCN for Nature, drove progress assessment for this system, with active participation of UNEP, SWA, WWF, and TNC.



SYSTEM-LEVEL PROGRESS

As climate events increase in frequency and intensity, and become more widespread, **negative impacts on water resources, freshwater ecosystems (and water-related ecosystem services), and nature, which underpins all forms of life, will increasingly threaten the vulnerability of societies, economies and nature.** Such impacts can cascade through other highly interlinked systems. For example, droughts driving water scarcity can impact agricultural yields and fishing activities, which negatively impact food and nutrition security and safety. It is thus critical to protect and restore freshwater ecosystems, conserve water resources and other natural systems. Furthermore, both systems can be leveraged as contributors to climate resilience. For example, nature-based solutions (NbS) can support adaptation to sea level rise, intense flooding, droughts, heatwaves, and wildfires while delivering significant biodiversity and mitigation co-benefits. Resilient water and sanitation services can ensure access to drinking water in regions struck by droughts, or access to vital hygiene in regions struck by disasters.

PROGRESS

The world is off track to meet its 2030 Water and Nature outcomes. Water stress globally has increased, putting 800 million¹ people in a state of critically high water stress and impacting biodiversity and food, health and energy systems. 2.2 billion people still lack access to sufficient drinking water. The state of the world's freshwater resources and their catchments is deteriorating: 20%²¹ of the world's river basins have experienced rapid changes in surface water levels over the past five years, and around

¹ United Nations, [SDG 6 Synthesis Report on Water and Sanitation](#), 2023

80%² of wetlands have been lost since the pre-industrial area. The loss of monitored populations of freshwater biodiversity is occurring at twice the rate of terrestrial and marine realms, and nearly half the planet's land is degraded. **Progress needs to be accelerated to preserve the world's water and natural resources, and leverage them as assets in building climate resilience.**

POLICY & PLANNING

In recent years, water and nature have garnered more attention on the international stage. For instance, COP27 saw the first inclusion of water and NbS in the Sharm El-Sheikh Implementation Plan (SHIP) decision³. In March 2023, the first UN conference on water in 46 years was held at the UN Headquarters, a watershed moment resulting in the [Water Action Agenda](#) where parties and non-party stakeholders submitted over 800 commitments. There has also been an increase in international commitments for NbS. For example, [the Leaders Pledge for Nature](#) was endorsed by 64 countries at the UN Biodiversity Summit in 2020, calling for a “significant scale-up in nature-based solutions and ecosystem-based approaches on land and sea”. In that same year, the [Kunming-Montréal Global Biodiversity Framework](#) elevated the nature agenda and united the world on a track to nature positivity by 2030. Also, the [COP 28 presidency has expressed the intention of putting nature at the core of leaders' engagement](#).

Nevertheless, effective planning for water and nature at the transboundary, national, and local levels is not up to standard. Policymaking, planning and governance is often fragmented institutionally and territorially, and across sectoral legislation, resulting in ineffective planning, implementation and enforcement. Only 54%⁴ of countries have integrated water resource management strategies. Further, even though many countries include nature as part of their NDCs⁵ (92%) and NAPs (83%⁶ mention ecosystem vulnerability, 70%²⁸ mention NbS), or have national plans in place (185 countries have NBSAPs²⁸), there is insufficient attention to governance (e.g., only 12% of NDCs talk about water governance⁷) and streamlining into sectoral policies and local implementation (only 20 countries have subnational NBSAPs²⁸).

2 United Nations, [World Water Development Report 2023: Partnerships and Cooperation for Water](#), 2023

3 UNFCCC, [UNFCCC decision1/CMA.4](#)

4 United Nations, [SDG 6 Synthesis Report on Water and Sanitation](#), 2023

5 [UNEP, Nature-Based Solutions: Opportunities and Challenges for Scaling up](#), 2022

6 Convention on Biological Diversity (CBD), [National Biodiversity Strategies and Action Plans](#), Accessed 17 November 2023

7 SIWI, Water in the enhanced NDCs; an analysis of water-related content in non-Annex Countries' NDCs, 2023

Further, many policies in place today are still contributing to the further decline of the world's natural resources. For example, UNEP estimated that between US\$500bn - US\$1000bn of subsidies globally still go to harmful agriculture, energy and fishing companies, which continue to emit GHGs, degrade land and water resources, and contribute to biodiversity loss.

Countries need to implement effective, science-backed policies and governance and financing structures that facilitate systematic dialogue and collaboration across political borders, sectors and layers of government, to adequately manage, protect, and improve their water and nature systems (including freshwater and related ecosystems), including involvement of local communities in decision-making. **Further, countries need to understand the harmful impact of existing policies and economic incentives by accounting for 'natural capital' when making decisions, and realign these policies and regulations** with national targets on biodiversity, soil health, climate, freshwater ecosystems, among others.

CASE STUDY:

Partner Spotlight (COP 27 Initiative): the Action on Water Adaptation and Resilience (AWARe) was launched at COP 27 as a pivotal initiative for addressing the challenges of climate change through effective water management solutions. AWARe consists of six workstreams that cover different themes of water and climate topics. Its demand-driven and action oriented approach gives a unique nature to respond to developing country needs. It aims to support cooperative water-related adaptation action and co-benefits, and promote cooperation and interlinkages between water and climate action. Since its launch, the deployment of AWARe was organized at different levels: a multi-stakeholder International Steering Committee was created to govern the Initiative, with first meeting at 6th Cairo Water Week in 2023. A Coordination Hub has been set up and soft-started, serving as secretariat for the initiative hosted by WMO in Geneva. A first regional hub "the Pan-African Centre for Water and Climate Adaptation" was hosted by Egypt and capacity-development activities have started. The Initiative is currently being rolled out in over 15 countries, with prospects to double this number by COP28, with ongoing efforts to scale into other regions of the world.

Tools, guidance and standards are now increasingly available for non-party actors to include nature targets into business plans and disclose risks, dependencies and impacts to nature, yet adoption, harmonization, and integration into national legal frameworks needs to grow. The [Nature-Positive Call to Action](#), to be launched at this year's COP28, calls on non-party actors to set science-based targets for climate ([SBTI FLAG](#)) and nature ([SBTN Land](#)), and disclose progress against targets annually. Further, it urges businesses and financial institutions to disclose risk and impact assessments to climate and nature using the Task Force on Climate-related Financial Disclosures ([TCFD](#)) and Nature-related Financial Disclosures frameworks ([TNFD](#)).

FINANCE

There is a significant gap between levels of funding for water-related projects and estimated investment needs, which range from US\$182bn to US\$664bn annually⁸ (overall finance for water, sanitation, flood protection, irrigation, and integrated water resource management). Further, even though overall development assistance has increased, funding levels for water-related development assistance have decreased by 12% since 2015 to US\$9.8bn in 2021, posing a severe challenge to lower-income countries often most in need of support and most exposed to climate hazards. The UN 2023 Water Conference catalyzed financial commitments to the global Water Action Agenda from public funds, multilateral development organizations, and private actors (e.g., US\$49bn commitment by the US for climate-resilient WASH infrastructure, US\$100bn commitment from ADB, Danone launched Water Acceleration Blending Fund). However, **water-related funding still must be accelerated.**

For NbS, a doubling⁹ investment by 2025 is required to meet projected needs, implying a dramatic increase in NbS funding growth. UNEP estimates required funding needs for NbS are expected to reach US\$384bn³¹ by 2025, and US\$484bn³¹ by 2030, in order to halt biodiversity loss, reach land degradation neutrality targets, and significantly contribute to reducing emissions. Funding for NbS was estimated to be only US\$154bn³¹ in 2022 (UNEP), representing a minor growth of 2.6% over the prior year.

8 United Nations, [SDG 6 Synthesis Report on Water and Sanitation](#), 2023

Note: Overall finance for water, sanitation, flood protection, irrigation, and integrated water resource management

9 UNEP, [State of Finance for Nature](#), 2023

Water and nature-related projects and programs face some key challenges¹⁰ to attract funding. For example, water and nature-related projects can be difficult to monetize and often require high upfront investment and long payback periods, which are not well-aligned with the needs of most financiers. Increased collaboration between funders can support co-financing arrangements which leverage multiple sources of finance with different risk-return profiles at various stages of the project. Second, there is often a gap in technical and financial capacity between demand and supply-side actors. Intermediary actors (e.g., NGOs, water funds) can bridge this gap and be a catalyst for increasing access to funding opportunities. Third, water and NbS investments are cross-cutting in nature and often fail to adequately account for synergies and implications on natural ecosystems, on other actors and sectors, or on other socio-economic indicators. Coordination across demand-side actors, supply-side actors, and policymakers can turn this hurdle into a benefit: creating synergies, managing trade-offs, encouraging integration across sectors and enhancing access to funding. Finally, as outlined above, enabling policies are required to re-allocate public funding away from harmful practices and incentivize private capital flows to nature-positive investments.

KNOWLEDGE & CAPACITY

Data and information related to water systems or natural ecosystems, critical for science-based decision-making and solution design, is often inconsistent and fragmented, insufficiently granular and of inferior quality. Governments need to invest in better data collection and management practices, including enhanced collection of existing data from public and private sources, investment in new infrastructure (e.g., Earth Observation Technologies), and sharing mechanisms to integrate data across sectors and layers of government and across political borders.

Further, technical capacity to process data, inform decision-making, harmonize methods and information among countries in transboundary basins, and design holistic and effective solutions is often insufficiently available, especially in developing countries, mainly due to a lack of funding and human resources. Governments, therefore, need to **prioritize national efforts to strengthen the technical capacity of local authorities and international and national basin organizations** to collect, manage, and interpret data, design effective and locally contextualized (nature-based) solutions, and monitor progress.

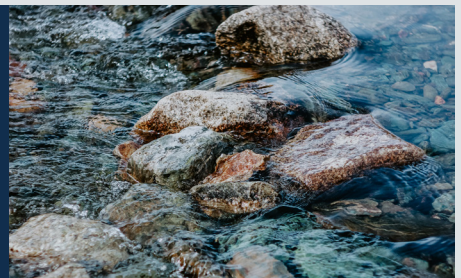
¹⁰ United Nations, [World Water Development Report 2023: Partnerships and Cooperation for Water](#), 2023

There is a need for additional common definitions, standards, safeguards and guidance when designing and implementing NbS. Limited awareness, understanding and agreement around the criticality and value of nature are still barriers to scaling up their use. The United Nations Environment Assembly (UNEA) common definition, agreed at UNEA 2022 by 193 member states, is a first step to overcome these barriers. As this is the only internationally recognized standard, further actions are however needed to design and enforce universally recognized safeguards.

OUTCOME-LEVEL PROGRESS

OUTCOME 1:

Restore 300.000 kms of rivers and 350 million hectares of wetlands by 2030 and protect healthy rivers and wetlands.



Freshwater ecosystems, including rivers, lakes, aquifers, and wetlands, are on the frontlines of the climate crisis. They act as a critical impact system and vital source of solutions. For example, our ability to absorb the impacts of climate-induced floods and droughts is fundamentally underpinned by the resilience of freshwater systems, as places for flood waters to settle, or fish and other species to move when conditions change.

Globally, monitored freshwater populations have declined by an average of 83%¹¹ since 1970. We have lost 64%³⁴ of the world's wetlands since 1900, and only 37%³⁴ of the world's longest rivers remain unimpeded and free-flowing. Further, the degradation of wetlands and rivers continues today. This outcome and its targets come from [the Freshwater Challenge](#), which is also beginning to collate data that will provide a basis for progress assessment in future years. The goal will also be adopted as one of the three Water Outcomes at COP28.

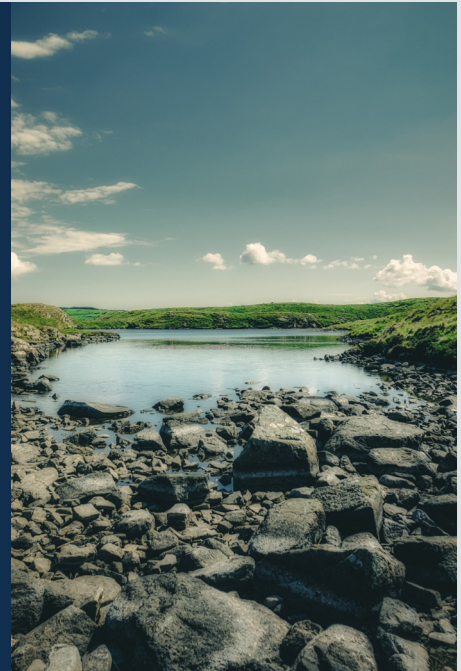
Key challenges include, as outlined in the system-level narrative above, a lack of mainstreaming of freshwater protection and restoration into policy and legislation,

¹¹ Ramsar Convention on Wetlands, [Global Wetland Outlook - Special Edition 2021](#), 2021

partly caused by a lack of technical capacity, a lack of data and information on the status of freshwater ecosystems (including where to focus and how to carry out restoration and protection efforts), and a general lack of funding.

CASE STUDY:

The **Freshwater Challenge**, supported by WWF, IUCN, TNC, CI, WII UNEP, and the Ramsar Secretariat is a country-driven initiative, championed by the governments of Colombia, DR Congo, Ecuador, Gabon, Mexico, and Zambia, which aims to support, integrate and accelerate the restoration of 300,000 kms of degraded rivers and 350m ha of degraded wetlands by 2030, as well as conserve intact freshwater ecosystems, including through transboundary cooperation, where appropriate.



OUTCOME 2:

By 2028, all communities living in the overlap of high climate hazard exposure and insufficient water, sanitation, and hygiene access have been targeted with climate resilient water, sanitation, and hygiene services.

People living in the overlap of insufficient access to safely managed WASH services, and high climate hazard exposure are extremely vulnerable to climate shocks and lack access to resilient WASH infrastructure as a resource to mitigate these negative climate effects. There is a need to prioritize people in WASH efforts, and a need to consider climate hazards when building new WASH infrastructure, ensuring its resilience to withstand shocks.

There is still a large gap to be bridged to meet this target. According to the latest UNICEF-WHO [Joint Monitoring Programme report](#)¹², 2.2 billion people still lack sufficient access to drinking water, 3.4 billion people access to sanitation, and

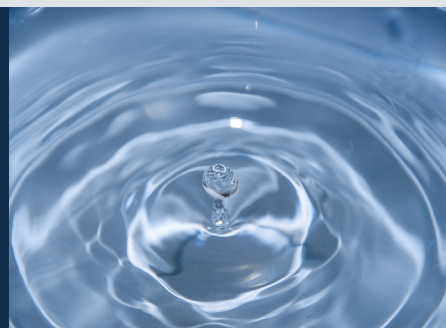
¹² UNICEF, [Progress on Household Drinking Water, Sanitation, and Hygiene 2000-2022](#), 2023

2 billion access to hygiene services in 2022. Further efforts are needed to combine that information with exposure to climate hazards. In this regard, the JMP is currently identifying opportunities for enhanced monitoring of climate resilience in the sector, on which this report can rely in future editions.

The link between water systems and climate resilience is often not reflected in NDCs, NAPs, or national water strategies. Further, **governments struggle with setting up the right governance structure** that is integrated across local levels, where implementation happens, and across sectoral bodies to ensure linkages with other sectoral plans and policies. **Funding remains a challenge for the water sector in general**, and especially for adaptation-related projects which receive only 10%¹³ of climate water finance.

OUTCOME 3:

Coherent national policy frameworks and climate strategies are enhanced to integrate water planning that enables transformative climate outcomes in agriculture.



The Earth's water and food systems are inextricably linked. Water is the most critical input to food production, with agriculture being the single largest user of freshwater representing over 70%¹⁴ of withdrawals globally. Currently, global hunger impacts over 735¹⁵ million people, and according to the latest IPCC estimates, climate-impacted water risks can further put 80 million more people at risk of hunger by 2050. Integrated management is essential to help balance trade-offs and improve synergies between water users and food production objectives, to ultimately build more climate-resilient water and food systems.

To date, discussions on water and food systems in international and national contexts have largely been siloed. For example, water and water-related ecosystems were largely absent from the discussion at the 2021 Food Systems Summit, and food was underrepresented at the UN 2023 Water Conference, with only 13% of voluntary commitments to the Water Action Agenda addressing food security. In addition, at a national level, the water and food nexus is not often acknowledged

¹³ WaterAid, [Just add water: a landscape analysis of climate finance for water](#), 2020

¹⁴ Campaign For Nature, [Why 30%](#), Accessed 17 November 2023

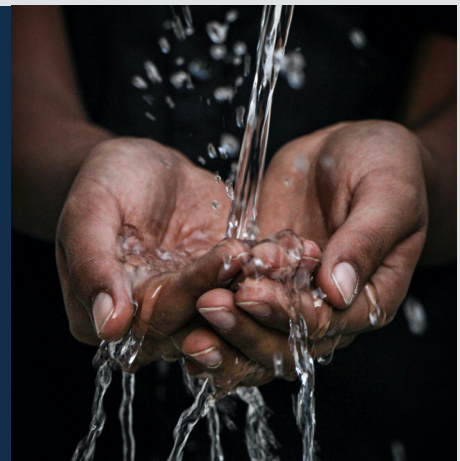
¹⁵ United Nations, [The Sustainable Development Goals Progress Report 2023](#), 2023

or considered in a coordinated way in NDCs, NAPs, or other national climate plans. While actors on the ground - including farmers, pastoralists, and water user associations, among others - clearly understand the linkages, at the national and global levels there is an urgent need to improve connectivity between policy communities in order to balance trade-offs, align finance, and avoid maladaptation. This is particularly true in NDCs and NAPs, where competing sectoral priorities can undermine one another when developed in isolation.

No concrete targets or metrics have yet been adopted for this outcome. Further consultations need to be done to set aspirational yet achievable targets for a number of governments to develop and implement these policies across food and water systems, also in line with the targets for policymakers defined under the [Climate Action Pathway](#) for Water (2021).

OUTCOME 4:

By 2030, 1% of annual water sector spending is invested in nature-based solutions via watershed investment programs - like water funds – resulting in improved management and/or protection of rivers, lakes and wetlands, driving water security benefits and improving critical habitat for biodiversity.



Insufficient funding poses a pervasive challenge for all water-related projects, but especially for investments in NbS related to restoration and conservation of rivers, lakes, wetlands, aquifers, watersheds, and lands. **There is still a 10x increase required between the share of annual water spending going to NbS today, and the target of 1% as outlined in this outcome.** Annual spending on water today is US\$770bn¹⁶, of which spending on NbS, at US\$0.7bn¹⁷, represents only 0.1%. By 2030, this amount should grow to US\$7bn per year, which corresponds to 1% of total annual spending on water in 2019.

There is a **general lack of clear national and subnational policy, legal, regulatory, and planning frameworks integrating the value and importance of NbS,**

¹⁶ GWI, Global Water Market Outlook, 2019

¹⁷ Salzman, [Payments for Ecosystem Services: Past, Present, and Future](#), 2018

including for adaptation. Watershed Investment Programs can build the track record that regulators and lawmakers need to prove the cost-effectiveness of NbS to address water security, biodiversity, climate, and socio-economic challenges. Second, **fragmented governance arrangements and narrow remits of funders don't match with investment in NbS, which are often high in initial investment, long in their pay-back and creating co-benefits going beyond the remits of specific funders.** Watershed Investment Programs can provide a convening platform for siloed stakeholders to improve collaboration, develop cohesive NbS portfolios that draw on synergies between their separate mandates, pool disparate funding to increase economies of scale, and fill information gaps that can help them make better management decisions. Third, **lack of data and information on the effectiveness of NbS often limits attractiveness for investors.** Watershed Investment programs have strong monitoring, evaluation, and learning programs that track implementation and impact.

CASE STUDY:

The Water Funds Network, launched by TNC, has developed a toolbox that collects and disseminates best practices found globally to design and create water funds. So far, they have been involved in the creation of 43 water funds globally, with 35 funds in the pipeline.



OUTCOME 5:

Water systems are smart, efficient and robust with a reduction in water loss through leakage, and wastewater systems maximize recycling and reuse alongside natural wetland filtration with zero environmental spillage.

Limiting water losses to a minimum by deploying smart, efficient and robust water systems can contribute to building climate resilience by preserving water as a scarce resource to combat future climate hazards, and by ensuring water infrastructure is robust to withstand future impacts (e.g., extreme temperatures, damage from flooding). Further, **treating and recycling wastewater, including, in some cases, through NbS, can help prevent the release of pollutants into**

the environment, improving the status and quality of freshwater and coastal ecosystems and the services they provide.

The World Bank estimates that as a global average, **30%¹⁸ of the world's piped water is lost before it reaches the customer, most of it due to leaks and theft.** In developing nations, roughly 45 million cubic meters of water are lost daily, worth over US\$3bn per year. For wastewater treatment, **it is estimated that 58% of wastewater¹⁹ generated by households was safely treated in 2022** (UN SDG 6.3), based on data from 140 countries. This represents only a limited increase from 56% in 2022.

For both indicators²⁰, the challenge is global in nature, yet the problem is more severe and urgent in lower-income countries. Water loss is estimated at 15% in developed countries⁴², and can reach levels of up to 35%⁴² in developing countries. Further, next to a loss of water as a resource, there is also an economic loss of revenue, which can be problematic in low-income countries. For wastewater treatment, closing the gap will require accelerating action for lower-middle income countries (LMICs) and low-income countries (LICs) where only 28% and 8%²¹ of wastewater is treated, respectively.

The main challenges for water loss include old and aging infrastructure, availability of data on water loss and leakages, and lack of public investment.

Technology solutions to increase data transparency (e.g., advanced pressure management), infrastructure upgrades, and preventive maintenance are solutions to bring levels of water loss down, which also hold an economic opportunity through monetization of additional revenue and efficiency savings. For wastewater, key challenges include a lack of public funding, as is common for all water-related initiatives, and lack of integrated governance on water and waste topics.

18 Liemberger R., Wyatt A., [Quantifying the global non-revenue water problem](#), 2019

19 United Nations, [SDG 6 Synthesis Report on Water and Sanitation](#), 2023

20 WaterWorld, [Non-Revenue Water Loss: its causes and cures](#), Accessed 17 November 2023

21 United Nations University, [Toward a world free of untreated wastewater, breaking the Catch-22 situation faced by developing countries](#), Accessed 17 November 2023

CASE STUDY:

London's Sustainable Drainage Action addresses the need to promote the awareness, and the retrofitting, of sustainable drainage systems right across London, making it work in a natural way. The benefits are steadily reducing flood risks by easing the burden on the drains and sewers, reducing pollution of the tributary rivers and streams, creating more pleasant landscapes, streets and settings for London's buildings, and providing opportunities to save water. School activities and studies related to the water cycle are also included.



OUTCOME 6:

Protection of 30% of the world's lands and inland waters, 2 billion hectares sustainable management and 350 million hectares restoration of land securing legal rights for Indigenous Peoples and local communities with use of NbS to deliver the integrity of natural ecosystems for climate, water, food, health and other biodiversity life supporting roles.

Protection, restoration and sustainable management of land (and inland waters) is critical to building climate resilience for people and nature. Healthy functioning land ecosystems improve soil health, strengthen the natural water cycle and positively impact biodiversity, all of which provide vital services to human life. For example, land restoration reduces soil erosion and increases water retention, improving water quality and availability. Further, improved soil fertility and water-holding capacity increase resilience to droughts. Healthy soils, biodiversity and water enhance agricultural yields, making the food system more resilient to shocks.

Protection of land refers to efforts to conserve and protect pristine natural resources with minimal human intervention. **In 2023, 16% of the world's lands and their embedded inland waters are under protection, as reported by the Protected Planet.** There is still a gap of 14% to be bridged to reach the Kunming-Montreal 30 by 30 target of protecting at least 30% of the world's lands and inland waters. Further,

measured from 2020, growth has not been increasing at the pace required to meet the target, implying an urgently needed acceleration. Moreover, this estimate of 16% disguises the fact²² that certain ecosystem types remain under-represented in many national systems of protected areas, that many existing protected areas are not adequately designed to address the specific ecological attributes of these ecosystems, and that often the management plans of existing areas do not contain objectives related to protection and restoration.

The 350m ha target corresponds to the Bonn Challenge²³ of bringing 350m ha of degraded and deforested landscapes into restoration by 2030. **Since its launch, the Challenge is now at 210m ha of pledged land area for restoration across 60 countries.**

Finally, sustainable management refers to human activities - such as agriculture, mining, and infrastructure development - being done in a way that doesn't compromise the resilience of societies, economies and ecosystems by eroding soils, damaging biodiversity, degrading riparian vegetation and floodplains, draining wetlands, and other variables. There is currently no known initiative actively tracking this metric, partly due to the lack of a universally accepted definition of sustainable land management. However, the **ENACT initiative, which has also adopted these land targets as one of their three NbS goals, is setting up a tracking mechanism** for these goals, on which future editions of this report can rely for measuring progress.

CASE STUDY (COP 27 INITIATIVE):

The **'Enhancing Nature-based Solutions for Accelerated Climate Transformation' partnership (ENACT)** was launched at COP27 by the Egyptian Presidency, in collaboration with the Government of Germany and IUCN, with the goal to establish a global coalition of party and non-party actors to address gaps in coherence and collaboration in integrating action on climate change, biodiversity loss, and land degradation. The partnership aims to act as an enabler of progress towards multilaterally established global climate and biodiversity targets, aligned across the three Rio Conventions. ENACT has made strong progress in 2023, including an inaugural Framework Report towards the annual state of NbS (to be launched at COP28), and the growth of its partnership to 30+ partners.

22 TNC, IUCN, WWF, WCPA, Equilibrium Research, FCC, [A pathway for inland waters in the 30x30 target](#), 2022

23 Bonn Challenge, [Progress](#), Accessed 17 November 2023

There is a general lack of cohesive policy on land-use strategies that integrate across climate, sectoral and local planning, and which generally lack clear implementation strategies. Existing policy is largely still incentivizing unsustainable land use, further contributing to land degradation, and affecting the financial feasibility of alternative restoration/protection/sustainable management use cases. Further, **robust tracking mechanisms to assess the success of restoration endeavors are often absent**, complicating evidence-building efforts. **Scarcity of technical experts** specializing in land restoration and climate adaptation also impede effective planning and implementation. Also, especially in developing regions, **issues with land tenure complicate effective implementation**, as only about 30% of global²⁴ land is formally registered.

CASE STUDY (CITIES RTR):

The city of Yaoundé focuses on reforestation of the commune through awareness campaigns, the dissemination of seedlings to the local population and the launch of a prize for schools (primary and secondary) implementing a reforestation and nature protection policy. It is part of the activities for the protection and participatory development of the Mingsosso River area against erosion, pollution, flooding and disaster prevention.



OUTCOME 7:

By 2025, financial institutions contribute to halting land conversion by eliminating commodity-driven deforestation from portfolios and all actors tap into nature-based solutions investment opportunities of US\$484 billion/year needed by 2030.

Global funding for Nature-based Solutions stands at US\$154bn²⁵ in 2022, falling short by around 3x of the 2030 target of US\$484bn, as estimated by UNEP.

Private funding in particular needs to grow, as it is currently estimated at US\$25.6bn, representing only 17% of total NbS funding.

²⁴ The World Bank, [Land](#), Accessed 17 November 2023

²⁵ UNEP, [State of Finance for Nature](#), 2023

Financial institutions can facilitate part of these flows by disincentivizing private funds to flow to land conversion and commodity-driven deforestation. The Global [Canopy's Deforestation Action Tracker](#), which presents a topline review of 557 financial institutions to create a baseline of action on deforestation, **found that only 12% of organizations had an overarching policy to address deforestation in 2023.** 2023 was the first year of the tracker, which will be expanded over the coming years, enriching tracking of this outcome.

Key challenges to channeling additional funding in the space **relate to lack of an enabling policy-environment and certain key project characteristics**, such as the relative novelty of NbS investments and a lack of technical understanding of its value among a broader audience, returns beyond traditional investors' direct remits, relatively long pay-back periods and uncertain risk profiles.

2.4 HEALTH SYSTEMS (LAUNCHED IN 2023)

SAA Task Force, co-led by the World Health Organization (WHO) and the International Federation of Red Cross and Red Crescent Societies (IFRC) drove progress assessment for this system

SYSTEM-LEVEL PROGRESS

Climate change is an urgent health crisis with significant impacts on people's health. Climate change has direct and indirect impacts on health, health systems, and health care facilities. It can result in death, injury and illness from more frequent and severe extreme weather events, such as heatwaves, storms and floods. Additionally, it increases the risk of climate-related illnesses, premature deaths and poses a threat to mental health and overall wellbeing. Furthermore, climate change is undermining many social determinants of health such as livelihoods, equity and access to safe and quality health services. These risks are disproportionately experienced by the most vulnerable and disadvantaged, such as women, children, and communities experiencing poverty.

Health is also highly interlinked with other systems such as food, water and infrastructure. Changing climate patterns disrupt agriculture, leading to food shortages and malnutrition. Altered precipitation and extreme weather events, for example, threaten clean water access, increasing waterborne diseases. Inadequate infrastructure that are not climate-resilient, such as homes, roads or health care facilities, exacerbate health risks during extreme weather events, hampering healthcare access and quality for the most vulnerable populations. Furthermore, as climate changes, health and human mobility are closely connected, forced displacement or migration has significant impacts on physical and mental health.

Urgent action is needed to strengthen health system resilience and prevent rapidly escalating loss of lives and suffering. With the worsening health impacts of climate change compounding other existing crises (e.g., cost-of-living crisis, global conflicts), populations worldwide increasingly rely on health systems as their first line of defense.

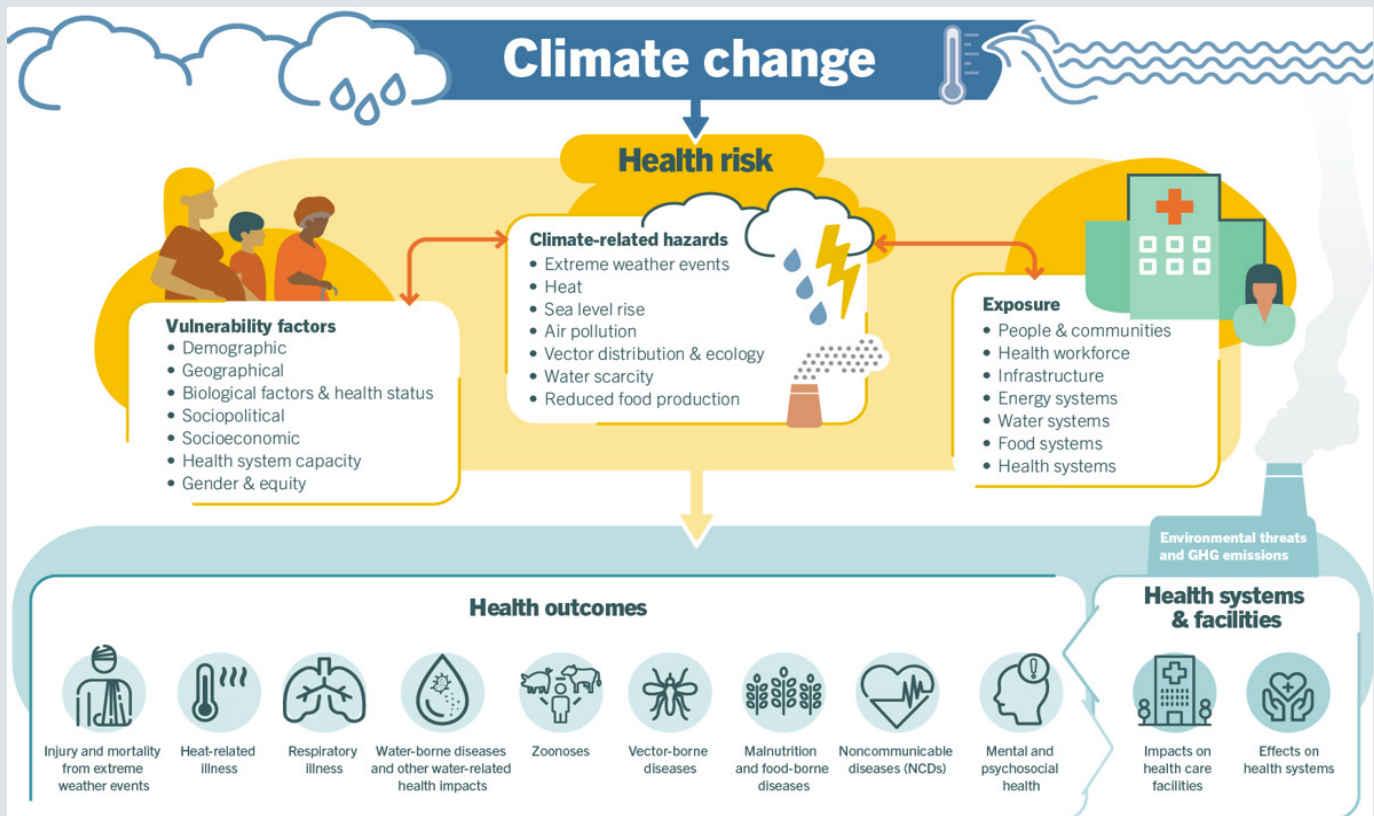


Exhibit 1: Climate-sensitive health risks, their exposure pathways and vulnerability factors (Source: World Health Organization)

PLANNING & POLICY

There has been growing recognition of the Health and Climate nexus, with health and climate communities alike elevating these topics on global agendas. COP28 marks the first dedicated Health thematic day at a UNFCCC COP, and the UN Climate Change High-Level Champions have adopted a Health System pillar under the Sharm El-Sheikh Adaptation Agenda, defining outcomes to be implemented by 2030 to build health resilience for vulnerable populations. Coverage of Health and Climate in the media reached a new record high in 2021 with 14,474 articles published, a 27% increase from 2020¹. Similarly, the number of scientific papers investigating health and climate change increased by 22% from 2020 to 2021².

There has also been notable progress across policy makers. Among the 126 UN member states' NDCs, 86% now reference health, an increase from 82% in the first

1 Indicator 5.1, based on the analysis of articles in newspapers across 37 countries - [The Lancet Countdown report on health and climate change: Health at the mercy of fossil fuels](#), 2022

2 Indicator 5.3, [The Lancet Countdown report on health and climate change: Health at the mercy of fossil fuels](#), 2022

NDCs³. According to the WHO Global Survey 2021, 67% of surveyed countries (95 participants) have conducted or are currently undertaking climate change and health vulnerability and adaptation assessments, and 77% have developed or are currently developing national health and climate change plans or strategies⁴. At the city level, local authorities are progressively identifying risks of climate change on the health of their populations as a first step to delivering a tailored response that strengthens local health systems.

However, implementation of climate and health interventions needs to be accelerated. Only a quarter of surveyed countries (out of 46)⁵ have reached a “high” or “very high” level of implementation of their health plans or strategies. **Key barriers to implementation include insufficient financing, human resource constraints, limited research and evidence, and insufficient technologies and tools.**

FINANCE

Finance remains a major gap for achieving health resilience, particularly for LMICs. While no recent sources track funding flows towards Climate and Health specifically, climate adaptation funding in general falls far short of needs (see [Finance chapter](#)). The percentage of countries that identify insufficient finance as a barrier to implementing their national health and climate plan or strategy increased from 56% in 2018 to 70% in 2021⁶. This is particularly true for LMICs that are the most vulnerable to climate change and have the highest burden of disease. Primary barriers to accessing international finance for these countries include a lack of information on opportunities, a lack of capacity to prepare proposals and a disconnect from climate processes.

PARTNERSHIPS

Considering the strong interlinkages with health and other systems, radical collaboration across sectors is essential and there are signs of positive progress. Structures that support collaboration on policies and programmes have already been established in many countries. As of 2021, 81 of 95 countries have a designated focal

3 Indicator 5.4, [The Lancet Countdown report on health and climate change: Health at the mercy of fossil fuels](#), 2022

4 WHO, [Health and Climate change global survey report](#), 2021 (95 participants)

5 WHO, [Health and Climate change global survey report](#), 2021 (95 participants)

6 WHO, [Health and Climate change global survey report](#), 2021 (95 participants)

point responsible for health and climate change in their ministry of health that can work within the health sector and between sectors to coordinate action. In addition, 51 countries have established and operationalized multi-stakeholder mechanisms (e.g., Task Forces or committees) on health and climate change.⁷ However, fewer countries reported having established formal agreements (e.g., MoUs) between the health ministry and others.

Other initiatives help countries meet commitments, such as the Alliance for Transformative Action on Climate and Health ([ATACH](#)) launched to support implementation of the COP26 health initiatives. The ATACH harnesses the collective power of WHO Member States and other stakeholders to drive forward the agenda on Climate Resilient Low Carbon Sustainable Health Systems. A dedicated working group on climate resilient health systems supports countries to deliver on the first commitment area of the COP26 Health program:

- ▶ Climate change and health vulnerability and adaptation assessments
- ▶ Health National Adaptation Planning
- ▶ Access to climate change finance for health

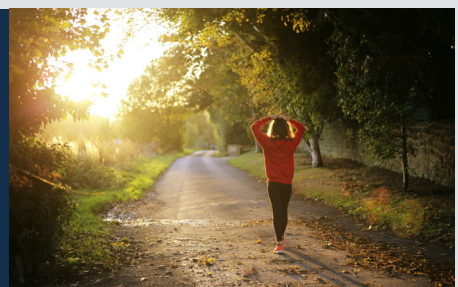
INTRODUCTION OF SAA HEALTH OUTCOMES

This year, four Health Outcomes have been added to the SAA after extensive consultation with global health stakeholders. While many other health solutions are also needed, these four high priority areas need urgent action and scaling. Other health-relevant SAA outcomes are included in systems, such as Food, Water, and Human Settlements, and are complementary to the four specific Health outcomes.

Further consultations and analysis needs to be done to set aspirational yet achievable targets for these four Health outcomes.

OUTCOME 1:

Health systems and facilities are resilient to climate hazards and vulnerable populations have access to safe and quality health services



⁷ WHO, [Health and Climate change global survey report](#), 2021 (95 participants)

Climate change threatens the ability of health systems to effectively protect and improve populations' health. Extreme weather events can strain health systems by overwhelming their capacity and disrupting delivery of care and emergency response. Climate-related disasters and slow onset climate changes (e.g., sea level rise, temperature increase) can damage healthcare infrastructure, hindering its functionality. LMICs' health care facilities are particularly vulnerable, often lacking adequate infrastructure, healthcare personnel, water and sanitation services, and reliable energy supply.

Health systems and facilities should be strengthened to protect people's health in the face of climate change. The [WHO Operational Framework for building climate resilient and low carbon health systems](#) provides practical guidance on how the health sector can systematically and effectively increase the climate resilience of the health system. Implementation of the Framework's 10 components would help health organizations, authorities, and programmes to be better able to anticipate, prevent, prepare for, and manage climate-related health risks and decrease the burden of associated climate-sensitive health outcomes. It is also imperative that countries and health actors identify and implement interventions that increase resilience of health care facilities to climate-related shocks and stresses and protect the health workforce and the communities they serve.

Based on the [WHO guidance for climate resilient and environmentally sustainable healthcare facilities](#), four areas for interventions to build climate resilience healthcare facilities include:

- ▶ Health workforce interventions to ensure sufficient availability of trained health staff
- ▶ Water, sanitation and health care waste interventions such as flood protection to prevent overflow of wastewaters
- ▶ Energy interventions such as onsite energy generation to avoid grid disruptions
- ▶ Infrastructure, technology and products interventions such as retrofitting of healthcare facilities to ensure climate-resilient design

Measurable targets and indicators are currently being defined for this outcome and will be reflected in future annual progress.

CASE STUDY:

A joint project has been carried out by the Fijian Ministry of Health and Medical Services, the Korea International Cooperation Agency (KOICA) and the World Health Organization (WHO) to strengthen the climate resilience of Fiji's health care facilities. Under the partnership, over 200 healthcare facilities were assessed to determine their vulnerability to climate change. 10 criteria were used to select healthcare facilities to be prioritized for retrofitting and/or relocation to higher ground. These included, among other things, the facility's workforce, electricity supply, water, sanitation, hygiene, waste management and infrastructure.



OUTCOME 2:

Multi-sectoral heat action plans and health-sector action plans protect high risk populations (older persons, workers, impoverished, marginalized), for 50% of the populations exposed to extreme heat

Extreme heat has significant health impacts on populations globally, with vulnerable populations being particularly affected. Prolonged high temperatures stress the human body, exacerbating respiratory and cardiovascular diseases, mental health, diabetes, and renal issues. Some populations are more exposed or more physiologically or socio-economically vulnerable and face increased risk of heat illness and death from heat exposure, including the older persons, infants and children, outdoor and manual workers, athletes, and those experiencing poverty. Gender can also influence heat exposure. Heat also indirectly affects health by influencing behavior, disease transmission, health care service delivery, air quality, and critical infrastructure such as energy, transport, and water. Extreme heat damages crops and livestock, heightens fire risk and exacerbates water insecurity posing impacts on food and water security. Due to anthropogenic urban heat, cities experience amplified exposures and challenges.

Heat early warning systems and multi-sectoral heat action plans and health sector action plans are the first step to developing an effective response to increasing heat threats. Heat early warning systems forecast and advise on when and where dangerous heat conditions will occur, to inform planning for long-term overheating and short-term heat emergencies. Heat plans help design and coordinate emergency response and adaptation solutions that are needed to address the city or country's exposure risk to heat. Solutions vary from urban design (e.g., cool pavements and facades, passive cooling systems), nature-based solutions (e.g., green roofs, urban parks), health service readiness, and social support and behavioral awareness campaigns. These plans help coordinate joint efforts with other heat impacted sectors, such as energy, labour, transport, water, and agriculture. Special attention to vulnerable populations is essential when developing action plans and designing solutions, ensuring inclusive and locally led action.

The 50% target is based on the ambition for the Early Warnings for All to ensure universal coverage for early warning systems by 2027. These must be accompanied by plans to respond to those warnings. WHO estimated that 26 countries currently have heat-health plans (incl. countries like India) and sets the ambition to be 50% of the population covered by heat plans by 2030.

Partner Spotlight: The [Global Heat Health Information Network](#) brings multi-sectoral scientists, practitioners, and policy makers together to build capacity to respond to extreme heat risks to health.

OUTCOME 3:

All countries have climate-informed health surveillance and early warning systems in place for priority climate-sensitive diseases, including vector-borne, water-related, airborne

Weather and climate conditions significantly impact the incidence and geographic distribution of various diseases. Changes in climate, such as increased temperatures, and extreme weather events, heatwaves, floods, and droughts, alter disease transmission ecologies and population vulnerability, thereby influencing risk for climate-sensitive diseases.

Climate-informed surveillance and early warning systems are effective solutions to enhance the capacity of health systems to prepare and adapt to climate-sensitive diseases. Integration of multiple surveillance systems (e.g. disease surveillance and weather surveillance) can improve the use of information for detecting, investigating and responding to public health threats. Health early warning systems aim to anticipate risks by predicting outbreaks of climate-sensitive diseases and triggering effective early warning responses to avoid or reduce impact. Importantly, climate-informed surveillance enhances the preparedness of health systems.

This outcome sets the ambition for universal coverage of climate-informed health surveillance and early warning systems by 2030. This aspirational target was defined to be aligned with the ambition of the global [Early Warnings for All Initiative](#) aiming to ensure everyone on Earth is protected from hazardous weather, water, or climate events through early warning systems by 2027.

CASE STUDY:

The WHO Climate Change and Health Unit is supporting a number of countries to implement the Early Warning and Response System ([EWARS](#)), a predictive model developed by the University of Gothenburg in collaboration with the University of Umea and WHO Special Programme for Research and Training in Tropical Diseases (TDR). This model is being piloted to predict outbreaks of dengue, chikungunya, zika, and in some cases, malaria, diarrheal diseases and cholera through the integration of health and weather/climate surveillance data. The Ethiopian Public Health Institute (EPHI) has piloted the model, using climate, weather and health data to identify disease hotspots and predict outbreaks of malaria in 47 districts. This will be expanded nationally and, in the future, to other diseases.

OUTCOME 4:

Increase financing flows to build climate-resilient health systems

Crucially, the climate-health nexus remains critically underfunded. As mentioned previously, many countries have identified insufficient finance as one of the main stumbling blocks to fully implement their national health and climate change plans. This climate-health financing gap threatens the lives of millions, leaves health systems without critical support, and deepens global health inequities.

For this year's edition of the SAA report, no concrete targets or metrics are adopted. Further consultations and analysis needs to be done to set aspirational yet achievable targets on finance flows for climate-resilient health systems.

Partner Spotlight: WHO provides [technical guidance](#) and country support to access international climate funds for implementation of health-relevant adaptation and mitigation actions. In addition, the [ATACH Working Group on Financing](#) the health commitments on climate resilient and low carbon health systems is supporting countries towards:

- ▶ Reducing barriers to funding by delivering a shift in the international financial architecture available for climate change and health
- ▶ Map funding and financing needs and opportunities on climate change and health, including for the provision of technical support to countries

2.5 HUMAN SETTLEMENTS SYSTEMS

SAA Task Force, co-led by ICLEI and UN Habitat drove progress assessment for this system, with active participation of Habitat for Humanity International, Extreme Heat Resilience Alliance (EHRA), Roof Over our Heads (ROOH), UN Environmental Program (UNEP) and the French Solid Waste Partnership



SYSTEM-LEVEL PROGRESS

Urbanization is a rapidly advancing phenomenon, with the current urban population standing at 4.2 billion people and an estimated increase of 2.5 billion by 2050. Over 90% of this growth will take place in Africa, Asia and Latin America and the Caribbean¹. Human settlements, particularly cities, serve as robust catalysts for economic development. However, cities in the global south are generally characterized by expanding informal settlements, infrastructure and public service deficits, high rates of unemployment and weak local formal economies. These attributes pose multifaceted challenges, and subnational urban authorities are perpetually confronted with complex decisions regarding prioritization of resources for urban progress.

Cities are already vulnerable to the advanced impacts of climate change, which also exacerbates existing vulnerabilities. For example, the devastating effects of climate events in 2023 such as Storm Daniel, washed away 25% of the City of Derna in Libya, and cyclone Freddy impacted at least 175,000 people in Quelimane, Mozambique. Climate change is introducing a layer of complexity to existing urban challenges, compounding existing vulnerabilities. For instance, inadequate solid waste management, which is not directly driven by climate factors, can lead to blocked drains, significantly increasing the risk of flooding.

¹ Nairobi Work Programme, [The UNFCCC knowledge-to-action hub for climate resilience and adaptation](#)

PLANNING & POLICY

Cities are increasingly emphasizing the importance of adaptation due to their frontline position in the climate crisis. Subnational advancements have been achieved in the realm of planning & policy, with numerous cities now undertaking comprehensive, science-driven climate adaptation plans or strategies. However, further action is still needed to ensure even more cities, particularly in the Global South, develop data-driven adaptation and resilience plans. For more details about progress of urban planning, please refer to the [Planning & Policy chapter](#).

However, urban planning at a subnational level cannot happen in isolation and needs to further align with national government plans, strategies and policies through multi-level governance. Improved multi-level governance is vital in ensuring that all tiers of government have clear roles, responsibilities, mandates, capacity and resources to drive scaled action via updated Nationally Determined Contribution (NDCs) and National Adaptation Plans (NAPs). Currently, local climate action in cities is supported by capacity building and technical assistance with Race to Resilience partners such as ICLEI, C40, CDP, UNEP and GCoM, ensuring their work is recognized and showcased at the highest level. For the first time, COP27 through Sharm el-Sheikh Implementation Plan decision² gave cities and local governments the encouragement they need to be formally recognized as key in achieving global climate action goals across sectors by including specific references to the importance of multilevel governance in achieving a successful global climate response. COP28 will build on this milestone to further emphasize the importance of multi-level climate action and recognize the critical role of local leaders in the COP process.

Efforts to enhance the resilience of human settlements should extend beyond urban boundaries, fostering collaboration and integrated planning and implementation of climate solutions that acknowledges the symbiotic relationship between urban and rural spaces. Beyond the city limits, the influence of surrounding rural and peri-urban areas plays a pivotal role in shaping the resilience and sustainability of urban territories. These hinterlands are not merely sources of resources but integral components of the intricate web that sustains urban life. For instance, the interdependence of urban and rural areas is evident in crucial aspects like food and agriculture, water supply, and the preservation of natural ecosystems that provide precious ecosystem services and disaster risk reduction.

2 UNFCCC decision 1/CMA.4

Access to finance remains a primary challenge in the transition from urban planning to implementation, and addressing this challenge can be facilitated through enhanced multi-level governance. Cities, municipalities, and subnational governments often face hurdles in securing the necessary financing to move their projects from the planning phase to implementation. For instance, the [2022 Africa Snapshot](#) from CDP revealed that 53 cities across 22 African countries reported a total of 181 projects for the years 2021 and 2022. These projects are worth US\$8.8bn in total and require an investment of US\$3.7bn to progress into the implementation phase. However, this self-reported investment figure underestimates the true funding needs of African cities, especially when considering infrastructure investments.

FINANCE

The primary obstacle in securing financing is the disparity between requirements of funders and the financial needs of subnational governments. Many cities in the Global South lack the necessary credit-worthiness to access certain funds, and they often struggle with the technical capacity to develop high-quality projects and suitable financial mechanisms. Multi-level governance is essential in addressing these challenges. It can facilitate increased access to a wider range of funding sources at the local level, bridging the gap between bottom-up project proposals and financial resources, and ultimately accelerating the implementation of vital urban initiatives.

However, global initiatives are increasingly emerging to provide support and facilitate the mobilization of climate finance at the city level. Notable examples include:

- ▶ [ICLEI's Transformative Actions Program \(TAP\)](#)
- ▶ [RISE-UP: Resilient Settlements for the Urban Poor](#)
- ▶ [Cities Alliance](#)
- ▶ [The City Climate Finance Gap Fund](#)
- ▶ [Alliance of Sub-national Development Banks](#)
- ▶ [ICLEI's initiative: Amazon for Climate, Green Finances for Local Governments](#)
- ▶ [The African Cities Water Adaptation \(ACWA\) Platform](#)

CASE STUDY:

The African Cities Water Adaptation Platform (ACWA) is an African coalition of 25 cities, city networks, water sector organizations, research institutions and grassroots organizations representing informal settlement dwellers, working together to build water resilient cities in Africa. Led by the World Resources Institute (WRI), the Platform has provided technical assistance to three of its member cities, that has unlocked over US\$20m that shall be used to implement urban water resilience projects. The projects will include urban river catchment/ restoration as well as critical micro-catchment restoration in cities in Ethiopia, Rwanda and South Africa.

KNOWLEDGE & CAPACITY

Other initiatives are actively contributing to capacity building and knowledge sharing on crucial urban resilience topics.

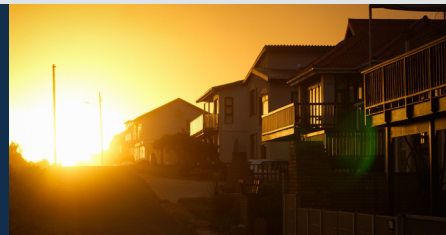
CASE STUDY (COP27 Initiative):

The SURGe Initiative has been developed under the leadership of the COP27 Presidency in collaboration with UNHabitat and facilitated by ICLEI SURGe serves as a convening space that brings together governments, international organizations, city networks, the private sector, academia and individuals for improved collaboration between sectoral initiatives to empower ambitious multi-level climate action. All with the objective to build more strategically on cities and sustainable urbanization as allies to help deliver the targets of the Paris Agreement and the SDGs. By 2023, more than 180+ partners have endorsed the initiative. It was also anchored in a resolution on “Enhancing Interlinkages between Urbanization and Climate Change” at the second UN-Habitat Assembly. Work packages for operationalization will be presented in early 2024.

OUTCOME-LEVEL PROGRESS

OUTCOME 1:

1 billion people have better design, construction and access to finance to live in decent, safe homes



Climate impacts hit the most vulnerable families and homes around the world significantly hardest, especially those living in informal settlements. The World Bank finds that the effects of disasters and climate change are over twice as severe for poor households compared to others. In part, this is because they often live in vulnerable areas with inadequate building standards and limited access to financial resources. According to the latest SDG 11 progress report, 2.8 billion people in the world experience some form of housing inadequacy, of those, 1.1 billion people live in slums and informal settlements¹.

This means at least 1 in 4 people living in cities currently live in housing that is harmful to their health, safety, or prosperity². These households are faced with poor quality of housing, at-risk locations, and unreliable urban services all of which limits their adaptive capacity and increases their vulnerability to climate change. In fact, residents of informal settlements are part of the estimated 3.3-3.6 billion people in hotspots of high vulnerability to climate change³.

Curbing the global housing deficits of the most vulnerable is imperative to achieve this outcome. Not only does the world need as many as 100,000 homes per day through 2030 to meet the expected need and the accumulated deficit⁴, but it must also do so in affordable ways that are climate resilient and that use circular approaches. Efforts that promote better policies and improve construction and upgrading practices such as enforcing energy codes and incorporating passive cooling, while far from enough, are advancing. **Strategic initiatives driving progress for this outcome include:**

- ▶ [Roof Over Our Heads \(ROOH\)](#) is a campaign to draw urgent attention to the vulnerable conditions of poor households in the Global South, particularly those

1 UN-Habitat, [Rescuing SDG 11 for a Resilient Urban Planet](#), 2023

2 UN-Habitat, [World Cities Report 2020: The Value of Sustainable Urbanization](#), 2020,

3 UN-Habitat (2023). [Nature-Based Solutions to Build Climate Resilience in Informal Areas Strategy Paper](#), 2022

4 UN-Habitat, [Rescuing SDG 11 for a Resilient Urban Planet](#), 2023

living and working in informal settlements to create resilient alternatives to face the extreme weather conditions of extreme heat, torrential unseasonal rains and high wind speeds. The campaign, and its labs, are working with women's collectives to build partnerships with engineers, architects, planners, construction material providers, finance providers, city officials and mayors and grassroots social movements to make an impact on the lives of the one billion people currently living in informal settlements.

- ▶ [Extreme Heat Resilience Alliance \(EHRA\)](#) aims to address the growing threat of extreme heat in communities worldwide, with a focus on protecting the people particularly vulnerable to dangerous heat impacts. Together and as individuals, EHRA members drive innovative extreme heat initiatives aimed at reaching millions of people. For example, Arsht-Rock, EHRA's founder, aims to reach 1 billion people with climate resilience solutions by 2030, with a strong focus on extreme heat. EHRA members have worked through Working Groups focused on educating decision-makers linked to vulnerable communities about risks and impacts of extreme heat, developing policy recommendations for effective heat-risk-reduction interventions, creating tools to support heat-resilience measures, and exploring innovative financial and risk transfer approaches to preparing for heat.
- ▶ [Decent Life Initiative for a Climate Resilient Africa](#) was launched as one of the COP27 Presidential Initiatives. It embodies a vision of improving the quality of life in impoverished rural communities across Africa in a climate sensitive manner. More precisely, to improve the quality of life for about 30% of the most vulnerable and poorest villages in the continent by 2030. The initiative will harness the power of partnerships and knowledge exchange in addressing such complex challenges. The focus on action is structured on three main pillars: building a climate-resilient enabling environment, fostering South-South cooperation for climate resilience, and supporting innovation and climate resilient livelihoods.
- ▶ [Build Change's Climate Resilient Housing Initiative](#) is working to enhance the resilience of 10 million people by 2030. The initiative focuses on improving the resilience of both new and existing housing, enabling them to withstand disasters and climate hazards while reducing the carbon footprint of the housing sector. By the end of 2022, this initiative had already improved the resilience of 1 million people.

- ▶ Habitat for Humanity International's [Home Equals](#) campaign, a five-year global advocacy campaign dedicated to achieving policy change, at all levels, to ensure that 15 million people living in informal settlements have equitable access to adequate housing.
- ▶ Reall's [Green Affordable Housing Finance](#) (GAHF) is an example of an innovative approach to scale the delivery of safe and quality housing in emerging market cities, contributing to Reall's goal of improving the lives of 100 million people by 2030. GAHF was developed in conjunction with the [Global Innovation Lab for Climate Finance](#) to unlock financing for the delivery of green, resilient homes in urban Africa and Asia and the purchase of those homes by families previously unreachable by formal housing finance.

CASE STUDY (COP27 Initiative):

ECOVERSE aims to enhance the wellbeing of rural communities in Africa by establishing climate-smart villages across the continent. Using [AAI Climate Resilient and Inclusion Fund](#), which operates as a blended finance mechanism, the program set a goal to mobilize US\$1bn. This funding will support the creation of 100 climate-smart villages in Africa by 2030. ECOVERSE contributes to COP27 Decent Lives for a Climate Resilience Africa and focuses on:

- ▶ Constructing climate-resilient housing for local communities.
- ▶ Developing infrastructure related to water, health, and nature.
- ▶ Establishing centres to enhance adaptive capacity and facilitate adaptation planning.
- ▶ Creating facilities for climate-resilient high-value agricultural production and processing
- ▶ Providing financial literacy training and financial services.



Despite these efforts, major shifts in urban policy and investments are still needed to accelerate progress for this outcome. Targeting the housing deficits means understanding that the needs are larger than any one stakeholder alone can take on. The World Bank's International Finance Corporation estimates the adequate housing financing gap is US\$16 trillion dollars⁵. For such major transformations to happen, alignment of the Paris Climate Agenda, Sustainable Development Goals, the Sendai Framework for Disaster Risk Management, and the Addis Agenda for Development Financing, are instrumental.

OUTCOME 2:

Multi-hazard early warning systems have universal coverage



Multi-hazard Early Warning Systems (MHEWS) are a proven, cost-effective climate adaptation solution that not only save lives but also deliver significant return on investment, estimated to be at least ten-fold. These systems are often considered the “low-hanging fruit” for climate adaptation because of their relative affordability and effectiveness. According to The Global Commission on Adaptation, providing just 24 hours of notice can reduce ensuing damages by up to 30%, and investing a modest US\$800m in such systems in developing countries could prevent annual losses ranging from US\$3-16bn.

Yet, one third of the world's population, mainly in least developed countries and small island developing states, is currently not covered by MHEWS⁶. The recent Global Status of Early Warning Systems report by the United Nations Office for Disaster Risk Reduction (UNDRR) and the World Meteorological Organization (WMO) revealed that only half of the countries worldwide report having adequate MHEWS, and even fewer have regulatory frameworks that effectively connect early warnings to emergency response plans. Achieving universal coverage of these systems is a vital step in enhancing global resilience to climate-related hazards.

At COP27, a pivotal initiative known as the [Early Warnings For All Initiative \(EW4All\)](#) was launched to serve as an overarching framework for various early warning initiatives and to drive global implementation.

⁵ IFC, [Building a sustainable future: Affordable green housing in emerging markets](#), 2023

⁶ UNDRR, WMO, [Global status of multi-hazard early warning systems: Target C](#), 2022

This initiative was introduced by the UN Secretary-General with the ambitious aim of ensuring protection of every person on Earth through comprehensive early warning systems by the year 2027. Globally co-led by World Meteorological Organization (WMO) and UNDRR, EW4All is structured around four key pillars, each coordinated by respective organizations: Pillar 1 (Disaster risk knowledge) by UNDRR, Pillar 2 (Observations, Monitoring & Forecasting) by WMO, Pillar 3 (Dissemination and Communication) by ITU and Pillar 4 (Preparedness to Respond) by IFRC.

The EW4All initiative has entered its rollout phase, commencing its efforts in an initial group of 30 at-risk countries, with a specific focus on Small Island Developing States and Least Developed Countries. During this phase, the Initiative is actively assisting countries in several critical ways, including:

- ▶ Facilitating stakeholder mapping
- ▶ Organizing national consultative workshops
- ▶ Conducting gap analysis
- ▶ Identifying key gaps, needs and priorities
- ▶ Developing national roadmaps to scale implementation of early warning systems

Key actions and outcomes include:

- ▶ Holding national consultative workshops and developing gap analyses and roadmaps in 12 countries by end-2023
- ▶ In Africa, the African Union (AU), in collaboration with regional organizations, aims to launch its Africa Multi-hazard Early Warning and Early Action System (AMHEWAS) programme within regional economic communities and Member States by 2030.
- ▶ In Southern Africa, the adoption of the Maputo Declaration at the ministerial level in September 2022 aims to create a regional blueprint for implementing EW4All. In the Caribbean, the Caribbean Regional Early Warning System Consortium is committed to developing programs to strengthen (MHEWS), including the formulation of a Strategic Roadmap for Advancing MHEWS in the Caribbean from 2020-2030. The [EW4ALL Executive Action plan \(2023-2027\)](#) provides in-depth details on the programmatic approach of the initiative and establishes the baseline for MHEWS at the global level.

CASE STUDY:

Aiming to lessen the impacts of the climate crisis by increasing people's resilience, DARAJA started the implementation of an innovative initiative, which seeks to provide the local community of Tuti Island, Khartoum (Sudan) forecast information and early warning system services for urban areas. The DARAJA platform and application builds and supports a community network of users in accessing information and taking early action. Similar initiatives are also being piloted in Nairobi, Kenya and Dar Es Salaam, Tanzania, aiming to improve the climate resilience of vulnerable populations living in informal settlements.

However, the journey to bridge the gap in MHEWS calls for a significant increase in investments, totaling US\$3.1bn between 2023 and 2027. Encouragingly, there are promising signs in mobilizing funding to support this critical endeavor.

More investments are needed for developing and improving MHEWS infrastructure capacity, enhancing preparedness and building capacity for dissemination and communication of warnings globally, with emphasis on reaching the “last mile”. Recent commitments were announced at the 2023 Climate Ambition Summit. These include:

- ▶ Joint commitment from all major Multilateral Development Banks (MDBs). Several are acting as [SOFF Implementing Entities](#).
- ▶ GCF's commitment to invest up to US\$1bn in MHEWS, with announcement of a first US\$150m global program.
- ▶ Full alignment of existing financing mechanisms and partnerships such as SOFF and CREWS.

Data availability and quality are also key challenges, as MHEWS can only be as good as the data underpinning them. In 2021, the [Global Basic Observing Network \(GBON\)](#) was established, committing all countries to generate and exchange basic

weather and climate data. However, today, less than 10% of these internationally agreed data are available from LDCs and SIDS⁷. These critical data gaps hinder the provision of high-quality climate services around the globe.

Many partnerships are in place to address these gaps. WMO, UNDP and UNED established the [Systematic Observations Financing Facility \(SOFF\)](#) as a UN multi-partner Trust Fund, to provide long-term technical and financial support to the countries with largest capacity gaps, to close their GBON data gap, with a special focus on LDCs and SIDs. The Early Warnings for All initiative also partners beyond the UN with the Red Cross and Red Crescent movement, civil society, Big Tech companies, donor governments, development banks, and the insurance sector to foster collaboration. Annual Multi-Stakeholder Forums are organized to enhance consultation and drive action with a wider group of partners.

OUTCOME 3:

US\$1 trillion invested in Nature-based Solutions for communities in urban areas



Urban areas, home to the majority of the global population and epicentres of socio-economic activities, face significant vulnerability to climate risks. Presently approximately 4 billion people, constituting 56% of the world's population, call cities their home. This number is projected to double by 2050⁸, highlighting the rapid pace of urbanization. Moreover, cities are responsible for a staggering 80% of the world's Gross Domestic Product (GDP), underscoring their pivotal role in the global economy⁹.

Nature-based solutions (NbS) stand as a transformative approach with the potential to fortify cities, rendering them more resilient, healthier and equitable. In addition to these benefits, NbS offer substantial carbon reduction benefits, making them a multifaceted asset in the battle against climate change. NbS present a cost-effective, long-term pathway for nurturing inclusive economic growth, while simultaneously shielding communities from the adverse impacts of climate change. They play a crucial role in mitigating hydrological risks, addressing land degradation, and bolstering the resilience of vital infrastructure investments.

7 UNDRR, WMO, [Global status of multi-hazard early warning systems: Target C](#), 2022

8 The World Bank, [Urban Development Overview](#)

9 The World Bank, [Urban Development Overview](#)

Policymakers are increasingly acknowledging the pivotal role of cities in achieving global environmental objectives, and this recognition is translating into concrete financial support. There is a notable upsurge in the willingness of national governments to allocate sovereign funds and international loans to local governments for the implementation of NbS. These investments are driven by a deepening understanding of NbS as a cost-effective and impactful means to attain both global and national climate targets. Notable examples¹⁰ include:

- ▶ China, through its Sponge City initiative, has invested more than US\$12bn in flood protection through NbS.
- ▶ The Global Environmental Facility (GEF) has invested US\$197mn in NbS in its Sustainable Cities program, a sum that has leveraged more than US\$3 trillion from multilateral development banks, and national and subnational sources.

However, there is still much to be done and urban funding of NbS needs to be substantially scaled up while prioritizing the most vulnerable. [The State for Finance for Nature in Cities 2023](#)

report estimates the annual finance gap as US\$230bn in 2025, increasing to US\$520m by 2050. Finance tracking overtime is difficult because NbS investments at the urban scale are nested in larger infrastructure projects and/or integrated into national or subnational budgets.

The report [Growing to its Potential](#) from RMI (Rocky Mountain Institute) launched in 2022 estimated urban nature investment around US\$32bn in 2022, showing the magnitude of the finance gap. **To bridge the financial gap, cities require both technical and financial support¹¹ to:**

- ▶ Restructure local governance to coordinate cross-department NbS efforts
- ▶ Upscale existing programs
- ▶ Improve alignment of national and sub-national priorities for NbS investment
- ▶ Develop a project criteria that incorporates NbS from inception to implementation

With additional capacity support, financial tools, and public advocacy, local governments can identify investment-ready projects, restructure administrative structures, reform regulations, and realign budgets to better incorporate NbS in city planning and management.

¹⁰ UNEP, [State of Finance for Nature in Cities: Time to assess, Summary for local policymakers](#), 2023

¹¹ Ibid

In the private sector, investments continue to predominantly focus on mitigation projects, and there is a growing recognition of the necessity for innovative financial models to make a compelling business case for and facilitate funding of NbS. A diverse range of financial mechanisms and strategies are required, including:¹²

- ▶ **Debt finance**, such as green bonds, a fast-growing mechanism in the bond market, which offers investors a recognizable vehicle for allocating capital toward sustainability commitments.
- ▶ **Blended finance** uses public or donor capital, which can accept lower returns, to take on higher-risk projects that encourage additional funding from the private sector. Blended finance, such as combining concessional and market-rate loans for disaster risk management strategies, provides risk-mitigation tools to address concerns around complexity or risks associated with NbS.
- ▶ **City-led policy frameworks**, such as land-based financing instruments (e.g. building rights fees or betterment levies), can generate revenues that support the financing of ‘green-gray’ infrastructure investment. Such a strategy requires sound, inclusive governance and transparent reporting processes.
- ▶ **Financial risk mitigation via insurance instruments** that gauge the benefits of NbS projects. Standardized models used in the insurance industry can simulate and price upfront estimates of NbS risk reductions, which can then be converted into overall project returns and revenue, helping to mainstream NbS concepts.
- ▶ **Diversification of funding streams** through revenue-generating models, such as endowment funds. Endowment funds can be invested into capital markets to provide returns for NbS project costs for planning, implementation, maintenance and monitoring and evaluation. **Expand impact investments in NbS for those most vulnerable** by deepening the reach of financial institutions in informal settlements and economies through increased use of localized socioeconomic and climate data as well as standard green taxonomies.

¹² WRI, [Nature-Based Solutions in Latin America and the Caribbean - Financing Mechanisms for regional replication](#), 2021

OUTCOME 4:

Improve social infrastructure and related services to ensure equitable and inclusive access to essential needs and resilience capacities



Social infrastructure (e.g., healthcare facilities, educational institutions, religious and cultural centres) **and related services form the essential backbone of human settlements.** These components play a pivotal role in daily life, providing vital services that contribute to the economic, social, cultural, physical and mental well-being of people and communities.

With the increasing frequency and intensity of climate hazards, social infrastructure and social services themselves are more exposed and at risk. For example, recurring flooding of schools or extreme heat can hamper education. Storms can wash out roads, impeding access to medical centres and disrupting hospital operations by causing power outages. This is doubly concerning when disaster hits, as these community spaces are often transformed into temporary shelters and provide sources of humanitarian relief. **Thus, there is an urgent need for solutions to climate-proof physical infrastructure (e.g., hospitals, schools), social services (e.g., physician networks), and to generally enhance the resilience capacities of communities.**

The development of climate-resilient infrastructure standards and solutions are increasing, helping define better design, construction methods or operational frameworks. For example, the WHO developed guidance for [climate resilient and environmentally sustainable health care facilities](#). Solutions exist to incorporate heat stress into the built environment and social protection programs such as integrating passive cooling and sustainable active cooling into public procurement, particularly for social housing, schools, hospitals and care homes.

Other solutions are available to build resilience of social services. For example, increasing the area and quality of green and blue spaces in urban areas will not only effectively combat heat stress but also support community gathering.

According to the [Oxfam Framework for Resilient Development](#), **The Future is a Choice, enhancing, adaptive, absorptive and transformative capacity will help achieve resilient development outcomes**, that is, the realization of rights and wellbeing in spite of shocks, stresses and uncertainty. Programme outcomes that indicate that these capacities have been strengthened include:

- ▶ Adaptive capacity: social networks are accessible, equitable and innovative and have strong and diverse participation (e.g. self-help groups, savings groups).
- ▶ Absorptive capacity: social protection schemes (particularly those focussed on insurance), and safe mechanisms of remittance transfer are protecting assets and maintaining financial capital.
- ▶ Transformative capacity: Women and men are making conscious changes to gender based power structures at the household, community and institutional level.

For this year's edition of the SAA report, no concrete targets or metrics are adopted. Further consultations and analysis needs to be done to set aspirational yet achievable targets on social infrastructure and related services.

CASE STUDY (Cities RtR):

Peñalolén's community health corporation executes an annual program to prevent the proliferation of cardio-respiratory diseases in the community, focused on winter, especially aimed at the most vulnerable or disadvantaged population, in addition to the population at risk. This also includes emergency dormitories (winter shelters) in municipal spaces for homeless people.



OUTCOME 4:

Increased municipal solid waste recovery and management in controlled facilities to reduce open burning by 60% while including the informal waste sector

Municipal solid waste generation is increasing globally and poses significant threats to building resilience of populations, particularly for low to middle income countries. The world generates at least 2.01 billion tonnes of municipal solid waste annually, looking forward, global waste is expected to grow to 3.40 billion tonnes by 2050¹³. Low-income and lower-middle-income countries are anticipated to experience the greatest increase with rapid economic growth and urbanization. Poorly managed waste can lead to health risks through the spread of diseases and contamination of water sources. A surge in waste generation can also overburden waste management infrastructure and services, resulting in inefficiencies, delays and reducing the ability to respond effectively to extreme climate events. In addition, mismanaged solid waste is often transferred to the aquatic environment, triggering pollution and biodiversity loss, which negatively impacts the resilience of ecosystems.

Open waste dumping is still frequent in low to middle income countries leading to open burning practices or aquatic environment pollution. Overall, at least 58% of solid waste generated is not disposed properly (e.g., open dump, non sanitary landfill). This percentage can go up to 66% and 93% for lower-middle income and low-income countries respectively¹⁴, often leading to open burning practices. Emissions from open burning of waste have direct and indirect health impacts on populations (e.g., pollution of soil, groundwater and air, explosions) in addition to increasing the risk of wildfires.

Africa is taking the lead to eliminate open waste burning. A multi-stakeholder partnership (MSP) led by the Africa Ministerial Conference on Environment (ACMEN) was launched to eliminate open burning of waste in Africa, co-hosted by the United Cities and Local Governments of Africa (UCLGA), Climate Champions and Engineering X. The objective is to phase out open burning of waste in Africa by 2040 and was adopted by 54 African Ministers.

In 2023, the MSP mobilized US\$600,000 to fund 16 global open waste burning pilots, six of which are in Africa with pilots in Benin, Uganda, Senegal, Malawi and Nigeria. In addition, the [Climate and Clean Air Coalition](#) funded US\$1.3m for global transformative action in the waste sector and to build on the political momentum to encourage the scaling up of implementation of the elimination of open waste burning.

13 The World Bank, [What a Waste 2.0 report: A Global Snapshot of Solid Waste Management to 2050](#), 2020

14 The World Bank, [What a Waste 2.0 report: A Global Snapshot of Solid Waste Management to 2050](#), 2020

CASE STUDY:

Improving human health and livelihood through reducing open burning waste in Senegal.

Practical Action working in partnership with Ecole Polytechnique de Thiès (EPT) and the National Company for Integrated Waste Management (SONAGED) is tackling the [waste-burning issue](#) in Senegal two major dumpsites: the infamous Mbeubeus site in Dakar, and another in Thiès. This project launched in 2022 is part of a £450,000 seed funding to [sixteen organizations and projects worldwide over two years](#) which seek to raise awareness of the challenges and [opportunities](#) from open waste burning, and actions by [African and global stakeholders](#). The pilot aims to address the pressing issue of waste management on a large scale, bringing non-party actors together to curb waste mismanagement and enhance circularity. This is anchored in all Africa Environment Ministers' pledge in 2022 to eliminate Open Waste Burning by 2040 through an [African Ministerial for the Environment \(AMCEN\) Decision 18/1\(b\): Towards phasing out open burning of waste in Africa](#).



The integration of the informal waste sector will be a key challenge to ensure a just transition and achieve this outcome. Waste pickers and recyclers play a significant role in recovering valuable materials from the waste stream. Their activities help increase recycling rates and reduce the volume of waste being dumped or burned. The informal waste sector provides livelihood opportunities for marginalized and economically disadvantaged individuals, helping to lift people out of poverty and improve their quality of life. This is also an opportunity to enhance their working conditions and increase safety. In addition, this integration will provide more visibility on waste recycling streams and data for an enhanced reporting at the city and national level.

Other challenges to achieving this outcome are the lack of waste management infrastructure in the Global South and the large amount of waste shipped from developed countries to developing countries. Limited financing, conflicted priorities and lack of planning lead to inadequate waste services for low to middle income countries. In addition, these countries continue to receive large amounts of waste generated in the Global North, often non-recyclable packaging or poor-quality textiles that are difficult to treat with the current infrastructure while creating more emissions from shipping.

ADDITIONAL THEME: BUILDING URBAN WATER RESILIENCE

Sharm el-Sheikh Adaptation Agenda (SAA) and the COP28 Presidency, will launch a new working group on urban water resilience. This technical working group aims to integrate non-party urban water sector actors into global climate actions, setting shared 2030 targets. It seeks to enhance collaboration among city stakeholders and bridge city networks with national Parties. The objective is to foster the role of local and regional entities in national climate planning, including NDC and NAP enhancement. The group plans to:

- ▶ Identify existing initiatives that can support increased urban water resilience and create a toolkit or guidance document around several relevant sub-themes such as climate resilient sanitation, inclusive governance, public-private partnerships, or blended finance.
- ▶ Develop the “toolkit” of solutions/guidance/resources document in SAA implementation reports and updated on a regular basis to reflect updates to consolidate efforts.
- ▶ Utilize the guidance to develop common targets for urban water resilience under the SAA for 2030.
- ▶ Explore the opportunities to hold additional dialogues or workshops with Parties during future UNFCCC meetings such as the regional climate weeks, Adaptation Forums, NAP Expos, etc.

2.5 INFRASTRUCTURE SYSTEMS

SAA Task Force, co-led by IRENA for Energy and SLOCAT/OECD for transport, drove progress assessment for this system, with active participation of ICSI and UNEP



SYSTEM-LEVEL PROGRESS

Energy and transport infrastructure forms the backbone of our society and economy. Transport infrastructure - such as railways, roads, subways, ports, etc. - and energy infrastructure - such as power plants, transmission infrastructure, energy storage, etc. - are essential to ensure people have access to vital services such as mobility, healthcare, fresh food, communications, and to ensure people can build and maintain their livelihoods.

The impacts of climate change can disrupt critical energy infrastructure and services in urban and peri-urban areas, affecting the energy supply. Further, energy generation consumes water, a resource which will become more scarce and which can be leveraged as an asset to build climate resilience. **In the realm of transitioning energy systems, the most viable adaptation measures focus on enhancing infrastructure resilience, ensuring reliable power systems, and promoting efficient water use in both existing and new energy generation facilities.**¹

Transport infrastructure is a highly complex network of interconnected assets, service providers (e.g., highway operators, ports), and supporting infrastructure (e.g., telecom, energy) which rely on one another to ensure smooth functioning of the system. This essential infrastructure is heavily exposed to changing climate conditions and climate hazards. Its exposure can lead to physical damage, which poses the potential for rippling negative impacts on society, economy and the environment. Damage to assets disrupts operations and supply chains, impacting economic and societal resilience.

¹ IPCC, [Climate Change 2022: Impacts, Adaptation, and Vulnerability](#); 2022

Ensuring resilient transport infrastructure, as well as increasing access to affordable mobility and services solutions, are two critically important levers to build climate resilience for people². While there have been notable achievements on the energy front, there are significant challenges to overcome to meet the goals outlined in the outcomes. For example, progress towards universal access to affordable, reliable, sustainable, and modern energy is behind schedule, with an annual growth rate that must double to meet the 2030 target³. Also, clean cooking investment has seen a recent surge, but it is still far from the goal of at least US\$8bn per year⁴. The sector faces a significant capital gap and limited scalability of businesses. **Investment, infrastructure development, and policy support are essential to accelerate progress and ensure access to affordable, reliable, sustainable, and modern energy services for all.**

Very little progress has been made to build resilient transport infrastructure and increase access to mobility for goods and people. An estimated 30% of global rails and roads are currently exposed to extreme flooding and cyclones, and yet very few infrastructure companies consider climate-induced risks in their operations⁵. The World Bank estimates that around 1 billion people⁶ still live more than 2 km away from a usable, all-weather road. An additional challenge is to ensure communities, especially in the developing world, gain access to mobility at a much lower climate footprint. **Progress needs to accelerate** to ensure that people, especially in the developing world, have access to clean, affordable transport options, and to ensure that transport infrastructure globally (new and existing) is made resilient to climate shocks.

POLICY & PLANNING

Transport and energy are not strongly represented in countries' planning efforts for adaptation and resilience. Even though 94% of countries include transport in some way in their NDCs, these still mostly relate to decarbonization of transport, and not to climate resilience. Only 27% of NAPs submitted to the UNFCCC (13/47) mention transport as a key sector for resilience. For energy, the same holds true: energy is prominent in a mitigation context, yet only 48% of NAPs include energy as a key sector.

2 HLC, BCG, Building for the future: adaptation & resilience in land transport infrastructure, 2023

3 IRENA, [World Energy Transitions Outlook 2023: 1.5°C Pathway](#), 2023

4 WEF, Why investment in clean cooking is falling short, 2023

5 HLC, BCG, Building for the future: adaptation & resilience in land transport infrastructure, 2023

6 World Bank, [Transport](#); 2023

Translation of NAPs into concrete, localized actions and projects has been insufficient for all A&R-related systems, but the highly constrained and complex nature of the transport and energy industry further complicates effective implementation⁷.

There is currently no common taxonomy and supporting metrics, as well as a lack of standards and guidelines, to define, build, and operationalize resilience in the transport sector. A common taxonomy for resilient infrastructure, including consensus on metrics and acceptable risk-thresholds, can enable global goal-setting, accelerate investment and support multi-stakeholder coordination. Currently there are several definitions from different players (e.g., OECD, CDRI, World Bank) which focus on different dimensions. Additionally, there is a need for standards and guidance for different stakeholders in the transport infrastructure space on how to make assets climate resilient. Service providers and construction companies need to understand how to integrate A&R considerations into planning, design, procurement, construction and maintenance/utilization of infrastructure assets. For example, decisions related to A&R along the infrastructure project life cycle often have highly positive business cases when these integrate technical assessments on physical climate risks and their direct and indirect costs of inaction, yet there is a need for a standardized methodology to include these assessments into decision-making processes⁸.

For transport, governments need to pave the way in this challenging environment by strengthening integrated planning efforts, and devising policies and regulations that provide the right incentives to different actors along the project lifecycle. For example, national planning efforts need to be concretized into localized, inclusive and bankable infrastructure projects, with funding ensured by deploying public funds and incentivizing other sources of capital with different risk profiles. Guidelines, standards and tools need to be developed that facilitate collaboration and guide stakeholders towards best practice solutions. Policy and regulation needs to be devised that incentivizes infrastructure players to include resilience measures into new infrastructure projects, and undertake retrofitting/maintenance operations for existing infrastructure, and more.

For energy, mainstreaming adaptation strategies into national energy planning is vital for a sustainable energy transition. With the increasing share of renewables in electricity generation, it is crucial that adaptation strategies are included at the

7 NAP Global Network, [NAP Trends](#), Accessed 17 November 2023

8 HLC, BCG, Building for the future: adaptation & resilience in land transport infrastructure, 2023

planning stage. Additionally, integrating adaptation and mitigation efforts can yield co-benefits and reduce potential conflicts. Please refer to outcome 3 below for further elaboration.

CASE STUDY:

The Maritime Resilience Breakthroughs, launched at COP 27, provide a consolidated action agenda to future proof the maritime sector. The effort makes maritime the first sector to present a complementary mitigation and resilience framework. At COP 28, the agenda expects to assess progress and present a first toolkit.



FINANCE

Annual funding for transport infrastructure needs to increase 1.5x by 2030 to deliver the infrastructure required to meet the SDGs, including SDG 11.2 which specifies access to safe, affordable, accessible and sustainable transport systems for all, highly interlinked with SAA infrastructure outcome 4. The Global Infrastructure Outlook specifies an estimated annual funding of US\$2.4 trillion for rail, road, sea and air transport infrastructure by 2030, vs. current annual funding levels of around US\$1.6 trillion, implying a 1.5x needed increase⁹.

Current A&R funding levels for transport fall dramatically short of projected needs, and growth needs to accelerate urgently to ensure climate resilience of transport systems. Current A&R investment in transport (CPI, 2021) amounts to US\$1.5bn¹⁰ per year, which represents only 2% of overall A&R funding, and less than 1% of total climate funding for the transport sector. There is less consensus on a projected funding need for A&R-related investments in transport infrastructure given the lack of a clear definition of what resilient transport infrastructure entails, and given the fact that A&R-related transport investments often come on top of an already existing investment need for new projects, or occur as maintenance/retrofitting costs for existing infrastructure. As an indication, given total investment needs for transport to meet the SDGs is US\$2.07 trillion in 2030, and given the

⁹ G20, [Global Infrastructure Outlook](#), Accessed 17 November 2023

¹⁰ CPI, [Global Landscape of Climate Finance](#), 2023

estimated 'top-up' cost of A&R measures for infrastructure projects is 3%¹¹, this would imply an annual global cost of around US\$71bn in 2030, which implies a 45x required increase only for A&R investments related to new projects.

Growing A&R-related funding for transport infrastructure projects faces challenges that are inherent to resilience projects, further enhanced by the complex nature of infrastructure projects. For example, transport infrastructure projects provide wide-ranging benefits to society, beyond the direct financial returns that service providers are able to capture. Integrated planning for transportation infrastructure needs to take into account all costs and benefits, including socio-economic value creation and cost-of-inactions which result from climate-induced shocks, to create a compelling business case. A general lack of data and information on climate risks, impact scenarios, and a broad range of socio-economic variables (e.g., poverty, water access), especially in developing countries, further complicates this challenge. Second, infrastructure projects generally have high levels of upfront investment, which are uncertain and often increase throughout the procurement and construction phase, and rather long-term payback horizons, which is generally not aligned with the risk-return profiles of many funders¹².

The global grid investments to increase energy systems' resilience, while also enabling large-scale mitigation, must nearly double by 2030 to US\$605bn per year to accommodate renewable energy growth and enhance grid resilience.

Current annual funding levels stand at US\$274bn, as reported by IRENA WETO 1.5¹³, indicating a notable gap between current investments and the target. Please refer to outcome 1 below for further elaboration.

CASE STUDY:

The Catalytic Capital Fund, closed by The Rockefeller Foundation and the Private Infrastructure Development Group (PIDG) as part of the Urban Resilience Fund initiative (TURF), is designed to support African cities in building commercially viable infrastructure projects for climate resilience, and mobilizing up to €10B in private investment for these projects. The projects will be developed in the clean mobility, energy transition and environment, and social infrastructure sectors.

11 World Bank, [Lifelines: the resilient infrastructure opportunity](#), 2019

12 HLC, BCG, [Building for the future: adaptation & resilience in land transport infrastructure](#), 2023

13 IRENA, [World Energy Transitions Outlook 2023: 1.5°C Pathway](#), 2023

KNOWLEDGE & CAPACITY

Workforce availability in general is a major constraint in the construction industry, but a lack of A&R expertise in specific presents a critical constraint to planning for and implementing A&R across the project lifecycle. Some of the underlying drivers are inherent to the industry, such as an aging workforce, low job attractiveness, lack of targeted investments in talent, etc. Yet, the lack of technical capacity also relates to a gap in the education system. For example, only 30% of top 30 engineering universities globally include climate adaptation and resilience in the curriculum. Key stakeholders, including service providers and authorized national and subnational governments, need to invest in technical resources to integrate A&R considerations in decision-making.

OUTCOME-LEVEL PROGRESS

OUTCOME 1:

Transmission and distribution grids' resilience to extreme events is increased and flexibility is enhanced to accommodate varying daily, seasonal, and inter-annual patterns of demand. Global grid investment nearly doubles by 2030 to over \$600 billion per year, including 359 GW of battery storage capacity.



The proliferation of solar and wind energy remains at the heart of the global shift towards renewable energy, critical to meet renewables targets and enable the electrification of end-use sectors. For example, IRENA's 2023 outlook projects annual Solar PV capacity additions to increase from 191 GW to 615 GW by 2030, and wind additions from 75 GW to 329 GW by 2030¹⁴.

Climate change is causing a slew of disruptions worldwide, which are significantly affecting electricity systems, leading to large-scale power outages in many countries. The necessary expansion of transmission and distribution grids could heighten the exposure of these systems to the impacts of climate change,

14 IRENA, [World Energy Transitions Outlook 2023: 1.5°C Pathway](#), 2023

which calls for increased investment in maintenance, upgrades, and transitioning to more resilient options (e.g., enhanced cooling mechanisms, increasing connections for power re-routing, distributed energy resources, etc)¹⁵. Further, the increased demand for system flexibility, estimated to double between 2022 and 2030, is expected to increase due to both seasonal and multi-year variability, as a consequence of increasing shares of variable renewables. This underscores the importance of incorporating medium and long-term energy storage technologies into energy systems¹⁶.

To meet these targets and to increase the power sectors' resiliency, and enable this increasing renewable power generation, global grid investment needs to reach US\$605bn by 2030, emphasizing digitizing and modernizing distribution grids. **Grid investment needs to double from today's level of US\$274bn (5-year average to 2021) to reach the projected US\$605bn need¹⁷**. Further, storage capacity needs to grow to 359 GW by 2030 to facilitate this transition. Latest data from IRENA's WETO 1.5 shows 17 GW of battery storage capacity for 2020, **implying a 20x increase required to reach projected storage needs by 2030**. An additional metric for tracking the target of doubling flexibility is currently under consultation.

OUTCOME 2:

Regional power pool integration is scaled up to mitigate the potential negative impacts on supply and demand of hydropower due to increased precipitation variability, allowing for a growing complementarity of renewables sources.



Fully interconnecting power pools is a robust strategy to mitigate climate-induced changes in hydropower, especially amidst the increased precipitation variability. Harnessing the complementary nature of hydro and wind energy can be pivotal in this endeavor. For instance, during periods of heightened precipitation, hydropower generation typically surges. Conversely, wind energy might experience a dip due to associated weather patterns, and vice versa during dry spells.

15 IEA & IFC, Scaling up private finance for clean energy in emerging and developing economies, 2023

16 World Bank and OLADE, [Informe final: Evaluación del Impacto del Cambio Climático en la Generación Eléctrica en los Países del Cono Sur](#), 2023

17 IRENA, [World Energy Transitions Outlook 2023: 1.5°C Pathway](#), 2023

The integration of these renewable sources, along with enhanced interconnections among power pools, can contribute to a more stable and reliable energy supply. Coordinated planning for the expansion of regional power systems, information exchange, and strengthened integration, both physically and in terms of market dynamics, could lead to benefits that allow for a more efficient response to the implications of climate change, as a result of their complementarity¹⁸.

The proposed metric for this outcome is GW of capacity interconnected in power pools. The quantitative target is under consultation and will be featured in future editions of the SAA report.

CASE STUDY:

The West African Power Pool (WAPP) exemplifies this strategy with its plans aiming to augment regional generation capacity by 2.4 GW and interconnect 14 countries with 6109 km of high voltage transmission lines by 2025, primarily focusing on hydropower projects. This initiative could reduce power system operating costs by \$2.7 billion annually and cut GHG emissions by 70M tons every year, illuminating the substantial benefits of such interconnections and renewable energy integration across the African continent.



OUTCOME 3:

Adaptation of energy generation, transmission and distribution infrastructure is mainstreamed into national energy planning and scenarios at national and sub-national levels.

The mainstreaming of adaptation strategies for energy generation, transmission, and distribution infrastructure into national and sub-national energy planning is pivotal for a sustainable energy transition. Given the high levels of investment required to drive the growth of renewables over the coming years, it is critical that these projects **consider adaptation and mitigation efforts** from the beginning in

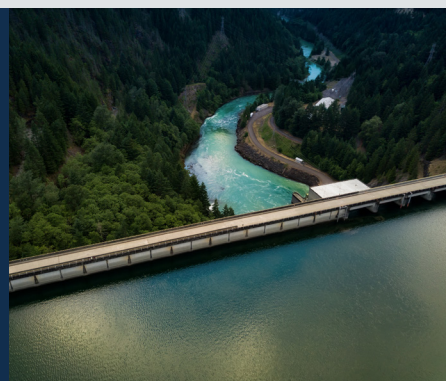
¹⁸ World Bank and OLADE, [Informe final: Evaluación del Impacto del Cambio Climático en la Generación Eléctrica en los Países del Cono Sur](#), 2023

the planning, financing and execution phases¹⁹. This can enhance co-benefits and minimize potential conflicts and ill-suited actions. For example, renewable energy enables energy-intensive adaptation solutions, such as air conditioning, desalination, and irrigation, with net-zero emissions, fostering “sustainable win-win” solutions that avoid trade-offs between mitigation and adaptation. Renewables also offer non-energy services that contribute to climate adaptation, enhancing resilience to climate change impacts. For example, solar shading under panels can improve food security, byproducts from biogas facilities can be used for organic fertilizers, and hydropower dams can support water harvesting²⁰.

The linkages between reliable, affordable, and modern renewable energy services with climate adaptation for other sectors has often been overlooked in policy and practice. A holistic approach is needed to integrate renewable energy into the climate adaptation process. This approach involves creating a clear climate rationale for embedding renewable energy technologies in adaptation policies and engaging multiple stakeholders to identify synergies, reduce costs, and improve project success. Cross-sectoral planning can maximize the impacts of renewable energy projects while encouraging financiers and stakeholders to invest in adaptation initiatives. Integrating renewable energy options into short- and long-term decision-making and planning processes is essential for scaling up adaptation projects. It can be achieved by creating an enabling environment for private investors, involving finance ministries in adaptation planning, and engaging international climate finance²¹. The proposed metrics for this outcome are **the number of national energy action plans including adaptation targets and the number of sub-national energy action plans including adaptation targets**. Further consultations are required to provide a baseline for these metrics, which will be featured in future editions of this report.

OUTCOME 4:

Affordable, reliable, sustainable, and modern energy access to electricity for 675 million unconnected people and higher quality access for 1 billion underserved people through climate resilient energy systems.



19 UNEP, [Adaptation Gap report](#), 2022

20 IRENA, [Bracing for Climate Impact: Renewables as a climate change adaptation strategy](#), 2021

21 IRENA, [Bracing for Climate Impact: Renewables as a climate change adaptation strategy](#), 2021

Recent advancements are not on track to achieve universal access to electricity by 2030. Globally, the percentage of the population with access to electricity increased by an average of 0.7 percentage points annually between 2010 and 2021, rising from 84% to 91%. While the number of people without electricity nearly halved during this period, reaching 675 million in 2021 (vs. 733 billion in 2020), the rate of growth slowed to 0.6 percentage points annually between 2019 and 2021. To bridge the gap, particularly for those in impoverished and remote areas, the annual growth rate in access should be 1 percentage point per year from 2021 onward, nearly twice the current pace. Without additional efforts, approximately 660 million people, primarily in Africa, would remain without electricity in 2030²².

The number of people without access to electricity reached 675M in 2021 (SDG7, 2023)²³. This 2021 data will be used as the baseline against which to measure progress in future editions of the SAA report. Data sources for tracking the number of people with low-quality access to electricity are currently under evaluation.

Progress varied across regions. The decline in the unserved population was most pronounced in Asia, particularly in Central and Southern Asia. In contrast, access improvements in Africa lagged behind population growth. Urban areas had better access than rural areas, with electrification in rural areas outpacing population growth in Central and Southern Asia but falling behind in Africa. Narrowing the urban-rural access gap requires understanding electricity usage and increasing public financing for affordability and infrastructure resilience²⁴.

To achieve modern and sustainable energy service goals, countries need to **establish an enabling environment that promotes investments, innovation, transparency, accountability, and local economic benefits.** Technological innovation and digitalization can reduce costs and improve efficiency throughout the energy value chain. **Public financing remains crucial** to ensure affordable access and support capacity building, planning, and market linkages for productive electricity use²⁵.

22 IRENA, [UNSD, World Bank, WHO, Tracking SDG 7: The Energy Progress Report](#), 2023

23 Ibid

24 Ibid

25 Ibid

CASE STUDY:

In refugee camps in Rwanda, increased access to cleaner and renewable energy has brought multiple benefits to thousands of refugee families and their hosts. UNHCR's installation of solar streetlights has improved mobility and safety for residents after dark, reduced crime and violence, and created business opportunities. Affordable, locally manufactured cookstoves have been made available for purchase, and 75 refugees have been trained as sales agents, technicians, and construction workers. More than 5,000 households have purchased the improved cookstoves, which have reduced burn injuries and respiratory problems and helped to reduce women's exposure to gender-based violence when they previously had to collect firewood.



OUTCOME 5:

2.4 billion people with access to clean cooking through at least USD 8 billion/year in innovative finance for clean cooking action worldwide.

Despite global advancements, nearly one third of the world's population, around 2.3bn people, continue to cook with rudimentary means, using open fires or basic stoves that emit harmful smoke. This practice leads to 3.7M premature deaths annually, affecting women and children disproportionately, particularly in Africa. A transition to clean cooking is required to improve health and wellbeing, but also to reduce emissions and deforestation²⁶.

Achieving universal clean cooking access by 2030 requires an estimated annual investment of approximately US\$8bn. **The annual funding for clean cooking reached a record high of US\$200m invested in 2022, as tracked by the Clean Cooking alliance, yet is still way below the US\$8bn target²⁷.**

26 IEA, [A vision for clean cooking access for all: World Energy Outlook Special Report](#), 2023

27 Ibid

Clean cooking investment increased at an annual rate of 20% from 2014 to 2020. Yet, at the current rate, funding would only surpass US\$1bn by 2036²⁸.

While Asia and Latin America have made progress in providing clean cooking access, **Africa has seen an increase in the number of people without access to clean cooking.** China, India, and Indonesia have made substantial efforts to reduce the population without clean cooking access, primarily through the distribution of free stoves and subsidized LPG²⁹.

Despite the increase and record levels, **clean cooking still shows a significant capital gap**, particularly for technology development, business model refinement, and proof of concept. There is a notable lack of public R&D funding for clean cooking, with grants playing a diminishing role in supporting enterprises. This points to a failure of early-stage funding to address key risks to business and sector expansion, especially in terms of private financing. On the demand side, **many households struggle with the upfront costs**, especially in low-income countries where access to financing support is limited³⁰.

National leadership and international support are crucial for achieving universal access to clean cooking. Adequate policies, regulatory authority, public engagement campaigns, and financial support for consumers are key enablers. Education and grassroots efforts, particularly women-led initiatives, are essential for promoting the adoption of clean cooking practices. Affordability remains a challenge, with the need for concessional finance to support projects in the poorest region. A just and people-centered transition is necessary to address the social and economic implications, particularly for those working in the traditional charcoal and firewood trade. Reaching universal clean cooking access requires replicating successful models and focusing on rural areas, where most of the underserved population resides.

Sub-Saharan Africa, with roughly half of the total population in need, must make significant strides to meet annual targets. LPG remains a primary solution, while electric cooking and improved cookstoves play important roles, especially in regions lacking infrastructure³¹.

28 WEF, [Why investment in clean cooking is falling short](#), 2023

29 IEA, [A vision for clean cooking access for all: World Energy Outlook Special Report](#), 2023

30 WEF, [Why investment in clean cooking is falling short](#), 2023

31 IEA, [A vision for clean cooking access for all: World Energy Outlook Special Report](#), 2023

CASE STUDY:

Biogas-based solutions are a significant component of the clean cooking transition, especially in rural areas where organic waste is abundant. IRENA reports that nearly 125 million people globally utilize biogas for cooking, with the majority in Asia and a noticeable surge in Africa in recent years. Regional initiatives, such as the Alliance for the Biodigester in West and Central Africa, aim to foster cooperation and create a supportive environment for the expansion of household and institutional biodigester solutions.



OUTCOME 6:

Support grid infrastructure resilience by reducing electricity consumption for cooling by approximately 30% (1900 TWh per year) by 2030.

Cooling is already responsible for peak power demand across cities in developing countries during summer months, where the growth in urban population, incomes, temperatures, increased incidence of heat stress, and resulting growing cooling demand are rampant. Cooling demand, in a business as usual growth scenario, is expected to increase by 2.6x by 2050, as compared to a 2022 baseline³². The resilience of a grid is critical to be able to serve populations with stable and continued electricity access (including to power cooling systems), while also being able to handle increased capacity of the transmission systems, including renewable energy integration, and minimizing and preventing faults that can lead to fires and other disturbances of the system.

The forthcoming 2023 UNEP Global Cooling Stocktake Report has identified the potential to reduce electricity consumption for cooling by 30% by 2030³³, driven by high efficiency gains and passive load reduction measures. **However, efforts to support grid resilience through reduced cooling remain siloed and limited so far.**

³² UNEP, Global Cooling Stocktake Report (Forthcoming), 2023

³³ UNEP, Global Cooling Stocktake Report (Forthcoming), 2023

For this year's edition of the SAA report, no concrete progress metrics have been quantified. Further research and consultations are required to report on progress, which will be featured in the next edition of this SAA report.

There are critical policy and market barriers to enhancing the uptake of higher-efficiency appliances and equipment and to promoting passive cooling measures, including those related to financing, supply chain constraints, standards of technology, affordability, electricity access, as well as demand aggregation, amongst others.

OUTCOME 7:

2.2 billion people access low-cost, clean vehicles and mobility solutions through the expansion of affordable public and private transport services



Access to an equitable, healthy, green, and resilient transport and mobility systems is central to socio-economic prosperity for people and the planet. From the one-lane bridges that connect remote villages to vital services like schools and clinics, to the vast network of roads, railways and public transport services that enable billions of daily commutes, to the major highways and transcontinental railways that power our global economy, we all depend on transport infrastructure networks each and every day of our lives. Shocks such as the COVID-19 pandemic brought public transport networks to a halt while climate hazard-disasters caused physical damage and disruption of the network and its operations. These hinder production of access to services, with dire economic and social implications³⁴. **Increasing access to mobility solutions is a critical lever to building climate resilience for people.**

For this year's edition of the SAA report, no concrete targets or metrics are adopted. Further consultations and analysis needs to be done to set aspirational yet achievable targets on expansion of mobility access, including clear stances on the definition of 'access to mobility' and preferred modes of transport to fill the gap. As a proxy, progress tracking for SDG 11.2 shows that in **1 billion people still live more than 2 km away from a usable, all-weather road**³⁵.

34 SLOCAT, Global Status Report, Chapter 1, 2023

35 World Bank, [Transport](#), 2023

Further, it is estimated that only 52% of urban population has convenient access to public transport (residing within 500m walking distance of low capacity transport systems - such as bus or tram - or within 1 km of high capacity systems - such as trains and ferries). Regions with the lowest access rates are Sub-Saharan Africa (30.7%), Central and Southern Asia (33.7%), and Northern Africa (36.1%)³⁶.

A lack of integrated planning efforts on behalf of governments, especially local-level bodies such as cities or municipalities, is a key challenge to overcome. Integrated mobility planning means finding the right mix of clean mobility solutions across public and private transport modes (including informal transport), tailored to local contexts and stakeholders. It entails the devising of policy levers (e.g., low emission zones, vehicle registration, tax exemptions), working with actors that generate mobility demand (e.g., schools, sports clubs), leveraging technology, working within space restrictions, designing infrastructure needs (including optimizing active mobility solutions), allocating public budgets to finance the required projects, and more. **Further, funding for transport infrastructure is generally not meeting its needs** (see Finance section above). Development assistance for mobility needs to be scaled up towards lower-income countries, where access to mobility is often most constrained. Finally, a lack of capacity is a general challenge for the construction industry, hence also prohibiting progress on increasing access to mobility.

CASE STUDY:

The [Low Carbon Transport for Urban Sustainability initiative \(LOTUS\)](#), launched by the Egyptian presidency of COP27, is aimed at scaling up investment for e-vehicles and sustainable mobility infrastructure, investing in informal transport to decarbonise and mobilize towards SDG 11, and building capacity to develop integrated, multimodal policy frameworks in low-and middle-income countries.



OUTCOME 8:

Transport infrastructure is resilient to climate hazards through adoption of new technology, design and materials

36 United Nations, The Sustainable Development Goals Extended Report, 2022

Climate-induced shocks and stresses - such as droughts, floods, extreme weather - can cause significant damage to transport infrastructure, which can have, beyond the direct damage and costs, significant negative rippling effects to our societies and economies. Hence, **making existing transport infrastructure resilient to these shocks through maintenance operations or retrofitting**, and ensuring **new infrastructure projects consider climate impacts along the project lifecycle**, is critical to building climate resilience³⁷.

For this year's edition of the SAA report, no concrete targets or metrics are adopted. Further consultations and analysis needs to be done to set aspirational yet achievable targets for the resilience of transport infrastructure, including a view on potential metrics to track progress. As highlighted in the section above, and even though there is no explicit progress metric attached to this outcome, it is generally clear from progress on enabling factors (e.g., lack of common taxonomy and indicators, big gap in A&R funding for transport, lack of transport considerations in NAPs) that **the world still has a significant gap to bridge to make its transport infrastructure resilient by 2030**.

Key challenges include a lack of integrated planning on behalf of national and local governments, a lack of globally accepted standards and guidance for infrastructure stakeholders, a lack of technical A&R capacity, and a large gap in funding, which is partly caused by the challenges highlighted above, and partly due to the challenging and complex nature of infrastructure projects in general. Please refer to the above section on overall progress for more detailed elaborations on these challenges, and opportunities to unlock them.

CASE STUDY:

Surface water flooding on UK roads and the subsequent travel disruption affects communities around the country and has significant safety and cost implications. Through the [Natural Flood Management Pilot](#), National Highways committed £1.1m to pilot the use of Natural Flood Management (NFM) measures to increase resilience to flooding on susceptible roads from runoff generated up-catchment in areas of North-West England. The pilot supported catchment landowners to implement natural attenuation measures to reduce flood risk at the source and has demonstrated how a national infrastructure provider can collaborate to deliver nature-based solutions that benefit landowners and the wider community.

37 HLC, BCG, Building for the future: adaptation & resilience in land transport infrastructure, 2023



SAA

**SHARH
ADAPTATION
AGENDA**

CHAPTER 3

**SAA
IMPLEMENTATION
PROGRESS IN
CROSS-CUTTING
ENABLERS**

3.1 PLANNING & POLICY

Progress assessment for this system was done with active participation of the Global Resilience Partnership, CDP, and Regions⁴

SYSTEM-LEVEL PROGRESS

GLOBAL POLICY:

2023 was a landmark year for global policies and standards, which signal international recognition for accelerated A&R action. The 2-year [Glasgow-Sharm el-Sheikh Adaptation Work Programme on the Global Goal on Adaptation](#), which unpacks the **Global Goal on Adaptation (GGA)** into an actionable framework and provides the necessary momentum to push A&R action, will conclude its work this year. Since the institutionalization of the GGA in the Paris Agreement in 2015, workshops between Party and Non-Party stakeholders have been conducted to clarify specific, measurable indicators for accomplishing the Goal. The GGA is “anticipated to strengthen national, local and transboundary adaptation responses through improving planning and implementation processes, while also providing a means to assess collective progress on adaptation action and support that builds on existing communication and reporting tools.”¹

2023 also culminates the **First Global Stocktake** - the outcomes of which have the potential to result in bold political commitments that can drive transformative solutions for A&R² By evaluating where the world stands when it comes to meeting the goals of the Paris Agreement and using its inputs, the stocktake can help policymakers and stakeholders strengthen their climate policies and commitments in their next round of NDCs, paving the way for accelerated action.³ Aggregate data collection, reporting, and assessment of backward and forward looking progress and ambition will culminate at COP28.

1 UN Environment Programme, [Adaptation Gap Report](#), 2023

2 World Resources Institute, [What Is the “Global Stocktake” and How Can It Accelerate Climate Action?](#), 2023

3 UNFCCC, [Global Stocktake](#), Accessed 17 November 2023

Finally, 2023 marks the midpoint for implementation of the [Sendai Framework](#) – recent developments of which include synergizing climate action and disaster risk reduction – and key outcomes of the Midpoint Review will inform adaptation-related outcomes at COP28. Though it is widely recognized that climate and disaster resilience should form an integral part of national strategies and development programs, progress towards integrated climate and disaster risk management has been slow given perceived differences in focus areas and governance mechanisms at the national level.⁴ In line with this, in 2023, the [UNDRR Comprehensive Disaster and Climate Risk Management programme](#) has sought to integrate risk-centered approaches into National Adaptation Plans (NAPs) and incorporate climate/forecast information into national and subnational disaster risk reduction strategies, with the ultimate aim to integrate these related, but often siloed, plans.

NATIONAL ADAPTATION PLANNING:

Countries are submitting Adaptation Components in their NDCs to the UNFCCC with greater detail. Despite Adaptation Components being voluntary in NDCs,⁵ 80% of Parties communicated adaptation in their NDCs and now have more detailed information than past NDCs, including improved country ownership, policy alignment, and system coverage of adaptation priorities.⁶ However, since there is limited guidance on how countries should communicate and report adaptation information, the Adaptation Communications in NDCs vary greatly in quality.⁷

Adaptation planning is increasingly in motion. As of August 2023, 85% of countries have either an adaptation plan, policy, or strategy in place. Among the 29 countries lacking a current plan, strategy, or policy, 14 are in the development phase, and 5 are seeking Green Climate Fund (GCF) readiness funding for adaptation planning assistance.⁸ Notable progress has been made in national policy coordination, with 69% of countries having a central administrative body in charge of adaptation policy making, which is critical for adaptation and represents a 25% increase from when this was last assessed⁹.

4 UN Office for Disaster Risk Reduction, [Promoting Synergy and Alignment between Climate Change Adaptation and Disaster Risk Reduction in the Context of National Adaptation Plans](#), 2021

5 World Resources Institute, [Technical perspectives: 3 Things to Know About the Adaptation Components of Countries' Updated NDCs](#), 2022

6 UNFCCC, [NDC Synthesis Report](#), 2022

7 [WRI](#) provides examples of these, including: “Rwanda’s updated NDC aims to provide implementation-ready adaptation commitments by including cost estimates for each of its priorities. On the other hand, Fiji’s NDC includes adaptation priorities with little added detail, but aims to use the document to raise international visibility to its more comprehensive National Adaptation Plan (NAP)”

8 UN Environment Programme, [Adaptation Gap Report](#), 2023

9 Ibid

Further progress on the comprehensiveness, inclusiveness, implementability, integration, and monitoring criteria of national adaptation planning is discussed in greater detail in [UNEP's Adaptation Gap Report 2023](#).

However, implementability of plans remains to be a challenge. Of the 47 National Adaptation Plans that have been submitted by developing countries to the UNFCCC as of November 2023¹⁰ (most Parties indicate in their NDCs that the NAP is the main national instrument for adaptation implementation), only 55% come equipped with robust implementation strategies and 47% have estimated costs of adaptation actions.¹¹ Moreover, adaptation initiatives often face limited agency required to effectively implement these solutions and multiple obstacles still need to be overcome to ensure NAPs are localized, robust, and actionable. To guide the promotion of locally led adaptation (LLA), the Global Commission on Adaptation developed the eight LLA Principles to help guide the adaptation community as it moves programs, funding and practices towards adaptation that is increasingly owned by local partners.

PRIVATE SECTOR PLANNING:

National governments and regulators are also increasingly recognizing the imperative for the private sector to act on A&R, particularly in areas that affect public goods and services and industries that have significant contributions to local economies and jobs.

Countries are already mandating public companies to disclose climate risks by 2023 and are planning for mandates in the near-term. For example, Germany drafted into law (KRITIS Umbrella Law) requiring key sectors to disclose risks, mitigation plans, and emergency plans against the consequences of natural disasters alongside other risks such as sabotage, attacks, pandemics, and wars. The sectors that are primarily mandated to submit their plans include energy, transport and traffic, finance and insurance, public administration, health, nutrition, drinking water, wastewater, municipal waste disposal, information technology and telecommunication, and space.

In addition, private sector reporting standards for A&R have also evolved positively with standards boards and standards setters (e.g., ISSB and TCFD) clarifying methods, tools, and approaches for companies to disclose climate risks and A&R

¹⁰ [NDC Synthesis Report 2022](#) indicated most parties indicate in their NDCs that the National Adaptation Plan is the main national instrument for adaptation and a key source of information for the adaptation component of their NDCs

¹¹ NAP Global Network, [NAP Trends](#), Accessed 17 November 2023

strategies. In, 2023, the [Taskforce on Nature-related Financial Disclosures](#) (TNFD) created disclosure recommendations and guidance for organizations to report on and address nature-related dependencies, impacts, risks, and opportunities – facilitating the integration of nature into decision-making processes and promoting a shift in global financial flows from nature-negative to nature-positive. With this guidance, companies have not only begun to disclose climate risks, but also started implementing A&R solutions to manage the impact of physical risks on their own assets and operations. It is imperative for companies to work towards protecting their assets and revenue while simultaneously protecting those who rely on their critical products and services. This is critical as the private sector is a key driver of economic and social growth, accounting for 60% of a developing country's, 90% of jobs, and 80% of total international capital flows.¹²

OUTCOME-LEVEL PROGRESS

To build resilience for vulnerable people globally, A&R planning is needed at the national, state/region, and city levels, as well as for the private sector where the flow of critical goods and services could be disrupted by climate shocks and stresses. A&R planning is a critical activity that enables decision-makers to understand their exposure and vulnerability to climate hazards and assess the climate risk and impact management actions needed to protect lives, livelihoods, and ecosystems within their localities.

Plans must be integrated vertically - at all levels of government from national to sub-national and city levels - and horizontally across sectors (e.g., food security plans). This allows for a comprehensive and coordinated approach, essential for tackling the complexity and interlinkages of climate impacts and allowing for synergies in implementation and resource mobilization. Increased access to data, technical/analytical capabilities, supporting policy frameworks that guide A&R priorities, and appropriate levels of funding and resourcing are key enablers that support robust, evidence-based, and actionable plans.

OUTCOME 1:

10,000 cities and 100 regional governments have evidence-based, actionable adaptation and resilience plans

¹² UN Development Programme, [Changing with the times: fostering adaptability within the private sector](#), 2022.

With the urban population projected to reach 6.7 billion by 2050,¹³ accounting for around 70% of the world's total,¹⁴ the urgency to build city resilience capacities is apparent. Cities, particularly those in the Global South with rapid growth and informal settlements, face distinct climate hazards such as rising sea levels and urban heat island effects. Additionally, regional A&R plans are crucial to encompass diverse non-urban environments like rural areas, forests, and coasts, each with unique climate risks and needs. To address these, evidence-based and actionable A&R planning is essential.

As of 2022, 572 cities and 36 regional governments have an adaptation and resilience plan as reported in CDP, translating to a tracked ~6% and 36% achievement of the 2030 target, respectively. While there's still much to be done, collective progress towards A&R planning has increased in recent years. For example, 122 cities across the globe were in the CDP Cities A list in 2022 compared to 95 in 2021. (To score an A, a city must have completed a climate risk and vulnerability assessment and have a climate adaptation plan to demonstrate how it will tackle climate hazards.) For the first time, the CDP A list included several countries in the Global South such as Peru, Ecuador, Cameroon, Turkey, Jordan, and India. It is important to note these metrics only capture cities and regions who report to CDP and may exclude those who do have A&R plans but have not disclosed.

The Cities Race to Resilience has been instrumental in driving progress - providing a framework for how cities can plan to integrate A&R in all aspects of urban planning, outline targets, implement a range of recognized A&R solutions, and report commitments. Signatory cities reported a total of 194 planned climate-related projects which they hope to attract financing; nearly half (49%) the projects related to energy, transport or buildings, and the vast majority (77%) are in the early-stage (i.e., scoping or feasibility). Its regional counterpart, the Regions Race to Resilience has also provided its members capacity building opportunities through RegionsAdapt to improve their reporting, align climate actions with biodiversity and integrate the voice of the most marginalized into planning by providing capacity building webinars, policy briefs and reports.

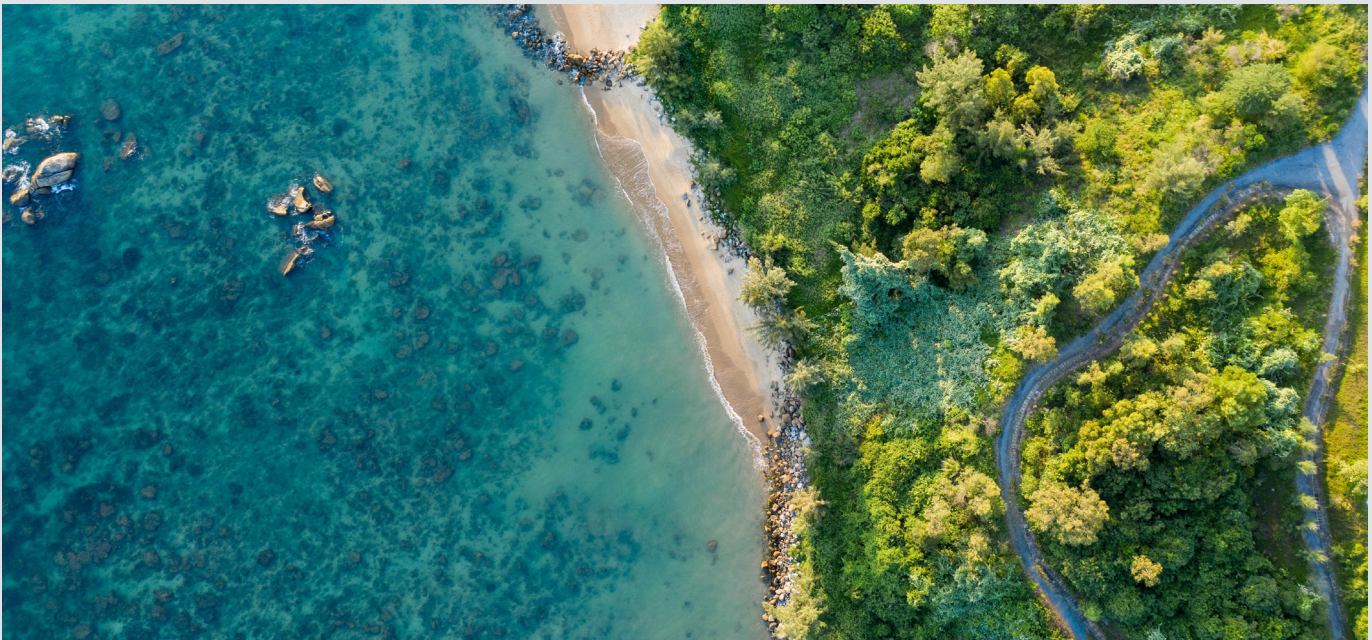
To close the gap in achieving the target, constraints in technical capacity, finance, and data need to be addressed, especially for cities and regions in the Global South facing resource constraints. According to RegionsAdapt, Industrialized regions have

¹³ International Union for the Conservation of Nature, [Cities and Nature](#), 2023

¹⁴ United Nations, [World population projected to reach 9.8 billion in 2050, and 11.2 billion in 2100](#), 2017

made more progress in developing their adaptation plans than middle-income and lower-income governments due to the latter's lack of technical capacity to initiate the process. Insufficient funding is also a key constraint in the Global South, limiting the capacity of cities and regions to effectively implement A&R actions. International funding has also not flowed down to the local level, with majority of cities and regions funding A&R with their jurisdiction's own resources.

Despite these constraints, case studies highlight how targeted strategies, effective policy implementation, local community involvement, and partnerships can bolster city and region resilience even in resource-limited settings. For example, in Quelimane City and Cross River State.



CASE STUDY:

Strengthening adaptation planning in Quelimane (Mozambique). Through the Urban Natural for Assets for Africa (UNA Coasts), nature has been integrated into urban planning and decision-making processes in the city of Quelimane. The UNA project helped enhance the city's awareness and capacity to address and build local resilience for both nature and people. Through the UNA Coasts project, Quelimane successfully completed the development of a "City Responses to Climate Change: Framework for decision-making" which aims to streamline governance and decision-making in Quelimane, helping decision-makers define and consolidate climate adaptation strategies and processes, and focus on inclusivity.

CASE STUDY (Region RtR):

Strengthening Climate Resilience, Food Security, Energy Efficiency and Environmental Security

in Cross River State (Nigeria): Launched in 2017, the Sustainable Fuelwood Management (SFM) project involved collaboration between the Federal Government of Nigeria, three state governments, the Global Environment Facility, and the United Nations Development Programme, fostering partnership among civil society, forestry, businesses, and academia. The initiative aimed to enhance the resilience of degraded forests, focusing on climate resilience, food security, water availability, and sustainable fuelwood production. It also aimed to boost food and fodder production, provide organic fertilizers, empower forest communities with skills training, and restore coastal areas through agroforestry. With a \$20 million investment, the project resulted in expanded forest and cropland areas, gender-sensitive training, capacity building for communities, and the regeneration of over 65 hectares of degraded land. Numerous community members have also received training to establish private tree nurseries for commercial purposes, with a particular focus on empowering women in the process.



Collaborative networks are opportunities that cities and regional governments can tap for support in integrating resilience across all aspects of urban planning.

They can furthermore be supported by capacity building and technical assistance to pledge, move towards implementation, and report on adaptation and resilience-building activities through working with Race to Resilience partners like ICLEI, CDP, UNEP and GCoM to ensure that the work that is happening at the local level is recognized, rewarded and showcased at the highest level.

Partner spotlight: Regions4, an international coalition of regional governments, boosts climate action and adaptation through its program, **RegionsAdapt**. It fosters advocacy, collaboration, skill development, and knowledge sharing, promoting resilient and sustainable regions. As a participant in the Race to Resilience campaign since 2021, RegionsAdapt has facilitated the commitment of more than 70 regional governments to assess climate vulnerabilities, adopt adaptation plans, enact measures, and report advancements.

OUTCOME 2:

2,000 companies have evidence-based, actionable adaptation and resilience plans



The private sector needs to lead on building the resilience of its assets and operations through assessing impacts of physical climate risk, formulating A&R solutions that address the cost of inaction, and finally rolling this up in an A&R plan. This is especially important for companies that own and operate critical infrastructure and supply chains and provide essential services highlighted in countries' NAPs and NDCs.

As of today, there are no data sources that track the number of A&R plans at the corporate level, but the increasing responses to physical climate risk in existing disclosure databases like CDP signal progress in this area. **25% of 18,700+ companies who disclosed on CDP's Climate Change Questionnaire, the largest disclosure database globally, reported on physical climate risk in 2022.**¹ However, it is worth noting this number does not necessarily translate to A&R plans; only that companies are recognizing and quantifying the materiality of physical climate risks on their assets, supply chains, and operations. Global developments in private sector A&R – including regulations and standards – have led to increasing disclosures on climate risks and private sector-led implementation of A&R solutions to manage the impact of physical risks on their own assets and operations.

In CDP's [2022 Global Water report](#), there has been an 85% increase in disclosure over the last five years, with global brands reporting water-related opportunities worth \$436bn. While much work still needs to be done to mainstream climate resilience into business-as-usual decisions - including addressing barriers in lack of clarity

¹ CDP 2022 Corporate Climate Change Questionnaire Database, information sourced through CDP

around the role of the private sector, climate information, and methodologies and disclosures for A&R - there are emerging signals of private sector action to build resilience for their own assets and operations. This includes a private sector climate-resilient pathways framework and the PREPARE Call to Action to the private sector:

CASE STUDY (Region RtR):

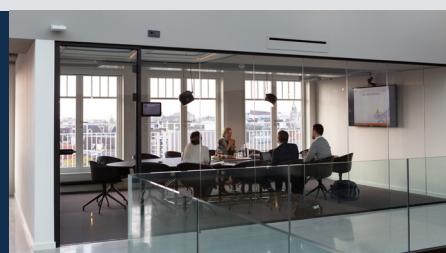
Resilience Rising, Resilience First, and the [Center for Climate and Energy Solutions](#) are launching a dynamic, multi-year initiative to build and mainstream climate resilience within the private sector through the “Climate-Resilient Pathways Framework.” By strengthening the business case for investing in resilience across industry sectors, engaging key stakeholders globally and developing a universal framework for businesses to advance climate resilience, they will galvanize the private sector to substantially scale-up its investment in resilience, improve resilience in the communities where they operate, and position businesses to advocate for policies that strengthen climate resilience. These efforts aim to sustain livelihoods, protect vulnerable communities, and strengthen local, regional, and global economies to thrive in a rapidly changing and uncertain world.

CASE STUDY:

At COP26, U.S. President Biden launched the **President's Emergency Plan for Adaptation and Resilience (PREPARE)**, which is a whole-of-government effort to help more than half a billion people in developing countries adapt to and manage the impacts of climate change. At COP26, U.S. President Biden launched the **President's Emergency Plan for Adaptation and Resilience (PREPARE)**, which is a whole-of-government effort to help more than half a billion people in developing countries adapt to and manage the impacts of climate change. At COP27, Samantha Power, Administrator for USAID, and John Kerry, U.S. Special Presidential Envoy for Climate, announced the **global PREPARE Call to Action to the Private Sector**, urging businesses to make significant commitments to build climate resilience in partner countries. The Call to Action, managed by the Global Resilience Partnership and backed by USAID, seeks to leverage private sector resources, expertise, and innovation to drive inclusive and locally-led adaptation for businesses and their communities and consumers. 12 companies pledged to enhance climate resilience through various means, including by expanding climate information, financial products and services for adaptation, climate-smart food security, and insurance. Further companies have joined the initiative and these will be announced at COP28.

OUTCOME 3:

Universal access to data and analytics required to integrate climate risks and impacts into decision making and action across all levels



Projections of how climate may change in the future are based on scientific climate data, socio-economic data & global and regional climate models. This is a critical input for national, sub-national governments and private companies around the world to understand their exposure to climate risks and assess potential socio-economic impacts. It helps them understand what adaptation solutions and technologies are needed to develop robust adaptation plans to protect populations, the economy and business assets, and provides signals and opportunities for climate adaptation innovators and policy makers to accelerate the development & adoption of relevant technologies.

The volume of open-access climate data is increasing globally. Multiple organizations embrace open data initiatives and develop open-source Global Climate Models (GCMs) and Regional Climate Models (RCMs), providing governments around the world with free access to scientific data as a critical input to climate impacts modeling, for example:

- ▶ [The Coupled Model Intercomparison Project](#) (CMIP) is the largest international effort launched by the World Climate Research Programme (WCRP) that brings together climate modeling research institutions like the IPCC or the World Meteorological Organization (WMO) to coordinate and compare +60 GCMs and improve our understanding of past, present and future climate changes.
- ▶ Organizations like the [National Aeronautics and Space Administration](#) (NASA), the [National Oceanic and Atmospheric Administration](#) (NOAA) and [Copernicus Climate Change Service](#) then use the CMIP's outputs to provide extensive climate datasets and develop Regional Climate Models (RCMs) with better data granularity (e.g., land features)

However, data accessibility, resolution, and completeness remain challenging particularly for the Global South. As of 2023, ~70% of developing countries leverage own national models in their NAPs, but only ~55% have tailored downscale scenarios that local governments can leverage in their A&R planning.¹ Climate analytics, on the other hand, that translate data into a format that simplifies decision-making related to A&R, are an even bigger gap in the Global South.

Scaling partnerships with research institutions and organizations is a key opportunity area. Partnerships such as the AI for the Planet & Adaptation Research Alliance (ARA) could offer governments and decision-makers with access to localized climate data, contributing to more effective and evidence-based A&R planning.

¹ NAP Global Network, [NAP Trends](#), Accessed 17 November 2023

SPOTLIGHT:

The **AI for the Planet Alliance** is an international coalition of AI and climate leaders that aims to catalyze innovation and promote advanced analytics and AI to accelerate climate action at scale across mitigation, adaptation, and resilience. The alliance is a global platform to identify and champion promising climate AI solutions and create measurable impact through funding and on-the-ground support. It is committed to ensuring solutions are accessible to all. The 2022-2023 call for solutions winners - Albo Climate who provides remote sensing technology for nature-based climate solutions, Conservation X Labs who builds scalable wild-life monitoring technologies for conservationists, and Husk Power Systems who develops renewable, affordable, and reliable mini-grids and energy services - each demonstrated the potential of AI to support climate action. The alliance also advocates for free and open access to foundational climate data and models, and fosters networks across diverse sectors. The AI for the Planet Alliance was created by Startup Inside, with Boston Consulting Group (BCG) and BCG X as knowledge partners, and in collaboration with the AI for Good Foundation, UNDP, UNESCO, OICT, and is supported by an advisory board of global experts from academia, corporations and NGOs.

SPOTLIGHT:

Launched at COP26, the Adaptation Research Alliance (ARA) promotes action-orientated research to inform effective adaptation to reduce the risks from climate change, particularly for countries and communities that are most vulnerable, at the scale and urgency demanded by science. The ARA is a global, collaborative, multi-stakeholder effort, involving almost 250 organisations from 60 countries - representing funders, practitioners, researchers and vulnerable communities. Through a combination of advocacy, improved planning and coordination, and catalysing greater investment in action-orientated research, the ARA seeks to promote evidence-based and effective decision-making and development of adaptation solutions. The Alliance has brought together cross-sectoral, multi-stakeholder actors from over 100 organisations to co-create solutions to enable Least Developing Countries' universities influence National Adaptation Plans, to achieve urban resilience, and to design new programmes on nature-based solutions and smallholder agriculture. It has also provided voice to its members for inputting into international policy processes by making submissions to the GlASS and to the Global Stocktake, and through its Grassroots Action Research Micro-

grants supported 57 Global South projects focused on action-oriented research for adaptation.

Furthermore, as climate data becomes increasingly accessible, principles to gather and make data accessible have also been established to guide a more ethical and responsible use of data. This includes the [FAIR](#) Guiding Principles for scientific data management and stewardship, the [CARE](#) Principles for Indigenous Data Governance, and those identified at the [Resilience Evidence Forum](#) in 2023.

OUTCOME 4:

100% operationalization of NDCs with adaptation components, National Adaptation Plans, and Locally-Led Principles, enabling adaptation in a country-driven localized and consultative manner

In developing adaptation plans, UNFCCC’s NAP guidelines indicate the importance of participation and empowerment of vulnerable groups who likely bear the brunt of climate impacts. To this end, the 8 principles for [Locally-Led Adaptation \(LLA\)](#) were launched by the Global Center on Adaptation and World Resources Institute to “unlock, support and leverage the enormous potential and creativity of communities to develop and implement solutions.” This aims to shift decision-making to local stakeholders, without expecting them to shoulder the burden of adaptation, in order to catalyze adaptation that is effective, equitable, and transparent.²

While locally-led adaptation planning is not exactly tracked, we can glean insights on how countries approach LLA. Analysis of the 47 NAPs submitted to the UNFCCC done by the NAP Global Network indicates that 74% of countries identify participatory approaches as a guiding principle to their NAP, 57% include principles on inclusivity of vulnerable groups and communities, and 36% include guidance by traditional

and Indigenous knowledge.³ Case studies also show how some countries are ensuring their NAP is an inclusive, locally-led process. For instance, Bangladesh has combined bottom-up and top-down approaches, organizing consultations and field visits at the national, divisional, district, and upazilla (municipality) levels in the most

2 Global Center on Adaptation, [Locally Led Adaptation](#)

3 NAP Global Network, [NAP Trends](#), Accessed 17 November 2023

climate-vulnerable regions, incorporating locally led adaptation approaches and Indigenous knowledge.⁴

Opportunities for advancing this Outcome include scaling global initiatives that aim to build capacities for locally-led adaptation. The [Global Hub on Locally Led Adaptation](#) was inaugurated by Prime Minister of Bangladesh. H.E. Sheikh Hasina in December 2022. Through a partnership with UK Aid and the Global Center on Adaptation, the Global Hub on LLA aims to empower local governments and communities through the provision of additional resources and capacity, and to scale up best practices by influencing adaptation and development investments. In 2023 the Global Hub on LLA has been supporting efforts to increase the volume of finance available for LLA, including through innovative and private sector sources, and to improve access to flexible adaptation finance at the local level. For example, the Global Center on Adaptation, is already contributing to the development of People's Climate Resilience Plans in Liberia, Senegal and Rwanda.

The Local Adaptation Champions Awards of the Global Hub on LLA spotlight and reward innovative, exemplary, inspiring, and scalable locally led efforts that address the impacts of climate change and build effective climate resilience among the most vulnerable communities. This year, the Local Adaptation Champions Awards received 535 applications from 92 countries across four categories: Capacity Building; Business Adaptation Solutions; Women in Leadership; and Innovation in Devolving Finance.

⁴ UN Development Programme, [A new era for National Adaptation Plans?](#), 2022

3.2 FINANCE

SAA Task Force, co-led by the Institutional Investors Group on Climate Change, CDP, and the UN Economic Commission for Africa, drove progress assessment for this system, with active participation of the Atlantic Council Foundation and Climate Policy Initiative.



SYSTEM-LEVEL PROGRESS

Finance is a critical enabler to unlock and implement the solutions that address climate risks and their related impacts. As detailed in the previous chapter ([Planning & Policy](#)), the quantity of A&R plans from both governments and companies that detail climate risk assessments and financing needs have increased, which create the investment pipeline that investors are looking for to deploy financing at scale. **The challenge is translating this awareness into actual investments, especially in the geographies and sectors most in need of financing.** Long-term and scalable financial mechanisms for finance to reach local stakeholders that drive local actions on-the-ground are critically needed. This requires not only an increase in actual flows, but also an [evolution of the International Financial Architecture](#) and a greater collaboration and innovation in the finance ecosystem, and across both public and private actors.

The global adaptation finance gap is widening. While flows have seen a marked increase, it is not still enough to meet growing adaptation financing needs and costs. Total A&R investment currently stands at US\$63bn per year on average in 2021/2022, a 28% increase from 2019/2020 (US\$46bn on average)¹. However, this falls short of UN Environment Programme (UNEP)'s 2023 estimate of A&R financing costs and needs, amounting to a staggering US\$215bn to US\$387bn annually by 2030 in developing countries alone².

¹ Climate Policy Initiative, [Global Landscape of Climate Finance](#), 2023

² United Nations Environment Programme in the 2023 [Adaptation Gap Report](#) mentions that the lower end of the range represents adaptation costs based on sector-based studies and the upper end of the range represents adaptation needs communicated in NDCs and NAPs, with extrapolation to all developing countries.

It is worth noting, however, adaptation finance tracking may be plagued by data gaps, methodological inconsistencies, and reporting limitations, making it difficult to accurately measure collective progress.

With financing needs expected to continue growing, public spending alone cannot close the adaptation finance gap. Finance from private sources must also increase. Tracked adaptation finance is overwhelmingly provided by public actors (98%) in 2021/2022. DFIs provided 86% of total tracked adaptation finance (US\$54.2bn), followed by governments and its agencies (11%) and multilateral climate funds (1%). On the other hand, data on adaptation finance from the private sector is still largely missing: Out of the tracked US\$1.5bn in adaptation financing in 2021/2022 from private sources, roughly 38% was provided by commercial financing institutions, followed by corporations (28%), philanthropic foundations (31%) and funds (3%).

Only 53% of funds were directed to developing economies. Adaptation costs significantly burden low-income countries at 3.5% of their GDP, compared to lower-middle-and upper-middle-income countries (0.7% and 0.5% of their GDP, respectively).³ Alarming, less than 30% of the adaptation finance (US\$10bn) flowed to the 50 least developed countries, which have a collective population of more than 1 billion and contribute less than 4% of world's GHG emissions.⁴ As these nations will face severe impacts, there is an urgent need to scale financial assistance to establish climate-resilient development, alongside essential institutional and technical skills and knowledge.

In Africa, adaptation finance is highly concentrated to few nations, and international support must scale at least five-fold in the next seven years to effectively address impacts of climate change in the region. Ten nations received over half of the continent's climate finance. Sub-Saharan African countries were collectively the largest recipients of international adaptation finance in 2021/2022 (US\$11bn). However, analysis of Africa's NDCs and NAPs suggests that Africa needs at least US\$52bn, or 2.5% of Africa's GDP per year to meet its adaptation goals by 2030.⁵

Gender-sensitive and socially inclusive adaptation finance continues to be a challenge. UNEP in its 2023 Adaptation Gap Report analyzed the inclusion of gender equality and social inclusion in costed NDCs and NAPs. It revealed that only 20% of these plans have a dedicated budget for such efforts, and the allocated amounts are typically low, averaging 2%.

3 UN Environment Programme, [Adaptation Gap Report](#), 2023

4 Climate Policy Initiative, [Global Landscape of Climate Finance](#), 2023

5 Climate Policy Initiative and Global Commission on Adaptation, [Accelerating Adaptation Finance – Africa and Global Perspectives](#), 2023

When it comes to international public finance for adaptation tagged with gender equality as a primary objective, only 2% is considered gender-responsive, with an additional 24% being classified as gender-specific or integrative. As for other aspects of social inclusion, they receive limited attention in both funding and needs.

These findings underscore both the need for improved transparency and consistency in reporting gender equality indicators and the urgency for financiers to increase funding for gender- and socially-inclusive adaptation.

While flows have yet to meet the scale and demand of needs, there is increasing awareness among the market and financial institutions to resolve the current barriers to adaptation finance to unlock capital at scale. There are emerging signals, through the following case studies, that show how financial actors are already moving toward understanding the substantial risks and impacts posed by climate change on financial institutions, markets, and ecosystems -- and also the rising opportunities that come with financing resilience.

Facilitating the mobilization of funds, especially from the private sector, requires a transformational shift in the financial ecosystem to align with a more resilient society. Moreover, there needs to be a shift in the financial risk perception associated with adaptation and resilience investments. Over the last year, there have been advancements in frameworks, tools, and methodologies that are enabling a more standardized and comprehensive approach to A&R finance such as the Physical Climate Risk Assessment Methodology. These are building capacities of those seeking finance and those providing finance, ultimately fostering an environment conducive to mobilizing finance for A&R.

CASE STUDY:

In 2022, the Coalition for Climate Resilient Investment launched the **Physical Climate Risk Assessment Methodology (PCRAM) Guidelines for Integrating Physical Climate Risks in Infrastructure Investment Appraisal**, in response to growing demand from investors for comprehensive solutions for improving the integration of such risks into investment appraisal practices. The Institutional Investors Group on Climate Change (IIGCC) has taken this work forward in 2023, with the launch of **PCRAM 2.0**. In 2024, they will release a report on the findings of the first PCRAM workstream, that highlights four case studies led by Mott MacDonald across a variety of asset, location, hazard, and investment

types. Initial findings show that applications of the methodology are able to make both the direct and indirect benefits of A&R investments visible, allowing projects to be potentially structured in ways that can attract further private capital. The areas of further work required in the PCRAM 2.0 case studies include integration of nature, calculation of systemic resilience benefits, and innovations in financing and funding.

Other key developments in frameworks, tools, and methodologies include:

- ▶ In 2022, IIGCC began work on a [Climate Resilience Investment Framework](#) to help investors integrate adaptation and resilience into their portfolios across all asset classes, beginning with infrastructure and their work on PCRAM.
- ▶ With generous support from the Bezos Earth Fund and the ClimateWorks Foundation, the GARI Group is publishing a paper that will be released at COP28 that outlines the case for climate resilience as an attractive thematic growth theme to be integrated into decarbonization investment strategies. **The Climate Resilience Investment in Solutions Principles (CRISP) Framework** builds on prior work to develop a framework for investment professionals to support a range of institutional investment strategies, including exposure to publicly listed companies. As part of the project, the MSCI Sustainability Institute and Lightsmith have provided analytical support to develop a demonstration case.
- ▶ The Climate Bonds Initiative released a [Resilience Bonds Taxonomy Whitepaper](#) in June 2023, which presents a blueprint for the development of a climate resilience classification framework, with the primary objective of promoting and facilitating the much-needed investment in climate resilience through capital markets. Building on this white paper, the Framework's finalization will be guided and informed through high-level consultations with funders of this work programme, including the UNDRR, as well as expert guidance and advice from a Resilience Technical Advisory Group¹.

¹ [Climate Bonds Initiative](#)

- ▶ The collaboration between Arsht-Rock and the Atlantic Council Foundation led to a **Call to Action** that aims to tackle barriers, share insights, build frameworks, and enable finance mobilization for climate resilience – emphasizing nature’s role in global well-being and prosperity. It urges policymakers to facilitate the participation of private financial institutions in these efforts by improving policies and addressing information shortages, incorporating private finance into global financial reforms, creating policies for climate risk assessment, and harmonizing public and private funding to bolster worldwide climate action.
- ▶ The **Climate Adaptation Country Compacts** were launched at the Africa Climate Summit as a new country-led tool supporting the Africa Adaptation Acceleration Program (AAP) to outline key investment priorities, financing needs, and finance mobilization strategies for implementing climate adaptation measures. These investment plans act as an ambitious, coordinated, country-driven approach to connect the priorities outlined in National Adaptation Plans and other national strategies with investment programs and increased finance from development partners and the private sector. Six first-phase Compacts were presented at the ACS: Congo, Equatorial Guinea, Kenya, Mozambique, Nigeria, Senegal, and Tanzania. Further first-stage Compacts will be launched at COP28.

Advancements have also been made in innovating and deploying financial instruments and investment vehicles to ensure financing reaches the most climate-vulnerable communities and are gender-responsive and socially-inclusive. There have been developments in funds and other investment vehicles that aim to direct capital toward implementing A&R measures and growing the market for A&R solutions specifically in developing economies, such as the CRAFT Facility.

CASE STUDY:

With support from Nordic Development Fund and the U.S. Department of State, in 2022, Lighthsmith launched a **Technical Assistance Facility to compliment the Climate Resilience and Adaptation Finance and Technology Transfer Facility (CRAFT) portfolio company activities** with a focus on providing technical and economic assistance to companies in

the three key areas of: project preparation, de-risking market entry and overcoming barriers to deployment. The facility capitalizes on the work of the Fund's investment team in identifying, engaging with, and developing market analyses for the climate resilience companies it supports, and as a result has a substantially larger impact.

CASE STUDY:

The **Adaptation Pipeline Accelerator partnerships** announced in September 2023 at the UN Secretary-General's Climate Ambition Summit between Tuvalu and Australia and between the Dominican Republic and Spain are pioneering examples of this new collaboration model. With the support of UNDP, the NDC Partnership, and the GCF, other vulnerable developing countries are embracing this model.

Other key developments include:

- ▶ Since 2010, the [Adaptation Fund](#) has committed over \$1bn to nearly 160 concrete projects on the ground for the most vulnerable. It has supported preservation/restoration of 600,000 hectares of natural habitats and served over 41 million beneficiaries in over 100 developing countries. In line with the commitment by developed countries to double adaptation finance from 2019 levels by 2025, the Adaptation Fund received significant amounts of pledges in COP 26 and 27, amounting to US\$360m and US\$240m, respectively. Encouraged by those signals, the Fund set resource mobilization goals for 2023 of US\$300m to maintain pace with the high adaptation demand it has been receiving².
- ▶ [The Catalyst Climate Resilience Fund \(CCRF\)](#) is an impact fund and accelerator supporting pre-seed tech startups that are building a climate resilient future in Africa. The fund blends capital from concessional and commercial equity investors to invest \$200,000 in selected pre-seed portfolio companies. It combines capital and venture building support and will have significant reserves to make follow-on investments at Seed and Series A in selected portfolio companies. The Fund announced in September 2023 an initial close of \$8.6m towards a target \$40m fund size. The fund plans to invest in adaptation across sectors including fishery management, food systems, cold

² Adaptation Fund, [Adaptation Fund Stands Poised to Continue to Deliver to Most Vulnerable, Amid Release of Telling Adaptation Gap Report](#), 2023

chains, and water management. To date, the fund has invested in 10 startups from six countries including Egypt, Senegal, and Morocco.

- ▶ The **Private Infrastructure Development Group (PIDG)** published their 2030 Strategy which is focused on ensuring projects are compatible with climate and nature imperatives, improving resilience to climate shocks for some of the most vulnerable populations, while protecting and restoring nature. They demonstrate the commercial viability of private infrastructure investment and are deploying blended finance for climate-resilient infrastructure projects in Sub-Saharan Africa, South Asia, and Southeast Asia. PIDG was involved in investments worth \$40bn, mobilizing \$25bn of investments through 2022; over 200 projects supported by PIDG reached finance close, over 50% in fragile and conflict affected states and in the poorest LDCs.

Certain conventional financial tools have the potential to address loss and damage (L&D), such as social safety nets, contingency funds, disaster insurance, and catastrophe bonds, offering a degree of financial cushion and swift disbursements in the aftermath of disasters. Nevertheless, addressing the scale of loss and damage in light of the expanding Adaptation finance gap requires expanding the pool of contributors and introducing creative financial mechanisms. Key global developments include the following:

- ▶ COP27 concluded with the groundbreaking agreement to establish a new **Loss and Damage Fund**. This significant development aims to enable vulnerable countries to respond to and recover from climate impacts. Final decisions on operating guidelines of the Fund will be culminated at COP28.
- ▶ **Climate Insurance Linked Resilient Infrastructure Finance (CILRIF)** is a long-term “known price” insurance and financing solution that incentivizes municipalities to invest in resilient infrastructure leading to reduction in “risk premiums” for both insurance and financing. The development of CILRIF to date has been driven by a voluntary working group of individuals representing multiple stakeholders, which is convened by the UN Capital Development Fund. In 2022, CILRIF was endorsed by the Global Innovation Lab for Climate Finance. CILRIF aims to enable cities to access affordable, 10-20-year climate insurance with pre-arranged premiums – contingent upon the cities’ commitment to invest in climate resiliency. Pilots for CILRIF are under development in one city each in Africa and Asia, focusing on riverine flood

risk, with further pilots expected to focus on extreme heat and other climate hazards.

- ▶ In partnership with the V20, the G7 launched the [Global Shield against Climate Risks](#) at COP27. The Global Shield aims to close protection gaps in climate-vulnerable countries, using a tool-box of pre-arranged finance. In its initial phase, the Global Shield is starting activities in eight pathfinder countries and one pathfinder region, namely Bangladesh, Costa Rica, Ghana, Jamaica, Malawi, Pakistan, The Philippines, Senegal, and the Pacific³. Additional Global Shield partner countries will be selected in the future. The Global Shield also plans to continue working on facilitating collaboration between financial institutions and other stakeholders through its in-country work and will be showcasing first results at COP28⁴.

³ [Global Shield](#)

⁴ Global Shield, [UN Special Meeting on Loss and Damage highlights need for initiatives like Global Shield](#), 2023

OUTCOME-LEVEL PROGRESS

OUTCOME 1:

Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing adaptation and resilience so as to enable the mobilization of the US\$215 billion to US\$387 billion that will be needed annually across both public and private sources

In 2021/22, tracked adaptation finance from the private sector amounted to \$1.3bn, representing 2% of total A&R finance,¹ the same proportion as 2019/20. This remains insufficient to bridge the adaptation finance gap. However, there has been an emergence of innovative financing mechanisms, such as the [Landscape Resilience Fund](#) or the [Kuali Impact Fund](#) that is under management from the Spanish Impact Investor GAWA Capital, that aim to facilitate more private finance in the near term.

Several challenges and constraints hinder the realization of this outcome, including the perceptions of high risk and low returns on investment portfolios, limited project pipelines and viable opportunities in thin markets, and a lack of financial innovation in institutional portfolios. Additionally, the absence of standardized methodologies, taxonomies, and common frameworks for A&R investments, as well as issues related to disclosure quality and climate risk data availability, pose obstacles. There is therefore a critical need for better understanding of financing opportunities, and better assessment and disclosure of physical climate risks under mandatory TCFD/ISSB reporting to help the finance sector identify and finance resilience opportunities.

CASE STUDY:

In response to the [PREPARE Call to Action](#), Boston Consulting Group has worked with USAID and the Global Resilience Partnership to launch a **flagship report at COP 28 on the business imperatives for the private sector to finance climate adaptation and resilience**. This report provides the business case and entry points for private financing through robust analyses of actions

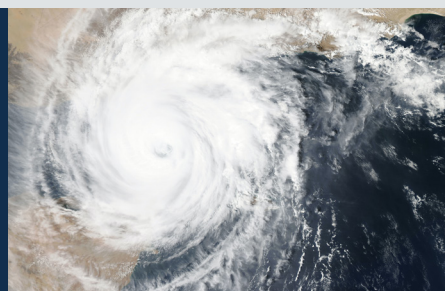
¹ Climate Policy Initiative, [Global Landscape of Climate Finance](#), 2023

and transactions for hundreds of organizations across industries, with a focus on unlocking value in emerging markets in developing economies. This work aims to provide an evidence base to galvanize private sector adaptation and resilience action and finance.

There are also emerging developments that enable this outcome, as outlined in tools and methodologies in the previous section like PCRAM and CCRI's Systemic Risk Assessment Tool (SRAT). Results from PCRAM case studies and CCRI SRAT indicate that while A&R measures may not generate significant new revenue streams, methodologies for incorporating climate risk help make the systemic co-benefits from A&R solutions visible, paving the way for investors to structure financing models that can attract private capital like tax increment financing.

OUTCOME 2:

Public finance actors increase provision of climate finance and allocate 50% of climate funds to adaptation and resilience



While there has been a notable increase of global adaptation flows from domestic and international public sources (~US\$62-63bn in 2021/22 versus ~US\$45bn in 2019/20), much focus still remains in mitigation. **Only 10% of total public finance for climate was allocated to A&R in 2021/22** despite the Paris Agreement calling for the “provision of scaled-up financial resources [to] aim to achieve a balance between adaptation and mitigation.” In addition, the [UN Secretary-General has called](#) for developed countries to deliver its commitment in doubling adaptation climate finance by 2025, as an initial step to ensure half of all climate finance is dedicated for adaptation.

Furthermore, he has called for support to be provided to every vulnerable developing country to develop and implement adaptation investment plan by 2025 and a global surge in finance to transform these plans into action at scale. To deliver this call, he urges governments, public and private financiers, development partners, non-party actors and civil society to work together to operate under a new collaboration model to turn adaptation plans into investments and actions at scale. This requires

unprecedented coordination and large-scale support to move away from an incremental, siloed, short-term and project-based approach to a whole-of-economy and society approach to adaptation planning and implementation. Despite this call, international public climate finance directed to developing countries, in particular, have declined 15% from 2020 to 2021 (US\$25.2bn and US\$21.3bn, respectively).¹ Not only does this fall short of the 2021 Glasgow Climate Pact, which urged developed countries to at least double their climate finance provision from 2019 levels by 2025 to around US\$40bn, it widens the adaptation finance gap as 85% of adaptation financing needs submitted in NDCs and NAPs are conditional and rely on international climate finance support.² In addition, finance for developing countries is challenged by forms of financing. In 2021/22, more than 17% of public finance going to LDCs comes in the form of market-rate debt, posing greater challenges as these nations are already highly debt-constrained. High public debt limits country access to affordable financing and constrains capacity for climate action, including adaptation and resilience building.

It is critical for public financiers to recognize climate objectives as development objectives and ensure that all development is made climate-resilient, including those co-financed with the private sector. This could be enabled by governments requiring MDBs, DFIs, and other financial actors to undertake standardized physical climate risks assessments on all new projects to ensure that already-sparse finance is flowing to resilient activities. The Bridgetown Initiative has potential to address this particular challenge, by widening the eligibility for lending below market rates for climate-vulnerable countries investing in resilience in climate-vulnerable countries. Scaling instruments like debt swaps or debt relief can also alleviate debt while directing funding towards broader economic and development objectives.

1 UN Environment Programme, [Adaptation Gap Report](#), 2023

2 UN Environment Programme, [Adaptation Gap Report](#), 2023

CASE STUDY:

The [Sustainable Debt Coalition](#) was launched by Egypt's Ministry of Finance at COP27 and advocates for change to the international debt architecture, especially the management of existing debt, issuance of new debt, and alternatives to debt. Support has to date focused on: Introduction of borrower-defined KPIs linked to climate and SDGs to improve ownership of sustainable development and improve financing terms; Adoption of climate-resilient debt clauses (CRDCs) which allow debt repayments to be frozen in the event of exogenous shocks associated with climate-related disasters; Coordination and upscaling of blended finance instruments to crowd-in private capital and reduce perceived risks for investing in emerging markets; Prioritization of grant over debt finance to support sustainable development; Debt swaps and other instruments for debt refinancing. The Coalition has provided inputs to the declarations of both the Paris Global Financing Pact and the Nairobi Declaration. Its advocacy has also helped catalyze announcements of CRDCs from the World Bank, United Kingdom, France, and the United States. A first communique for the Coalition will be officially launched at COP28 with members.

OUTCOME 3:

Global property and casualty insurance sector has an industry capabilities framework, actively supports project implementation, and institutionalizes a longer-term industry approach to climate adaptation

Capability Framework: Progress is being made on both micro and macro-level capability frameworks in the insurance industry. Micro-level efforts involve the [International Cooperative and Mutual Insurance Federation \(ICMIF\) and United Nations Office for Disaster Risk Reduction \(UNDRR partnership\)](#) partnership to benchmark insurers on disaster risk reduction. Macro-level initiatives aim to establish public-private pooling mechanisms to support vulnerable countries affected by large-scale events.

Project Implementation: Insurers are increasingly involved in risk-reducing projects in various markets, with an emphasis on ex-ante risk reduction. Several projects,

primarily supported by the IDF, are moving from discussion to action, particularly in the United States and the European Union.

Institutional Scaling: The insurance sector is rapidly scaling up its focus on climate adaptation, with a strong emphasis on embedding climate risk reduction in operational plans. Initiatives like the Nairobi Statement are transitioning from ideas to implementation. International insurance regulators are working on facilitating local market action on climate adaptation. There are dialogues between the industry and the EU for a public-private partnership to address climate-related exposures. The US is also seeing discussions on expanding the industry's role in reducing climate-related risks, driven by market pressures and federal support. Overall, COP27 has sparked a broader industry dialogue, and now leaders must develop sustainable strategies for impactful climate adaptation.

However, addressing climate risks and adaptation needs can be highly region-specific, posing challenges in developing a globally applicable framework that meets diverse market requirements, while the uncertainty in climate change projections further complicates long-term risk assessment.

The insurance sector's unique expertise in risk assessment and pricing offers more efficient allocation and financing options, making them key players in proactive risk mitigation and A&R solutions, particularly regarding risk engineering. In light of this, this Outcome has broad applications across all resilience systems, including the creation of innovative offerings to extend coverage to vulnerable populations such as EMDEs and conflict-affected areas, applying risk engineering principles to both public and private sectors, and ensuring that capital projects prioritize resilience.

OUTCOME 4:

Multilateral Development Banks and Development

Partners support scaling-up private finance by providing dedicated resources to support credit enhancement and de-risking of adaptation investments

Private finance for adaptation mobilized by Official Development Assistance increased from US\$1.9bn in 2018 to US\$4.4bn in 2020, noting a substantial contribution from a large energy project in Mozambique at around US\$800m.¹ However, most multilateral organizations still focus on mobilizing private finance for climate mitigation and only a few prioritize adaptation activities, with the African Development Bank (AfDB), European Bank for Reconstruction and Development (EBRD), and Global Environment Facility (GEF) mobilizing the largest volumes of private finance for adaptation.

Furthermore, private finance mobilization is a minor objective for only 18% of all providers' portfolios, and among them, just about half include climate as a core objective.²

A [survey](#) done by the Organisation for Economic Co-operation and Development (OECD) with bilateral and multilateral providers additionally affirmed the difficulties encountered by providers in increasing the proportion of private finance mobilized for climate adaptation within their overall private mobilization. This includes the greater capability to attract private finance for climate change mitigation compared to adaptation, primarily because climate-related activities in sectors addressing mitigation, such as energy, tend to be more lucrative and substantial. Furthermore, several providers noted that private investors generally possess less familiarity and understanding of climate adaptation projects, diminishing their motivation to invest in this particular area.

To boost private finance mobilization, the survey also underscores the necessity of structuring and formulating adaptation projects and programs in a manner that incorporates financial schemes with banks, corporations, and other private stakeholders right from the design phase. Guarantees, syndicated loans, and project finance are some pivotal ways to spur private finance for climate adaptation. Additionally, adjusting incentives and aligning risk and return criteria with the mandates of commercial investors can enhance the robustness and attractiveness of financing models, potentially resulting in a greater influx of private capital into climate and nature initiatives.³

1 OECD, [Private Finance Mobilised by Official Development Finance Interventions](#), 2023

2 Ibid

3 University of Cambridge Institute for Sustainability Leadership, [Everything, everywhere all at once: How can private finance be unlocked for nature and climate in the international financial architecture?](#), 2023

While much still needs to be done to evolve and integrate private finance for adaptation in the international financial architecture, there are emerging commitments from bilateral and multilateral providers to mobilize private capital. For instance, in 2020, the IFC set a goal that 35% of its new commitments by 2030 would be dedicated to climate change adaptation. USAID also took measures to increase funding through various mechanisms, including a commitment to doubling private sector investments in adaptation and resilience in 20 countries vulnerable to climate change.⁴

4 OECD, [Private Finance Mobilised by Official Development Finance Interventions](#), 2023

SAA

**SHARIM
ADAPTATION
AGENDA**



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We would like to acknowledge the valuable contributions from Task Force Co-leads whose expertise shaped the content of the chapters. They include:

Report Chapters	Organizations
Overall report	COP27 Presidency, COP28 Presidency, Climate Champions Team (CCT), Marrakech Partnership for Global Climate Action (MPGCA), Global Resilience Partnership (GRP), Food and Agriculture Organization of the United Nations (FAO), Boston Consulting Group (BCG)
Coastal & Ocean	Ocean & Climate Platform (OCP)
Food & Agriculture	Food & Agriculture Organization of the United Nations (FAO), International Union for Conservation of Nature (IUCN)
Water & Natural	Stockholm International Water Institute (SIWI), International Union for Conservation of Nature (IUCN)
Infrastructure	International Renewable Energy Agency (IRENA), International Transport Forum (ITF - OECD), Sustainable Low Carbon Transport Partnership (SLOCAT)
Health	World Health Organization (WHO), International Federation of Red Cross and Red Crescent Societies (IFRC)
Human Settlements	ICLEI
Finance	Institutional Investors Group on Climate Change, United Nations Economic Commission for Africa (UNECA), CDP, Atlantic Council

We would like to acknowledge the valuable contributions from Task Force Co-leads whose expertise shaped the content of the chapters. They include:

Report Chapters	Organizations
Ocean & Coastal	Ocean Risk and Resilience Alliance (ORRAA), Stimson Center, UN Environmental Program (UNEP), Global Mangrove Alliance (GMA), Global Funds for Coral Reefs (GFCR),
Food & Agriculture	Just Rural Transition, Chatham House, World Wildlife Fund (WWF), Stronger Foundations for Nutrition, World Resources Institute (WRI)
Water & Natural	World Wildlife Fund (WWF), Sanitation and Water for All (SWA), The Nature Conservancy (TNC), United Nations Environment Programme (UNEP)
Infrastructure	International Coalition of Sustainable Infrastructure (ICSI), United Nations Environment Programme (UNEP)
Human Settlements	UN Habitat, Habitat for Humanity International, Extreme Heat Resilience Alliance (EHRA), Roof Over our Heads (ROOH), UN Environmental Program (UNEP), French Solid Waste Partnership
Finance	Atlantic Council, Climate Champions Team, Climate Policy Initiative (CPI)
Planning	CDP, Climate Champions Team, ICLEI, Regions4

APPENDIX 1: ADDITIONAL CASE STUDIES

System	Position (Outcome/Enabler)	Case Study
Food & Agriculture	Planning & Policy	In Egypt, the SCALA Programme uncovered climate risks, vulnerabilities, and adaptation prospects and contributed to the country's efforts of integrating agriculture into the National Adaptation Plan (NAP). Through sub-sectoral assessments, SCALA also worked with Egyptian government bodies like the Ministry of Agriculture and Land Reclamation, The Ministry of Water resources and Irrigation and UNESCO to develop country-specific adaptation indicators. These indicators will inform the NAP's Monitoring and Evaluation (M&E) framework and track scaled progress and improve Egypt's overall capacity to adapt to climate change.
	Outcome 1 (sustainable agriculture)	CNOP-CAF, partner of the Climakers, is helping cocoa farmers in Central-Africa to adopt agroforestry techniques. More than 100 hectares have been cultivated following these sustainable guidelines, helping farmers to increase yields, while restoring forests.
Coastal & Ocean	Outcome 1 (Mangroves)	The Delta Blue Carbon Project in Pakistan, is rooted in 350,000 hectares of tidal wetlands on the south-east coast of Sindh in Pakistan. It is the world's largest mangrove restoration project with more than 86 thousand hectares of area planted, creating a significant carbon market (+142 million tons of CO ₂ eq) that is genuinely nature-positive. This project has built resilience of more than 49,000 people, providing erosion control and storm protection as well as tangible benefits including subsistence farming, fisheries and water filtration creating more than 21,000 jobs.
	Outcome 2 (Coral reefs)	Micronesia is a region highly dependent on its coral reef ecosystems, and also highly vulnerable to the impacts of climate change. The Micronesia Challenge aims to effectively conserve and manage 50% of its marine area by 2030, including expanding networks of Locally Managed Marine Areas to protect the most climate resilient 'super' coral reefs with support from the Global Fund for Coral Reefs. Locally-led approaches to coral reef management like the ones being promoted in Micronesia can increase community guardship and reduce unsustainable practices.

Water & Nature	Knowledge & Capacity	<p>The Southeast Asia Climate Adaptation and Resilience Alliance (SEACAR), established by WWF, Think City and BCG, aims to spur collaborative action by emphasizing the importance of nature-based solutions and climate analytics / AI in fortifying the resilience of cities and communities across 6 key interlocking themes: Natural Ecosystems, Infrastructure, Trade, Water, Agriculture and Health. The alliance is set to formally launch at COP 28, followed by the release of its first report 'The Might of Nature and the Power of Technology: Charting a Climate -Resilient Southeast Asia.'</p>
	Knowledge & Capacity	<p>Focusing on water to build climate resilience in India. Water is not only vital for our health, but also plays a crucial role in the production of our medicines and vaccines. The effects of climate change and nature loss are putting water and health at risk, in many countries. That's why GSK is putting a focus on water as a key part of building climate resilience and contributing to a net zero, nature positive world. In Nashik, India, a water-stressed region where we operate, we have partnered with a local NGO, WOTR, on a water replenishment project designed to improve ecosystem conditions, enhance the climate resilience of local agriculture, and empower local villages to manage water resources to improve their health and livelihoods. GSK is also a founding partner of the Women + Water Collaborative in India which launched in October, working with the Water Resilience Coalition—an initiative between the United Nations Global Compact and the Pacific Institute. This program brings together companies from different sectors to leverage women's leadership to improve access to clean water and sanitation, ultimately supporting the health of local communities.</p>
	Outcome 6 (Ecosystem restoration)	<p>The UN Decade on Ecosystem Restoration is a movement, declared by the United Nations General Assembly, led by UNEP and FAO with the support of partners, to prevent, halt and reverse the loss and degradation of ecosystems worldwide. A global call to action, the UN Decade draws together political support, scientific research, and financial muscle to massively scale up restoration. In 2023, the UN Decade launched its Action Plan, with explicit targets on Biodiversity, Food, Finance, Education, Marine & Freshwater, Land, Youth, Cities, Business,, including the 350M Ha restoration target for Climate Adaptation and Mitigation.</p>

		<p>Further, with the World Restoration Flagships, already announced and forthcoming, the UN and the Decade are honoring the best examples of large-scale and long-term ecosystem restoration in any country or region, embodying 10 Restoration Principles and contributing to the implementation of all Rio Conventions, as well as SDGs.</p>
	<p>Outcome 6 (Ecosystem restoration)</p>	<p>The UN Decade for Action on Water for Sustainable Development 2018 - 2028 is a movement, declared by the United Nations General Assembly, to accelerate the efforts towards meeting water-related challenges, and was the backdrop for the 2023 UN Water conference. The objectives focus on the sustainable development and integrated management of water resources, and on the implementation and promotion of related programmes and projects, cooperation and partnerships at all levels to help achieve internationally agreed water-related goals and targets.</p>
<p>Human Settlements</p>	<p>Partnership & Inclusivity</p>	<p>Cities Solve, Cities Deliver campaign, which was launched by the Resilient Cities Network in preparation for the UN 2023 Water Conference. This campaign has a clear objective: to spotlight innovative and transformative urban water resilience initiatives taking place in cities that have the potential to be replicated and scaled. It aims to encourage cities to inspire one another by showcasing their solutions and fostering peer-to-peer learning. As a testament to the success of this initiative, 33 pioneering projects from 27 different cities have already responded to the call for initiatives, demonstrating a global commitment to advancing urban water resilience.</p>
	<p>Outcome 1 (Safe homes)</p>	<p>Build Change, a key partner in the Race to Resilience initiative leading the Climate Resilient Housing Initiative, collaborated with the Honduran Red Cross to launch an ambitious pilot project for structural reinforcement and expansion of the houses affected by Hurricanes Eta and Iota in the vulnerable Sula Valley of Honduras. The pilot was initiated in the municipalities of Puerto Viejo and Choloma, both among the most vulnerable and affected communities. The initiative consists of two main actions:</p> <ul style="list-style-type: none"> ▶ Retrofit existing one-story homes, which entails strengthening the structure of the building. ▶ Expanding some of the homes to a second story, to create a safe refuge in case of emergency

		<p>In Quelimane, Mozambique, a noteworthy initiative focuses on the construction of resilient houses with strong community involvement. The project encompasses risk mapping, the establishment of risk management strategies, and disaster preparedness measures. Notably, a total of 22 model resilient homes were constructed in three coastal cities in Mozambique. These climate-resilient houses are designed with roofs that are securely fastened to withstand strong winds, safeguarding residents and their property. Additionally, these homes are equipped with rainwater collection systems for household use, providing a valuable mitigation strategy for addressing drought-related water shortages.</p>
	<p>Outcome 4 (Social infra-structures & services)</p>	<p>Garoua, Cameroon, will equip at least 50 health centres with access to safe drinking water and waterborne diseases equipment and plans to rehabilitate and/or construct at least 375 water points in the city.</p>
	<p>Outcome 5 (Waste burning)</p>	<p>Because a high proportion (70%) of Lusaka's population lives in informal settlements, waste management in the city is a significant challenge when it comes to weather-related hazards. Areas may become inaccessible, meaning that door-to-door collections cannot be made, and waste will not be collected by services. For this reason, Lusaka has a strong solid waste management (SWM) programme in place, that includes monthly clean-ups in the city which sees the Mayor's office work directly with ward councilors as well as communities to clean out drainage systems. Part of this locally-led activity includes a desensitization programme, whereby the community, including youth, are educated on the issues around waste and climate-related flooding.</p>
<p>Infrastructure</p>	<p>Outcome 5 (Clean cooking)</p>	<p>In Melkadida, Ethiopia, UNHCR is working with the government and partners to implement a social business-oriented model that combines three solutions for displaced people and vulnerable host communities: (1) Prosopis Juliflora Transformation Center cooperatives are eradicating and carbonizing an invasive and environmentally harmful tree and producing firewood, charcoal and charcoal briquettes using a local supply chain of materials; (2) producing cookstoves with natural resources and locally supplied materials, that are more fuel-efficient, environmentally sustainable and healthier; (3) Piloting a 10m³ bio-gas digester connected to a slaughterhouse and a school latrine to reduce firewood dependency and develop clean energy cooking solutions.</p>

	<p>Outcome 8 (Resilient Transportation)</p>	<p>Ports globally are showcasing promising signals of change in planning for and implementing resilience solutions. For example, the Port of Rotterdam launched its 'Flood Risk Management Programme' to manage the risk of flooding up to 2100 in an adaptive and flexible way. Also, the Port of Baltimore developed its 'Climate Resilience & Adaptation Strategy', a 3-pronged approach to building resilience of port operations: (1) MIGRATE terminals out of flood plains, ELEVATE new structures 2 feet above 100y flood levels, and MITIGATE potential damage by reinforcing structures whenever maintenance is done)</p>
<p>Finance</p>	<p>Mechanisms</p>	<p>Under the CRAFT strategy, Lightsmith invested in Solinftec, a leading precision agriculture technology company based in São Paulo, Brazil and Indiana, USA. As the operating system of the farm, Solinftec uses a suite of tech-enabled hardware, IoT, and SaaS products for monitoring and optimizing on-farm operations to reduce costs and environmental impacts and to improve yields. The company's solutions are deployed across more than 27 million acres and 11 countries. At COP 28, CRAFT will announce its investment in a global consulting and analytics company with expertise in climate resilience and water.</p>
	<p>Mechanisms</p>	<p>The Africa Adaptation Acceleration Program (AAP) is a joint initiative of the African Development Bank and the Global Center on Adaptation (GCA) with a goal to mobilize \$25bn over five years to accelerate and scale climate adaptation action across the continent. In its first 24 months, the AAP has integrated adaptation into over \$5.4bn of investments, securing resilient development objectives across 27 African countries. The AAP integrates adaptation solutions through interventions in four priority areas – food security, infrastructure and nature-based solutions, youth entrepreneurship and adaptation jobs, and adaptation finance. Each pillar of the AAP has set ambitious goals that collectively aim to influence \$25bn in downstream investments by 2025. The Acceleration Program is supported by the AAP Upstream Financing Facility, managed by GCA.</p>

	<p>Mechanisms</p>	<p>Leveraging climate impact financing through cross-sector partnerships to advance sustainable supply chains, achieve impact targets, and unlock new markets, Resonance Global manages a Global Development Alliance (GDA) for a PepsiCo and USAID partnership that Invests in Women to Strengthen Supply Chains to demonstrate the business case for women’s economic empowerment and show how elevating women in supply chains can lead to greater growth, profitability, and sustainability. This financial model has deployed over \$15m in capital from both donor agencies and the private sector to create adaptation and resilience for people most impacted by climate shocks and disruptions.</p>
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