

Sharm El-Sheikh Adaptation Agenda

TECHNICAL REPORT

2030 Adaptation Outcomes for Adaptation & Resilience Finance

Boston Consulting Group and UN Climate Change High-Level Champions Joint Publication



Marrakech
Partnership



TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
I. INTRODUCTION TO THE SHARM EL-SHEIKH ADAPTATION OUTCOMES FOR FINANCE	3
II. A&R FINANCE: THE NEXT MAJOR CLIMATE FINANCE OPPORTUNITY	4
III. THE IMPERATIVE, AND OPPORTUNITY, TO MOBILISE PUBLIC AND PRIVATE FINANCE FOR A&R	6
IV. PUBLIC SECTOR: ADAPTATION OUTCOME #1	8
V. PRIVATE SECTOR: ADAPTATION OUTCOME #2	11
VI. INSURERS: ADAPTATION OUTCOME #3	14
VII. CALL TO ACTION	16
APPENDIX: PARTNERS, ORGANISATIONS, AND INITIATIVES	18
ACKNOWLEDGEMENTS	19

EXECUTIVE SUMMARY

There is growing appreciation, from both public and private financial actors, of the imperative to finance adaptation and resilience (A&R). Estimates of the costs of A&R range from \$140 billion to \$300 billion annually by 2030 in developing countries alone. As physical impacts from climate change continue to accelerate, financial institutions need to work together to understand and act on risks. Private finance could be a critical enabler of A&R, enhancing global ability to finance solutions that protect lives and livelihoods. Collaboration and innovation within the finance sector, and with other state and non-state actors, will be essential to build practical tools, guidance and the investment case for A&R.

The financial system requires a transformational shift. Financing flows must align with a more resilient society, including accelerating evolutions in taxonomies and financial disclosures and factoring physical climate risks more systematically into investment decisions. More and better forms of financing for A&R must be mobilised, especially to the most vulnerable countries. Developing and scaling innovations in financial instruments, as well as in critical actions by national governments, is necessary to improve the enabling conditions needed to attract financing. The insurance sector also has a critical role to play both to close the protection gap and to lead on initiatives that can reduce climate-related risks.

In the Race to Resilience, the UN Climate Change High-Level Champions are calling for action around **three Sharm el-Sheikh Adaptation Outcomes for Finance: for public finance actors to increase the volume and share of A&R finance, for private finance actors to help mobilise the \$140 billion to \$300 billion needed annually by 2030, and for insurers to institutionalise a longer-term industry approach to A&R.**

In this report, we deep dive into the Sharm el-Sheikh Adaptation Outcomes for A&R Finance and offer solutions for how they can be delivered.

This report should be read in conjunction with the 2030 Adaptation Outcomes for A&R Planning, 2030 Adaptation Outcomes for Human Settlements, and 2030 Adaptation Outcomes for Food & Agriculture reports.

I. INTRODUCTION TO THE SHARM EL-SHEIKH ADAPTATION OUTCOMES FOR FINANCE

The **Sharm el-Sheikh Adaptation Outcomes** are a series of bold actions that will enable 4 billion people to become more resilient to the increasingly frequent and severe impacts of climate change. Led by the UN Climate Change High-Level Champions and amplified by the Egyptian COP27 Presidency, the Adaptation Outcomes include actions across the systems that form the basis of our collective global resiliency, including food and agriculture, water, oceans, infrastructure, and human settlements. Critical enablers to build resilience across these systems are robust adaptation and resilience (A&R) planning and A&R finance.

To deliver on these solutions, finance will play a critical role. Specifically, the financial system needs a fundamental transformation to integrate A&R into the allocation of capital across all sectors, especially those that are most affected by climate change. Much more effort is needed to advance the deployment of financing towards these solutions, including aligning on taxonomies that form the basis for integrating A&R into capital markets. Companies, investors, and governments need much clearer ways to make the case to invest now to avoid the costs of inaction and to ensure that A&R projects remain prioritised amidst more challenging macroeconomic conditions and rising interest rates.

To catalyse A&R financing globally, the UN Climate Change High-Level Champions are advocating action around **three Sharm el-Sheikh Adaptation Outcomes for A&R Finance** launched at COP27:

- 1) Public finance actors increase provision of climate finance and allocate 50% of climate funds to A&R**
- 2) Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing A&R so as to enable the mobilisation of the \$140 billion to \$300 billion by 2030 that will be needed across both public and private sources**
- 3) Global property and casualty insurance sector has an industry capabilities framework, actively supports project implementation, and institutionalises a longer-term industry approach to climate adaptation**

These outcomes and targets were identified and defined by the Climate Champions team in consultation with leaders from finance, philanthropy, and civil society. Implementing these actions will require action now from leaders across the public, private, and social sectors. They were also informed by the Glasgow Climate Pact, which calls upon private and public financial actors to enhance mobilisation to deliver the scale of resources needed to achieve climate plans, particularly for adaptation, and to explore innovative approaches for mobilising finance for adaptation from private sources.¹

¹ UNFCCC. Glasgow Climate Pact Article 19 (2021)

II. A&R FINANCE: THE NEXT MAJOR CLIMATE FINANCE OPPORTUNITY

The physical impacts from climate change continue to accelerate, especially in the most vulnerable communities. Public and private sector investors are increasingly recognising the imperative to finance A&R efforts that will protect people, livelihoods, and ecosystems, particularly in developing countries.²

The negative impacts of climate change are rapidly accelerating, with devastating impact on local communities and global supply chains. Weather, climate, and water hazards have increased more than fourfold from 1970–79 to 2010–19.³ By 2040–60, 1 billion people are projected to be at risk from coastal-specific climate hazards under all climate scenarios.⁴ With the growing ecosystem of data, technology, and fintech players aiming to improve capabilities in climate scenarios and forecasting, governments, sectors, communities, and companies alike are increasingly able to quantify the potential negative impacts of climate change. Global supply chains are also under threat; for example, projections show that climate change is impacting global food security, with yields of major crops declining and food prices rising 84% by 2050.^{5,6}

There is an even more urgent social and financial imperative to invest in A&R. According to the World Meteorological Organization (WMO), disasters in the last 50 years attributed to weather, climate and water hazards caused more than 2 million deaths and \$3.6 trillion in losses globally, amounting to approximately 115 deaths and \$200 million in losses daily.⁷ Banks and financial regulators are increasingly recognising the physical risks associated with climate change as a material financial risk. The Network for Greening the Financial System now has 114 member central banks that are working to address climate-related risks. New Zealand has made climate disclosures mandatory for large financial institutions starting in 2023.⁸ The US Securities and Exchange Commission in 2022 proposed the inclusion of certain climate-related disclosures, “including information about climate-related risks that are reasonably likely to have a material impact on their business, results of operations, or financial condition.”⁹ Other regulators are also following suit, including those in France, the United Kingdom, and Australia.

The actions required to protect lives and livelihoods are increasingly well understood. A growing number of countries, cities, and companies are starting to make forward-looking A&R plans. As of 2021, approximately 20% of countries have plans in place;¹⁰ however, significant progress still needs to be made to increase A&R planning and ensure plans have strong analytical foundations and strategies. These plans create the investment pipeline that investors are looking for to deploy financing at scale.

² UNFCCC. Paris Agreement, Article 7(2) (2015).

³ WMO (2021); WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970-2019).

⁴ IPCC. Sixth Assessment Report (2022).

⁵ IPCC. Sixth Assessment Report (2022).

⁶ CGIAR (2014).

⁷ WMO (2021); WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970-2019).

⁸ Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act

⁹ US Securities and Exchange Commission (2022).

¹⁰ UN Environment Programme. Adaptation Gap Report 2021

An increasing number of companies are also taking actions to address physical risks, creating new opportunities for engaging the private sector on projects that will protect company assets and communities alike. Of approximately 7,000 disclosing companies, 3,659 reported physical climate risks in 2018 to CDP; the number rose to 4,475 (of approximately 13,000 disclosing companies) in 2021. This signals that companies are beginning to recognise the financial materiality of physical climate risks, which enables and prepares them to plan for increasing the resiliency of their own assets and supply chains as well as the communities directly or indirectly affected by their operations. Beyond disclosures, companies are starting to take action to protect their assets, supply chains, and operations while creating spillover benefits for local communities. They are also looking for partners to help understand the underlying risks for which holistic solutions are needed.

The challenge is how to translate this awareness into actual investments, especially in the geographies most in need of financing. Meeting ambitious A&R goals will require scaling actions, commitment, innovation, and collaboration across all types of financial actors (public, private—including companies—and insurers). In light of recent market volatility and rising interest rates, the imperative to ensure that financing reaches vulnerable communities is more urgent than ever.

III. THE IMPERATIVE, AND OPPORTUNITY, TO MOBILISE PUBLIC AND PRIVATE FINANCE FOR A&R

Approximately \$46 billion was deployed towards A&R in 2019/20¹¹ from the public and private sector compared to an estimated \$140 billion to \$300 billion needed by 2030. The majority (\$27.8 billion) of this finance comprises official development assistance from developed to developing countries (including Eastern Europe). Approximately \$1 billion (around 2% of tracked A&R flows) came from the private sector while the rest came from public sources.¹² In Africa, 97% of existing flows come from the public sector.¹³

The most cited estimate of adaptation financing needs is the UN Environment Programme’s (UNEP) 2016 Adaptation Gap report, which states that financing requirements in developing countries range from \$140 billion to \$300 billion annually by 2030. Another estimate by the International Monetary Fund (IMF) states that public sector A&R investment will need to be 0.7% of global GDP (or \$590 billion, based on 2020’s global GDP), and private sector investment will need to be 1% of global GDP (or approximately \$850 billion) annually to finance retrofitting and upgrading infrastructure alone.¹⁴

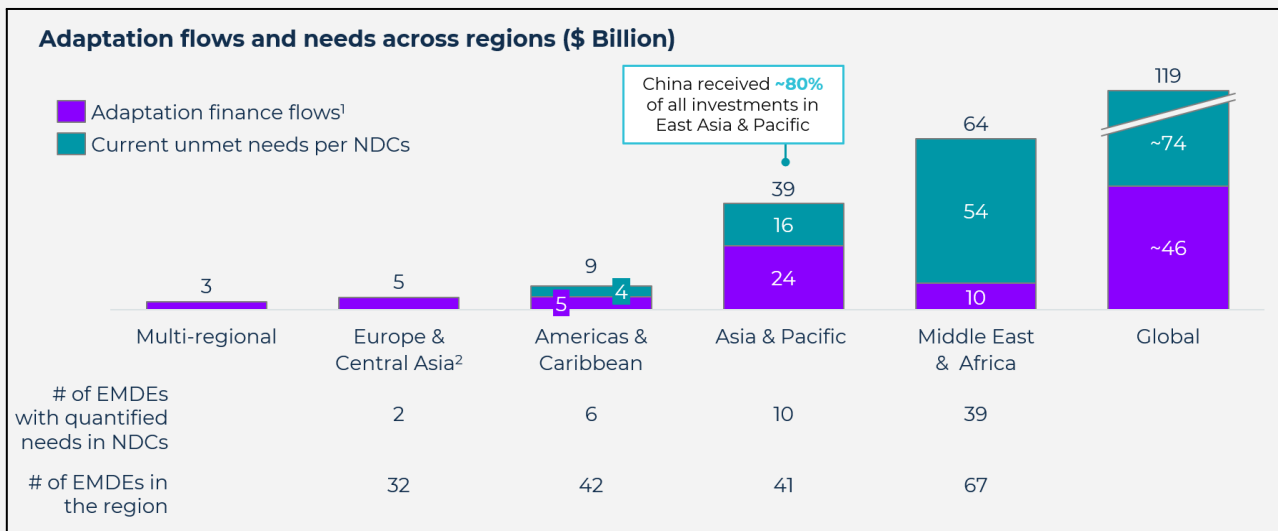


Figure 1. A&R financing flows and unmet needs per NDCs by region.¹⁵

Estimates of financing requirements based on nationally determined contributions (NDCs) in 2020 (Figure 1) show that developing countries in the Middle East and Africa experience the largest A&R financing gap globally. Due to data gaps, however, these numbers probably significantly underestimate adaptation needs across the regions. Not all countries have quantified A&R needs in NDCs. And of the countries that do have NDCs, those contributions are

¹¹ Climate Policy Initiative. Global Landscape of Climate Finance 2021

¹² Global Center on Adaptation; Climate Policy Initiative. Financing Climate Adaptation in Africa (2022).

¹³ Climate Policy Initiative (2022).

¹⁴ IMF Fiscal Monitor (2020).

¹⁵ BCG analysis; CPI Global Landscape of Climate Finance 2021; UNFCCC NDC Registry. (1) Regional adaptation finance flows in 2019–20 as reported by CPI. (2) Adaptation finance flows to Europe and Central Asia were greater than estimated need based on NDCs.

likely underestimated, as emerging markets and developing economies (EMDEs) may not have the tools or capabilities to forecast accurate A&R costs and time frames in addition to lacking a taxonomy for what constitutes A&R projects. Lastly, current estimates only capture EMDEs; including the needs of developed countries would only further increase the absolute value of A&R needs.

At COP15, OECD countries pledged to mobilise \$100 billion annually from public and private sources for the financing of mitigation and A&R in developing countries by 2020.¹⁶

Not only does this goal remain unmet, but only 25% of funds deployed in 2019 (\$20 billion of \$80 billion) was directed to A&R,¹⁷ underscoring the imperative for public sector finance to increase and catalyse much needed private investment for A&R. Initiatives such as the Coalition for Climate Resilient Investment, the Global Adaptation and Resilience Investment Working Group, and the Global Environment Facility's Challenge Program for Adaptation Innovation have been launched to catalyse private sector involvement and investment in A&R.

A new narrative is needed, as well as an accompanying set of metrics, tools, and economic models that enable investors to better invest on the basis of losses avoided versus returns delivered.

The case for investment for A&R is predicated on losses avoided versus returns delivered to an individual investor. The Global Center on Adaptation estimated that an investment of \$1.8 trillion globally in five areas of adaptation from 2020 to 2030 could generate as much as \$7.1 trillion in total net benefits.¹⁸ For example, investing \$800 million in early warning systems in developing countries could decrease the ensuing damage by 30% and prevent losses of \$3 billion to \$16 billion per year alongside saving millions of lives.¹⁹ Understanding and quantifying the socioeconomic cost of inaction—the gap between the outcomes that are likely under certain climate scenarios and the damage that could be avoided with the right A&R interventions—helps make the returns on A&R projects more visible.

In addition to direct financing, there is an urgent need to scale insurance and other solutions that facilitate better management of climate risks.

Climate disasters continue to increase in frequency and severity. A study published in the journal *Environmental Research Letters* found that the economic damage of these climate disasters could be six times higher by the end of this century than what was previously estimated.²⁰ By 2100, global GDP could be 37% lower than it would be without climate change impacts.²¹ The climate protection gap—the share of non-insured losses after a climate-related event—is still significant, with governments and taxpayers bearing much of the losses. Insurance companies can play a crucial role in providing innovative products and services. Research by the Insurance Development Forum also shows that an “increase of 1% in insurance penetration can reduce the disaster recovery burden on taxpayers by up to 22%.”²²

¹⁶ OECD

¹⁷ OECD. Statement from OECD Secretary-General Mathias Cormann on climate finance in 2019 (2021).

¹⁸ Global Commission on Adaptation. *Adapt Now: A Global Call for Leadership on Climate Resilience* (2019).

¹⁹ Global Commission on Adaptation. *Adapt Now: A Global Call for Leadership on Climate Resilience* (2019).

²⁰ Kikstra et al. The social cost of carbon dioxide under climate-economy feedbacks and temperature variability (2021).

²¹ Kikstra et al. The social cost of carbon dioxide under climate-economy feedbacks and temperature variability (2021).

²² Insurance Development Forum.

IV. PUBLIC SECTOR: ADAPTATION OUTCOME

#1

Public finance actors increase provision of climate finance and allocate 50% of climate funds to A&R

Sharm El-Sheikh Adaptation Outcome #1: Public finance actors increase provision of climate finance and allocate 50% of climate funds to A&R

There is a need to deploy urgently needed A&R funds from the public and private sectors to the most vulnerable countries.

Target: This is based on existing calls from the Glasgow Climate Pact and the Paris Agreement, which have already created a framework for action by public actors in developed countries. The Glasgow Climate Pact “urged developed country Parties to at least double their collective provision of climate finance for adaptation to developing country Parties from 2019 levels by 2025.” The Paris Agreement, meanwhile, stated that the “provision of scaled-up financial resources should aim to achieve a balance between adaptation and mitigation,” which was then reinforced by UNFCCC Secretary-General António Guterres at COP26.

Solutions for delivering on the Adaptation Outcome

Achieving the goal will require multiple strategies across both domestic and international levels.

1. **Enable greater sovereign financing for A&R.** Some of the most vulnerable countries are also highly debt constrained. There is a particularly acute gap for much-needed grant-based funding from both public and private sources to meet the needs of these vulnerable countries. In addition, there are measures that can be taken to help improve the quality of debt-based financing, such as:
 - **Debt swaps** could enhance A&R action while alleviating the sovereign debt burden. For example, in 2021, the Nature Conservancy bought back an approximately \$553 million superbond from the government of Belize at a discounted price. In return, Belize agreed to spend approximately \$4 million a year on ocean conservation until 2041.²³ While this has been a tremendous benefit to the country, experience has shown that these transactions are extremely complex mechanisms to set up and may not prove scalable in the long term.
 - **Debt relief** is another mechanism to alleviate debt while spurring funding towards broader economic and development goals. In 2005, for example, debt relief was offered by the IMF, World Bank, and the African Development Bank (AfDB) for heavily indebted poor countries in exchange for accelerating progress towards the Millennium Development Goals (MDGs).²⁴ As the debt situation worsens in a number of EMDEs, and as the international community begins to explore options to restructure debt, international financial institutions and bilateral donors should begin to develop options to include A&R within

²³ IMF (2022).

²⁴ IMF (2021).

debt-restructuring programmes. This would enhance funding for A&R action while alleviating sovereign debt burdens.

2. **Expand efforts to assist sub-sovereign entities in accessing international lending for financing A&R projects.** Cities, states, and state-owned enterprises are at the forefront of A&R, often owning and/or operating critical assets that require A&R financing. However, their access to international capital markets can be constrained by regulatory and internal capability constraints. Estimates by the World Bank show that “less than 20% of the 500 largest cities in developing countries are deemed creditworthy in their local contexts,” severely constricting their capacity to finance investments.²⁵

Efforts that assist sub-sovereign entities in accessing international capital markets can be critical to increasing financing at local levels, where there are significant funding responsibilities for A&R. One example of such an effort is the City Creditworthiness Initiative (CCI), created by the World Bank in partnership with the Sub-National Technical Assistance (SNTA) program, the Rockefeller Foundation, and the Korea Green Growth Trust Fund. The CCI helps subnational entities improve creditworthiness and tap private and international markets with capacity-building programmes that foster environments for subnational borrowing and technical assistance to develop climate-smart infrastructure projects.

3. **Position A&R within debt capital markets.** Notably, there is growing institutional investor demand for sustainably labelled assets, as evidenced by the approximately 48% annual growth of green bonds from 2014 to 2021 (Figure 2). Developing countries, however, face challenges with low sovereign credit ratings and high advisory fees, which are bottlenecks when it comes to green bond issuances. Aggregation, securitisation, and covered bonds are established mechanisms for addressing these issues in the conventional bond market.²⁶

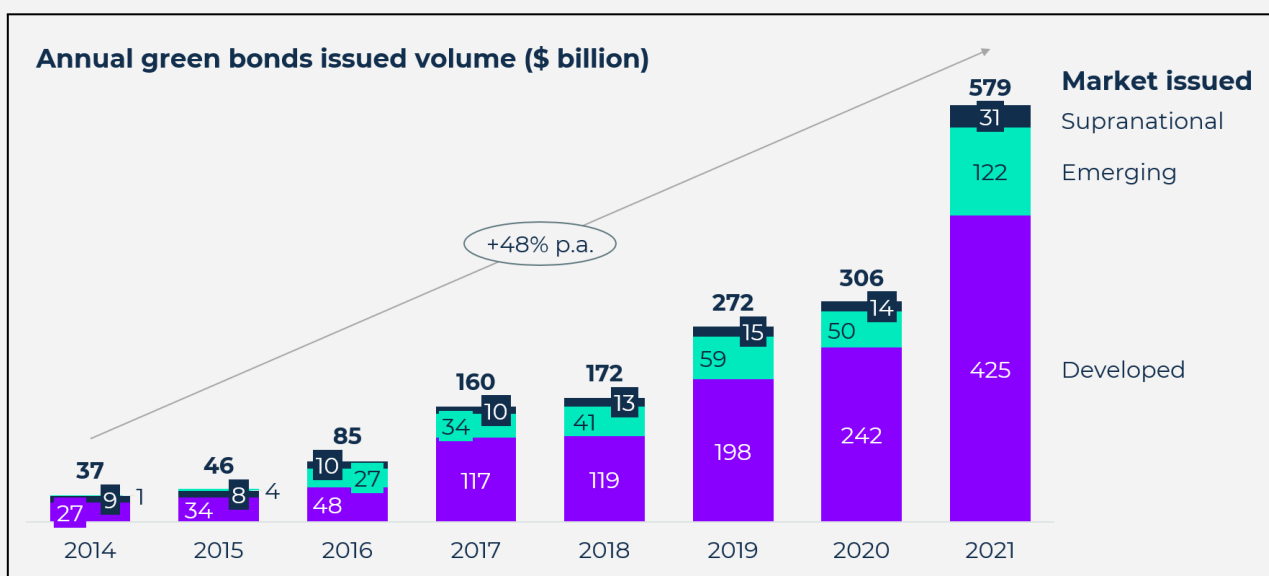


Figure 2. Annual green bonds market volume, 2014–21²⁷

²⁵ World Bank

²⁶ Global Center on Adaptation. Green Bonds for Climate Resilience (2021).

²⁷ BCG analysis; Climate Bond Initiative (2022).

Including A&R activities in sustainable finance taxonomies will be critical to mobilise capital markets. Until recently, the Standard and Certification Scheme for green bonds has focused primarily on mitigation. Efforts that have helped drive these growing pools of capital to critical A&R use of proceeds include the Climate Resilience Principles developed by the Climate Bond Initiative (CBI). CBI developed the principles to support the mainstreaming of A&R considerations across all green bonds by providing a methodology for selecting green-bond-eligible A&R projects. These projects include those that enhance the climate resilience of assets (e.g., retrofitting and upgrading infrastructure) and those that aim to increase the resilience of broader systems (e.g., flood defences, mangrove conservation).²⁸

4. **Utilise blended finance funds and vehicles to mobilise greater private sector finance for A&R.** Investors are structuring and raising funds in which catalytic capital is blended at the fund level as opposed to the project level, which allows larger pools of capital to be mobilised. Such mobilisation can in turn be deployed with greater efficiency. Multilateral development banks (MDBs) and bilateral agencies have a critical role to play in A&R, including providing catalytic financing, supporting early-stage project development, and assisting countries in their efforts to create more enabling business environments. An example of actors working in this space are Invesco and GCA. Invesco EMEA has entered a co-operation agreement with the Global Center on Adaptation (GCA) specific to A&R-related investments in the most climate-vulnerable regions, such as least developed countries (LDCs), small island developing states (SIDS), and Africa. The relationship focuses on mobilising private capital and scaling up A&R investments in these targeted regions.²⁹
5. **Create the environment for private sector investment to expand adaptation flows.** National governments will need to accelerate efforts that facilitate more A&R financing. This includes addressing the enabling environment for A&R, such as permitting, legal structures, and facilitating project pipeline development. They can also deploy strategic forms of catalytic funding and associated technical assistance through national development banks or comparable entities.
6. **Facilitate greater project pipeline development and reduce barriers to investment.** A key challenge with A&R financing is the lack of quality projects at scale. Efforts to support project pipeline development and improve linkages between projects and financiers can help address this. For example, the Adaptation & Resilience Investors Collaborative is an international partnership of development finance organisations that aims to accelerate and scale up investments, particularly from the private sector, to achieve the adaptation goals of the Paris Agreement. The collaborative aims to help overcome systemic barriers and market failures hindering private investments in A&R. They plan to leverage the toolboxes, reach, and networks of the organisations involved; galvanise the practical collaboration and partnerships needed to develop domestic markets for A&R business solutions; and accelerate their uptake.³⁰

²⁸ Climate Bonds Initiative. Climate Resilience Principles (2019).

²⁹ BCG expert interview.

³⁰ British International Investment (2022).

V. PRIVATE SECTOR: ADAPTATION OUTCOME #2

Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing A&R so as to enable the mobilisation of the \$140 billion to \$300 billion by 2030 that will be needed across both public and private sources

Sharm el-Sheikh Adaptation Outcome #2: Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing A&R so as to enable the mobilisation of the \$140 billion to \$300 billion by 2030 that will be needed across both public and private sources

The private sector must play a key role in aligning the financial system towards making more resilient investment decisions and increasing the flow of capital into A&R.

Target: This target is based on estimates in the UNEP's 2016 Adaptation Gap Report that \$140 billion to \$300 billion is needed annually by 2030 from both public and private sources to close the adaptation gap in developing markets. According to the UNEP's 2021 Adaptation Gap Report, the needs are more likely to be on the higher end of that range.

Partner spotlight: The **Coalition for Climate Resilient Investment (CCRI)** was launched at the UN Climate Action Summit in September 2019 as part of the UK government's Commitment in Resilience. CCRI is focused on the development and piloting of methodologies capable of addressing the current mispricing of physical climate risks in investment decision-making. The coalition works on physical climate risks only, prioritising the most vulnerable but delivering to all regions. The Physical Climate Risks Assessment Methodology (PCRAM) that has been developed by CCRI helps project developers and capital providers identify asset-specific climate risks and their related materiality thresholds. It includes physical, operational, commercial, and financial KPIs that help determine the extent to which identified climate risks may affect the ability of an asset to operate and meet its various obligations and achieve financial returns. The methodology also considers resilience options and the expected financial benefits embedded in mitigating climate risks at the asset level. PCRAM is a collaborative and iterative process involving engineering consultants and climate data specialists.

Partner spotlight: YAPU Solutions fosters access to resilience finance for the most vulnerable in the Global South. The Berlin-based fintech, with offices in Ecuador and Rwanda, developed risk-analysis software for financial service providers (FSPs) that assesses climate vulnerabilities, environmental indicators, and social scores alongside detailed cash flows. Equipped with this data, FSPs can actively promote resilience finance through dedicated green loan products (e.g., drip irrigation systems, water reservoirs, solar pumps, storm shutters, and water filters, among others). With CIAT/CGIAR and GAWA Capital, YAPU initiated **Scale for Resilience**, which pledges to make 3 million smallholder farmers and rural communities more resilient by 2030 by improving the conditions for and providing access to finance for nature-based solutions across the full financial value chain.

Partner spotlight: The **Institutional Investors Group on Climate Change (IIGCC)** is a coalition of approximately 350 institutional investors, mainly asset owners and asset managers, that aims to help drive significant and real progress by 2030 towards a net-zero and resilient future. IIGCC supports and helps define public policies, investment practices, and corporate behaviours that address the long-term risks and opportunities associated with climate change.

Solutions for delivering on the Adaptation Outcome

- 1. Systematically integrate physical climate risks into investment decisions.** A fundamental challenge with unlocking private sector A&R financing is that the financial system does not adequately factor in A&R to the allocation of capital. Too much financing continues to flow into activities and projects that are not made to withstand the growing physical risks of climate change and, even worse, into efforts that fuel GHG emissions. Too little financing is flowing into more resilient assets. Noting the many ways that increasing physical risks are disrupting asset prices and economic systems, financial regulators, supervisors, and policymakers have a critical role to play in integrating A&R into the financial system itself as part of their broader duty to drive financial stability. Specifically, they can accelerate progress in areas including climate-related disclosures, research on how physical risks contribute to financial instability, the development of climate scenarios, and incorporating climate factors into stress-testing requirements. Advancing disclosure requirements will play a critical role in improving the availability of climate data, which is essential to enhance climate risk decision-making capacities and accelerate the development of frameworks for appropriately pricing the physical impacts of climate risks into investment decisions with risk-return profiles.
- 2. Develop credible A&R taxonomies.** Improving A&R accounting and increasing investments are credible definitions of use of proceeds that advance A&R outcomes. Taxonomies that are practical to implement yet also rigorous and science-based will be essential to ensuring that financing is being directed to projects firmly aligned with credible NDC and NAP (National Adaptation Plan) pathways. Clear taxonomies will also enable improved abilities to report on A&R financing flows, furthering the ability to guarantee coordination, provide predictable funding, and ensure that donors are fulfilling their commitments.
- 3. Continue developing and scaling innovative products, instruments, and capabilities that enable more private financing to flow to A&R activities, especially in emerging markets.** As of 2020, the private sector share of global A&R flows was 2%. Financing from the private sector needs to dramatically increase to help meet the \$140 billion to \$300 billion needed annually by 2030 in developing countries. While the A&R financing landscape is still relatively nascent, investors are starting to develop investment vehicles and instruments and are finding creative ways to deploy more private financing towards A&R efforts. There are emerging blended finance funds that leverage concessional funding to de-risk and crowd-in private investment, particularly with a focus on sustainable infrastructure. Private companies looking at reducing emissions could also leverage the revenue generated by high-quality carbon removal credits to invest in A&R projects, such as mangrove restoration, as well as contribute more broadly to the development of a credible voluntary capital market. Public financiers—particularly the domestic public sector—could also proactively engage with corporates to identify co-financing opportunities that help companies secure their private assets and supply chains while also creating spillover benefits for local communities (e.g., upgrading critical transportation infrastructure such as roads or ports; building greater resiliency for local power generation and distribution).
- 4. Mobilise financing from companies towards efforts that protect company assets and communities alike and that unlock new business opportunities.** The costs of protecting future and existing private assets exposed to climate hazards “may be almost twice as large as in the public sector.”³¹ It is imperative that the private sector—especially companies with products and services for public good—plan for A&R

³¹ IMF

actions that build the resilience of their own assets, supply chains, and operations. This ultimately helps to build the resilience of vulnerable communities directly and indirectly affected by their operations. An example of a company taking action to protect their assets and the public is Autostrade per l'Italia (ASPI), the operator of the largest toll road network in Italy. With this initiative, ASPI has become one of the first movers in private sector A&R to meaningfully protect the safety of their customers and the critical assets that the public relies upon. This action is a result of a climate-forward long-term strategy, along with a thorough climate risk assessment framework to support A&R planning.³²

Growing private sector action in A&R could also generate new business opportunities. For example, in building a tunnel to divert and store water during floods, the city government of Malaysia's capital, Kuala Lumpur, proposed the innovative idea of utilising the tunnel for road traffic when it was not being used to divert water. By licensing their private partners to monetise the A&R asset via alternate use, the government and the private sector were able to improve business case fundamentals, reduce upfront risk, and overall contribute to the city's A&R.³³

5. **Financing the growth of the A&R solutions market.** Companies that are developing, innovating, and providing A&R solutions, such as early warning systems, geospatial data, and more-resilient building materials, will require venture and growth stage financing. For example, early-stage investors are showing increased interest in the growing number of data and technology companies that have solutions for measuring and modelling physical risks.

³² BCG expert interview.

³³ Gardiner et al. Public-Private Partnerships for Climate Finance (2015).

VI. INSURERS: ADAPTATION OUTCOME #3

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

Sharm el-Sheikh Adaptation Outcome #3: Global property and casualty insurance sector has an industry capabilities framework, actively supports project implementation, and institutionalises a longer-term industry approach to climate adaptation

To ensure that communities and households are financially resilient in the face of climate impacts, there is a need to mobilise the full breadth of insurance sector capabilities.

Partner spotlight: Officially launched at COP23, the **InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions** is committed to covering 500 million poor and vulnerable people against climate change effects and natural disasters with risk-layered and disaster-risk finance strategies on a sovereign level, as well as with inclusive microinsurance schemes that foster resilience for households, enterprises, and small-scale farmers. It will achieve this by bringing together G20 and V20 countries, civil society, international organisations, the private sector, and academia to deliver faster, more reliable, and cost-effective responses to natural disasters and climate shocks in EMDEs.

Partner Spotlight: The **Insurance Development Forum (IDF)** was announced at COP16. Its mission is to optimise and extend the use of insurance and its related risk-management capabilities to build greater resilience and protection for people, communities, businesses, and public institutions that are vulnerable to climate disasters and their associated economic impacts. It unites actors from countries, sectors, and organisations across the world to maximise the effectiveness of efforts and build strategic and operational relationships via four working groups: risk modelling, regulation and resilience policies, sovereign and humanitarian solutions, and inclusive insurance

Solutions for delivering on the Adaptation Outcome

The insurance sector is uniquely positioned to lead systems-level solutions for reducing and managing the risks associated with climate change. The insurance sector brings distinctive capabilities in assessing and pricing risks in ways that enable more efficient allocation and financing. More importantly, the sector is leading efforts to reduce risk through collaboration with public, private, and social stakeholders on initiatives. Resilience is core to the business model of insurance companies, placing them at the forefront of A&R solutions and facilitating the shift from ex-post-disaster risk management to ex-ante A&R. They should continue to build capabilities to factor in climate risks, innovate offerings that increase coverage to vulnerable populations (e.g., EMDEs, conflict-affected regions), risk-engineer both public and private sectors, and ensure that investments in capital projects factor in resilience.

1. **Innovate viable insurance products that can respond to the changing nature of climate risks and reach the most vulnerable.**

Macrolevel instruments

Sovereign catastrophe risk pools have been emerging as critical solutions for improving the financial resilience of vulnerable countries by pooling risks in a diversified portfolio, retaining some through joint reserves, and transferring excess risk to

reinsurance and capital markets. Four risk pools are up and running, with total insurance coverage over \$1.2 billion, protecting approximately 40 low- and middle-income countries across the Caribbean, Pacific, Africa, and Southeast Asia. Risk pools have helped diversify risk among participating countries, creating a more stable and less capital-intensive portfolio that is cheaper to reinsure.³⁴

Another risk-pooling mechanism that aims to help communities in poor and vulnerable countries recover faster from climate disasters is the Global Shield. In partnership with the V20, the G7 is working towards a Global Shield against Climate Risks, which aims to increase protection for poor and vulnerable people. They plan to provide and facilitate prearranged finance against disasters, offering greater financial protection and more reliable disaster preparedness and response. The Global Shield will use evidence-based, systematic, and inclusive analyses of countries' protection gaps—taking into account existing disaster risk reduction, adaptation, and CDRFI efforts—to design, fund, and facilitate interventions to address these gaps.³⁵

Blending risk transfer with risk retention policies has also been explored in recent years. For example, the African Risk Capacity (ARC) Replica Plus Macro-Insurance programme integrates insurance solutions for less frequent, more extreme hazards with contingency financing tools that trigger at more frequent, less severe hazards. According to ARC, “this blend represents an opportunity to test and refine triggers and sequences for the release of pre-positioned finance from the public and private sectors, to efficiently combine different financial instruments for different levels of risk, and to analyse the cost/benefit ratio of different combinations of risk financing instruments.”³⁶

Microlevel instruments

Micro-level instruments are increasingly being put in place to financially and socially protect low-income populations from climatic shocks. While small-scale farms are responsible for a sizable share of crop output, a key blocker to investment in more-sustainable technologies is the volatility of yields brought about by climate shocks. Index insurance for climate helps stabilise the income of the world's estimated 600 million smallholder farms.³⁷ For example, Mauritania was among the first countries to purchase an insurance policy from the African Risk Capacity (ARC) to cover droughts in 2014.³⁸ The resulting rapid payouts from a lacklustre rainy season supported food security and protected the livelihoods and assets of the most vulnerable.

2. **Make climate risk more insurable by reducing the impact of climate shocks.** Insurance as an instrument is not enough to address A&R unless it is connected to enhanced risk reduction and engineering. System- or community-level risk reduction measures are a necessary solution, especially in areas where disasters are increasingly frequent and severe. Insurers and government officials must work across silos to incentivise actions that reduce physical climate risks. For example, the World Food Programme-backed R4 initiative provides small-scale farmers with access to insurance by participating in risk-reduction activities, such as engaging in nature-based solutions that restore ecosystems or by adopting improved agricultural practices. Similarly, but at a city level instead of individual farmers, ICLEI's Urban Infrastructure Insurance Facility is launching a programme to provide technical capacity to 10 Latin American cities to assist them in identifying and deploying risk-reduction projects and complementing those efforts with city-level insurance placements and a regional risk pool.

³⁴ World Bank (2021).

³⁵ BCG expert interview.

³⁶ World Food Programme. ARC Replica (2018).

³⁷ World Economic Forum (2022).

³⁸ Global Center on Adaptation. Insurance for Climate Adaptation: Opportunities and limitation (2019).

3. **Ensure that insurers support communities through the provision of more-resilient infrastructure.** As one of the largest institutional investors, insurers must not only innovate insurance products but also make sure that their investment funds factor in climate risk and flow towards activities that enhance resilience.

VII. CALL TO ACTION

A&R financing is a major opportunity for the private sector and governments alike to take action now that will protect lives and livelihoods. Integrating A&R into the core of our financial system will also contribute to greater financial stability. Achieving these elements will require actions by leaders in all sectors.

- **Governments**
 - **National governments**, on the front lines of managing the increasing physical risks, have a critical leading role in creating an environment that can facilitate more A&R financing such as crafting regulations, incentives, and legal frameworks and accelerating the permitting process for A&R activities, among others. They also play a role in deploying strategic forms of catalytic funding and supporting project pipeline development.
 - Like national governments, **subnational governments** play a crucial role in making sure that A&R funds are directed to the right efforts with evidence-backed, actionable adaptation plans. They could also create the necessary policies to reduce risk relevant to their localities (e.g., building codes).
- **Funders**
 - **International public funders** (e.g., multilaterals and bilaterals) to play a unique role in providing technical assistance to national and subnational governments in the structuring of adaptation projects and providing the frameworks to facilitate better investment environments for both public and private capital to flow. More importantly, they also play an important role in providing catalytic funding, public-private partnerships, and other innovative tools for de-risking investments and facilitating private sector investment in A&R.
 - **Private financial institutions and institutional investors** to further integrate physical climate risks into investment decision-making, including by ensuring that investments flow towards resilience-enhancing activities. They are a catalyst in innovating mechanisms for financing A&R and making certain that products are viable for the vulnerable communities and areas most in need of A&R funding.
 - **Insurers** should 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**
 - **Data and technology companies** to make climate risk data available and accessible for national, regional, and local governments to understand climate risks and potential impacts and for financial institutions to accurately price climate risks. They also provide unique solutions that help innovate financial instruments to reach the most vulnerable (e.g., index-based microinsurance with soil moisture tech).
 - **Private enterprises**, especially those with critical assets and infrastructure, to invest to protect those assets but also to take action by participating in broader

public A&R planning and implementation (e.g., via grants through CSR initiatives, corporate foundations, and collaboration on projects with spillover benefits).

Other organisations such as credit rating associations (CRAs), philanthropies, and foundations also play a role in scaling up A&R finance. **CRAs** are important in unloading sovereign debt burdens, lower finance costs, and ensuring that long-term financing is available in developing countries. **Philanthropies and foundations** are key players in deploying grant-based funding as well as catalytic financing, advocating for climate action, and convening the right stakeholders to implement adaptation solutions.

APPENDIX: PARTNERS, ORGANISATIONS, AND INITIATIVES

Sharm el-Sheikh Adaptation Outcomes	Race to Resilience Partner	Other Organisations
Public finance actors increase provision of climate finance and allocate 50% of climate funds to A&R		<ul style="list-style-type: none"> • Global Center on Adaptation • UN Environment Programme
Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing A&R so as to enable the mobilisation of the \$140 billion to \$300 billion by 2030 that will be needed across both public and private sources	<ul style="list-style-type: none"> • Coalition for Climate Resilient Investment • Yapu Solutions • The Institutional Investors Group on Climate Change 	
Global property and casualty insurance sector has an industry capabilities framework, actively supports project implementation, and institutionalises a longer-term industry approach to climate adaptation	<ul style="list-style-type: none"> • InsuResilience Global Partnership • Insurance Development Forum 	

ACKNOWLEDGEMENTS

Sharm El-Sheikh Adaptation Outcomes for 2030 Report Collaboration

In support of the Sharm El-Sheikh Adaptation Agenda, the UN Climate Change High-Level Champions commissioned from Boston Consulting Group (BCG) a series of reports on four key adaptation and resilience (A&R) topics: Food & Agriculture, Human Settlements, A&R Planning and A&R Financing. Launched at COP27, the reports provide a comprehensive narrative and call to action on what is needed to realise the solutions and beyond.

Author Acknowledgements

Veronica Chau, Charmian Caines, Marcia Toledo, Maxine Yee, Rebecca Gibbs.

We are also very grateful to the following people who provided invaluable inputs to this effort: Hanan Sakr, Dave Sivaprasad, David Cockerill, Nili Gilbert, Kyle Peters, Katie Hill, Sagarika Chatterjee, Jorge Gastelumendi, Francis Bouchard, Zaheer Fakir, Flavia Howard.

About Boston Consulting Group

Boston Consulting Group partners with leaders in business and society to tackle their most important challenges and capture their greatest opportunities. BCG was the pioneer in business strategy when it was founded in 1963. Today, we work closely with clients to embrace a transformational approach aimed at benefiting all stakeholders—empowering organisations to grow, build sustainable competitive advantage, and drive positive societal impact. Our diverse, global teams bring deep industry and functional expertise and a range of perspectives that question the status quo and spark change. BCG delivers solutions through leading-edge management consulting, technology and design, and corporate and digital ventures. We work in a uniquely collaborative model across the firm and throughout all levels of the client organisation, fueled by the goal of helping our clients thrive and enabling them to make the world a better place.

About UN Climate Change High Level Champions

The UN Climate Change High Level Champions engage non-State actors to support governments in delivering the goals of the Paris Agreement. Working with the Marrakech Partnership - a global alliance of more than 320 major initiatives and coalitions - the Champions enhance the ambition of cities, regions, businesses and investors and other non-State actors, to collectively race towards a fair, resilient and zero carbon world.