

Harnessing the Private Sector for a Climate-Resilient World

How Businesses Can Advance
the Sharm el-Sheikh Adaptation Agenda



BCG

SAA

**SHARM
ADAPTATION
AGENDA**



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Introduction

As global warming continues and the frequency and intensity of climate impacts increase, there is an urgent need to implement adaptation and resilience (A&R) measures to protect communities, economies, and natural systems, and build resilience for 4 billion vulnerable people by 2030. The private sector is essential to achieving this. Beyond helping close the A&R finance gap, businesses are vital to the continued provision of critical goods and services amid and after climate disruptions.

In this paper, we explore the role of the private sector in contributing to global climate resilience, focusing on the actions companies can take to reduce exposure to climate-related risks, the investment opportunities in developing and scaling A&R solutions, and

the potential for mutually beneficial collaboration with the public sector. The paper begins by outlining why and how businesses can drive global A&R efforts, using the Sharm el-Sheikh Adaptation Agenda (SAA) as a guide. This agenda offers approximately 45 aspirational targets to achieve global climate resilience by 2030 across various systems and enablers. The sections that follow highlight—for each SAA system and enabler—how A&R initiatives can benefit businesses and simultaneously help build resilience for communities worldwide. We also showcase real-world examples of frontrunners already leading the way in building climate resilience. Subsequently, we outline how public and social actors can help mobilize the private sector. The paper concludes with a set of recommendations for action.



Adaptation is a strategic investment that is not just about risk management—it is about unlocking new opportunities for innovation, growth, and long-term prosperity. It is an investment in your business, in your communities, and in the world we all share. By stepping up now, the private sector can play a central role in building a resilient, climate-secure future.

Nigar Arpadarai, UN Climate Change High-Level Champion for COP29





As climate risks grow, adaptation has become critical for sustainability. Through our work with companies, we see many leading the way and taking proactive steps toward a climate-resilient future. By doing so, they not only strengthen resilience for people and communities worldwide but also gain a competitive advantage by identifying emerging risks and seizing new opportunities within their industries.

Charmian Caines, Managing Director and Senior Partner at Boston Consulting Group



Without targeted financial investments in adaptation and resilience, we cannot close the gap required to build resilience for 4 billion people by 2030. The private sector must accelerate finance flows for A&R by deploying innovative financial products that generate returns whilst contributing to resilience, especially in EMDEs. This whitepaper demonstrates that investing in A&R is not only the responsible choice but also a compelling business opportunity.

H.E. Dr. Mahmoud Mohieldin, UN Climate Change High-Level Champion for COP27



The private sector is critical to achieving global climate resilience

Despite ongoing decarbonization efforts to meet the 1.5°C target, emissions continue to rise. The negative impacts of climate change are already apparent and are expected to worsen, affecting people, economies, and ecosystems worldwide. Estimates suggest that by 2050, the world economy could shrink by up to 18%,ⁱ with immeasurable impacts on lives and livelihoods, disproportionately affecting the most vulnerable populations.

Increased financing and action from the private sector are crucial in building a climate-resilient world. Beyond helping to close the A&R finance gap currently estimated at US\$194-366 billion per year in developing countries alone,ⁱⁱ businesses provide goods and services—such as food, transport, and healthcare—which are vital to the resilience of communities, economies, and ecosystems. In addition, businesses are key innovators for the technologies and solutions that the world needs to adapt and build resilience.

Private sector leaders are increasingly viewing adaptation and resilience as a business imperative

Several barriers have hindered the private sector from acting on climate risk, including the perception that A&R is the public sector's responsibility, a lack of visibility into viable opportunities and projects, and doubts about the returns on investments in A&R. Additionally, business leaders often prioritize other issues, viewing climate impacts as hypothetical or future concerns.

Nevertheless, there is increasing recognition that A&R falls within the private sector's domain. All industries, including manufacturing, transport, health, utilities, and finance, will be impacted by climate change, facing potentially massive financial losses, asset damages, and workforce disruptions. Without appropriate adaptation measures, climate risks can cause companies to experience a loss in EBITDA of up to 25% by 2050 if global temperatures rise by more than three degrees Celsius, and half of the value of global infrastructure portfolios is at risk by 2050.ⁱⁱⁱ Furthermore, external pressures are mounting:

- **Regulations & standards:** Disclosures on physical climate risk are increasingly being required for financial institutions and corporates globally, as ISSB’s Sustainability Standards are integrated into regulatory frameworks.
- **Valuations:** Investors are increasingly considering physical risk in asset and company valuations.
- **Insurance:** Coverage in climate-vulnerable areas is becoming unaffordable or unavailable.
- **Consumer preferences:** Consumers increasingly consider climate risks in purchasing decisions, for example, by avoiding tourism destinations with high risks of extreme heat or wildfires.

As the impacts of climate change intensify, private sector leaders should work on understanding their climate risk exposure and prioritize robust A&R planning and implementation. Today, the private sector is not yet adequately prepared. Of over 6,000 listed companies across the globe assessed by the S&P Sustainability Institute, only 21% have plans to manage and mitigate physical climate risks.^{iv} Of these, many have underestimated or unassessed risks, leading to potentially inaccurate financial planning and decision-making.

Beyond the imperative, adaptation and resilience presents a business opportunity

Taking action on A&R is both an imperative and an opportunity. Companies and financiers must integrate A&R into the core of their business strategies. We see three key pathways for the private sector to act on and finance A&R:

- 1. Protecting assets, supply chains, and operations:** Implementing and financing A&R measures ensures business continuity and safeguards against value-at-risk, asset damage, and revenue losses. The cost of inaction far exceeds the cost of acting now. With 16-22% of cumulative GDP at risk by 2100 if we maintain our current level of climate action, there is a clear positive business case for the private sector to invest in A&R measures.^v These measures can yield economic benefits ranging 2 to 15 times their cost by preventing future asset damage, cost increases, and revenue losses.^{vi}

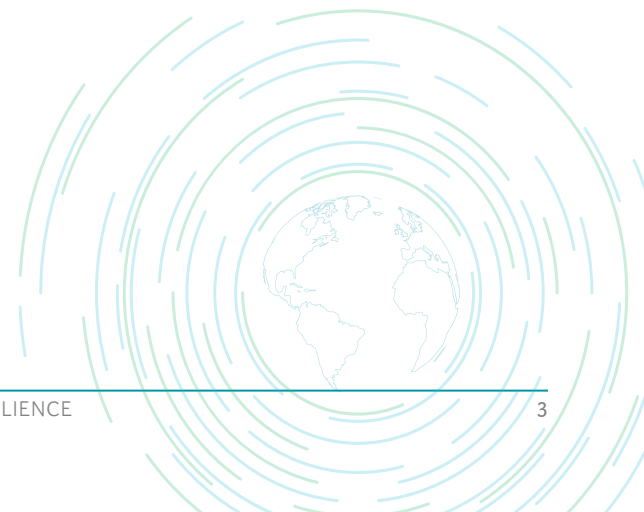
- 2. Growing the market of A&R solutions:** Managing climate impacts requires solutions. As governments and the private sector shift from planning to implementation, demand for resilience-building products and services will grow. The private sector can innovate and finance A&R solutions (for example, climate information services, parametric insurance), creating new revenue streams and solidifying their position in these emerging markets. [A study by BCG](#) shows robust investment opportunities in A&R technologies across sectors like energy, agriculture, and health.

- 3. Participating in public sector implementation:** The private sector can collaborate with the public sector to finance and implement capital projects that benefit businesses and the wider public. For example, the public and private sector can co-invest in ecosystem-based approaches to advance A&R (such as nature-based solutions), reaping the shared benefits while distributing the costs.

In short, private sector actors can engage in A&R action and financing for the benefit of their bottom lines, as well as the benefit of the communities, economies and systems in which they operate.

The private sector can turn to the Sharm el-Sheikh Adaptation Agenda to align business strategies with global A&R outcomes

[The Sharm el-Sheikh Adaptation Agenda \(SAA\)](#), launched by the UN Climate Change High-Level Champions and COP27 Presidency in 2022, offers approximately 45 aspirational targets to achieve global climate resilience by 2030 across various systems and enablers: Food & Agriculture, Health, Coastal & Oceans, Human Settlements, Infrastructure, Water & Nature, Planning, and Finance.



Resilient food and agriculture systems	Resilient health systems	Resilient coastal & oceans systems	Resilient human settlement systems	Resilient infrastructure systems
Sustainable agriculture	Health system resilience	Coastal protection	Safe homes	Grid flexibility
Food loss and waste	Health early warning systems	Coral reefs	Urban NbS	Transport infrastructure technology
Sustainable diets	Health finance	Mangroves	Early warning systems	Integration of A&R in energy planning
Biodiversity and land use	Heat action plans	Seagrass	Urban water resilience	Energy access and affordability
Agrifood finance		Marshes and kelp forests	Open waste burning	Regional power pool integration
Nutrition			Social infrastructure	Cooling
Just food systems transition				Clean cooking
				Mobility
Resilient water & natural systems	Freshwater systems	Nature finance	Water policy	Water financing
	Water and wastewater systems	NbS for Water	WASH	
Enablers				
Planning and policy	Climate risk data and analytics	A&R plans for companies	A&R plans for cities & regions	Operationalization of locally-led NAPs
Finance	Private finance	Insurance	MDB finance	Public finance

Overview of SAA Systems and Outcomes. Note: SAA Outcomes are abbreviated. See the [SAA website](#) for the full list

Companies and financiers can align their A&R efforts along the three pathways (Protect, Grow, Participate) with the SAA to ensure the actions they take contribute to enhancing resilience at local and global levels. For example, agrifood companies with supply chains in drought-prone regions can advance adoption of sustainable agriculture practices instead of switching to suppliers in less vulnerable regions, preventing revenue loss from crop failures while supporting local livelihoods. Moreover, companies can create the enabling technologies and solutions required. For example, tech companies can provide climate risk data and analytics needed by governments for A&R planning, and construction and engineering firms can design safer, more climate-resilient homes.

To support companies in their A&R efforts, the SAA has convened a private sector community of practice, which includes companies, financiers, NGOs, and coalitions, to provide resources and financing to mobilize businesses for the SAA. This community shares success stories, builds networks, and addresses barriers to private sector action and finance for

A&R. Organizations engaging with the SAA Private Sector community have contributed to private sector participation in A&R on multiple fronts:

- Publication of taxonomies, guidance, and frameworks to guide businesses in integrating A&R into their business strategies. Examples include [IIGCC’s Physical Climate Risk Assessment Methodology](#) and [C2ES, Resilience Rising, and Resilience First’s Climate Resilience Pathways Report](#).
- Convening of actors, set up of coalitions and formation of partnerships to foster cross-sector collaboration and actions toward SAA outcomes. Examples include the [Mangrove Breakthrough](#) and [the Resilient Planet Initiative](#).
- Efforts to accelerate private A&R finance mobilization. Examples include the [Call for Collaboration](#), which was coordinated by (among others) the IIGCC, UNEP FI, and Arsht-Rock, and [the Guiding Principles for Financing Climate and Health Solutions](#), which was supported by (among others) the World Health Organization and the ATACH Working Group.



Food & Agriculture Systems

In the Food & Agriculture system, there are substantial opportunities for companies to act. Climate change profoundly affects agri-food companies through its impacts on crop yields, livestock, soil health, water availability, agricultural workers, processing facilities, and distribution channels. More and more often, these disruptions lead to abrupt price hikes or empty shelves, with severe impacts on business revenues and food security. It is in the interest of agri-food businesses across the value chain (farmers, processors, distributors, retailers) to find strategies to meet the rapidly rising global demand for healthy, affordable food, ensuring reliable supply even amid climate-induced challenges.

Protecting assets, supply chains, and operations

A thorough climate risk assessment helps agri-food companies make targeted A&R investments across the food value chain. Examples could include investing in regenerative agriculture to secure yields (production), climate-controlled storage (storage and processing), and protective packaging (distribution and retail). To enable the transition to a more sustainable and resilient agri-food system, companies can offer farmers comprehensive support, including training, equipment, and funding. Additionally, companies can coordinate

with post-production value chain actors to ensure stable offtake and equitable sharing of transition costs among all value chain participants.

Growing the market of A&R solutions

There is a growing market for adaptation solutions, including climate-resilient seeds, water-efficient irrigation systems, and precision agriculture technologies. An analysis of recent sustainability tech deals involving companies that provide adaptation solutions indicates that the largest proportion of venture and private equity A&R finance flows into companies that develop solutions in the food and agriculture sector.^{vii}

Participating in public sector implementation

The private sector can leverage public sector (financial) support—particularly for projects with significant transition costs or investment risks. Moreover, the private and public sectors can collaborate to drive research on climate-resilient crops and farming practices and technologies; to develop and upgrade infrastructure, such as improved irrigation systems, flood defenses, and resilient storage facilities; and to shape an enabling policy environment.

	Sustainable agriculture practices	Biodiversity and land use
2030 SAA outcome	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	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
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> • Support farmers (with training, resources, funding) to implement agro-ecological and regenerative practices (e.g., cover cropping, crop rotation, reduced tillage). • Develop and market climate-resilient (i.e. drought-tolerant, disease-resistant) seeds. • Engage in public-private partnerships (PPPs) to promote knowledge sharing on sustainable practices. 	<ul style="list-style-type: none"> • Safeguard soil health by promoting organic farming, minimizing chemical inputs, and reducing soil erosion. • Encourage innovation in bio-based products and eco-friendly alternatives to synthetic fertilizers and pesticides (bio-fertilizers, biological pest control agents). • Collaborate with local governments and NGOs to restore degraded lands, protect biodiversity hotspots, and rehabilitate natural ecosystems.

Case Study | Grow

SunCulture: In sub-Saharan Africa, unreliable rainfall and droughts are increasingly common, affecting yields and livelihoods of farmers. SunCulture helps smallholder farmers grow more food with climate technology, financing, and a digital marketplace. The company makes, sells, finances, and services IoT-enabled solar-powered irrigation solutions that provide smallholder farmers with reliable access to water, irrigation, lighting, and mobile charging, all with a single system. By offering reliable and affordable irrigation systems, SunCulture promotes climate resilience by helping farmers adapt

to changing precipitation patterns, leading to increased yields, incomes, and quality of life. In this, SunCulture adopts a value chain approach that involves stakeholders across the value chain, such as input players, growers, and offtakers. The results are impressive: SunCulture has become the largest distributor of solar irrigation for smallholder farms in sub-Saharan Africa, with 50% market share in East Africa. In addition, 93% of SunCulture customers report an increase in agricultural production, with some farmers realizing up to a five-fold increase, and 96% report an increase in overall quality of life.





Health Systems

Climate change directly impacts human health through (among others) extreme heat, spreading of vector-borne diseases, and air pollution. There are more than 200 human diseases that can be aggravated by climate change.^{viii} This increases demand for climate-related healthcare, affects companies with workforces exposed to climate risks (for example, heat), and drives demand for non-healthcare firms offering solutions that indirectly contribute to health outcomes, such as heat early warning systems. Meanwhile, climate risks also affect the ability of healthcare systems to deliver care. For instance, weather-related events have already led to (temporary) medicine scarcities and power outages in healthcare facilities.

Protecting assets, supply chains, and operations

Healthcare companies can invest in resilience of supply chains, manufacturing facilities, distribution channels, and delivery infrastructure. Examples of potential investments include climate-resilient medical supplies (for example, temperature-stable vaccines), temperature-controlled transport and storage capabilities, refinements of freight routes, or build-up of inventory. This way, businesses can ensure the continuity of critical health services amid climate-

related challenges. In addition, companies whose staff is exposed to climate-related risks can invest in protective measures, such as protective gear, shaded workspaces, and cooling systems.

Growing the market of A&R solutions

Increased temperatures, air pollution, extreme weather events, and lack of access to clean water are expected to exacerbate climate-sensitive diseases, including heat-related illnesses, water-borne diseases, vector-borne diseases, and respiratory conditions. Businesses can develop solutions that address these climate change-induced health risks, such as advanced health monitoring systems and new or improved treatments for conditions anticipated to become more prevalent.

Participating in public sector implementation

The public and private sectors can work together to build a robust evidence base to identify where and how climate change will impact human health, and to assess the potential effectiveness of different interventions and their economic implications.^{ix} Additionally, there are opportunities for the private sector to partner with the public sector to build climate-resilient health infrastructure and to develop contingency plans (for example, for heatwaves or pandemics).

	Resilient health systems and facilities	Climate-informed health surveillance
2030 SAA outcome	Health systems and facilities are resilient to climate hazards and vulnerable populations have access to safe and quality health services	All countries have climate-informed health surveillance and early warning systems in place for priority climate-sensitive diseases, including vector-borne, water-related, airborne
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> Ensure healthcare infrastructure is operational amid climate disasters by climate-proofing infrastructure, installing backup generators, and building climate-controlled storage for medical supplies. 	<ul style="list-style-type: none"> Develop technologies that help predict incidence and spread of climate-related diseases. Support public health agencies to implement climate-informed surveillance and early warning systems with funding and technical assistance..

Case Study | Grow

Beep Saúde: Beep Saúde, a healthcare provider based in Brazil, is responding to the increasing threat of mosquito-borne illnesses—such as dengue and Zika—in Brazil. The spreading of these diseases is accelerated by the increased rainfall, deforestation, and higher temperatures associated with climate change. To respond to these climate-induced healthcare needs, Beep offers diagnostic services and vaccinations.

Beep is the leading digitally accessible, at-home health services platform in Brazil, having delivered care to patients in over 1 million homes since its inception. The company has recently secured \$16.6M in funding from The Lightsmith Group, showing investor confidence in the company’s innovative approach to healthcare solutions. Altogether, Beep is positioning itself as a leader in the market for climate-responsive healthcare solutions and helping advance the SAA outcome of health system resilience.





Coastal & Oceans Systems

Climate change directly impacts businesses relying on ocean and coastal systems, as well as businesses that operate along the coastline. For example, rising sea temperatures are already affecting the location and productivity of fish stocks, with negative impacts on fisheries and the livelihoods of people who depend on them. Without action, almost US\$3 trillion is at risk to global fisheries.^x

In the tourism industry, coastal erosion and concerns around risks of storm surges affect tourism revenue. Moreover, extreme weather events put coastal tourism infrastructure at risk—leading to increases in the cost of insurances and potential reputational damage.

Protecting assets, supply chains, and operations

Investment in restoring and protecting ocean and coastal ecosystems ensures the sustainability of businesses in the blue economy and businesses along the coastline, as well as their supporting communities. Economic opportunities include the \$65 billion saved annually by mangrove ecosystems in flood damages and the over \$4 billion in storm damage reduction

provided by healthy coral reefs. Additionally, blue carbon markets, expected to grow to \$50 billion by 2030, can finance coastal ecosystem protection and restoration, strengthening business and community resilience, while enhancing biodiversity.^{xi}

Growing the market of A&R solutions

The demand for climate resilience in coastal and ocean systems has created significant market opportunities for businesses. Companies can innovate in areas like erosion control, coral reef restoration, and sustainable aquaculture. Developing these solutions supports global climate resilience and opens new revenue streams.

Participating in public sector implementation

Collaborating with the public sector can make large-scale coastal protection and restoration projects feasible by leveraging funding, regulatory frameworks, and expertise. Through cost- and benefit-sharing mechanisms, investments can be mutually beneficial—for businesses as well as for coastal communities and ocean and coastal ecosystems.

	Coral reefs	Coastal protection
2030 SAA outcome	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.	Coastal cities are protected from ocean-based hazards by green, gray and hybrid solutions building resilience of at least 900 million people globally.
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> Invest in coral reef restoration projects. Finance public coral reef restoration projects through blended financing mechanisms. 	<ul style="list-style-type: none"> Implement solutions like seawalls, breakwaters, living shorelines, and other solutions (context-specific) to protect assets located in coastal areas. Develop coastal resilience technologies such as erosion control systems. Collaborate with public sector entities and/or other private organizations to implement and fund large-scale coastal protection initiatives.

Case Study | Grow

Archireef: Since 1950, the world has lost approximately 50% of its coral reefs. At the current rate, 90% of these ecosystems—essential for protecting coastlines from flooding and storm surges—will disappear by 2050 unless urgent action is taken. To address this challenge, Archireef pioneered the first 3D-printed reef tiles, with the goal of scaling and commercializing this technology to restore marine ecosystems globally.

Archireef’s reef tiles are eco-friendly, highly customizable, easy to assemble, and have demonstrated a significantly higher survival rate than traditional restoration methods. After three years, these tiles have

achieved an impressive 95% coral survivorship rate. In just six months, they have enhanced biodiversity by 40% and contributed to the conservation of over 15,000 corals worldwide.

Central to Archireef’s model is its focus on public-private partnerships (PPPs), including its collaboration with ADQ, an Abu Dhabi-based investment and holding company. Their subscription-based service model ensures long-term sustainability, making it easier for partners to invest in marine conservation. Archireef’s innovation supports biodiversity and the blue economy, offering both business and environmental benefits.





Human Settlements Systems

Building resilience in human settlements, especially in cities, is vital for both businesses and communities. Cities are hubs of social and economic activity, generating over 80% of global GDP and housing more than half of the world's population.^{xiii} With many companies' assets and workforces concentrated in cities, extreme weather events like heatwaves and flooding threaten business continuity and the provision of essential goods and services to urban populations.

Protecting assets, supply chains, and operations

While cities' climate risk assessments and A&R plans can originate from city governments themselves, businesses can play a critical role in informing these assessments and plans by assessing their own exposure and vulnerabilities. Subsequently, businesses can leverage cities' assessments and plans to distill implications and manage interdependencies with their own climate risk mitigation strategies. In this regard, protective measures should not only focus on business assets located in cities but also should consider the climate impacts on a company's workforce to ensure operations can be maintained amid climate hazards.

Growing the market of A&R solutions

There is increasing demand for technologies that enhance the resilience of urban areas, such as early warning systems, climate-resilient building materials, and smart infrastructure for energy and water management. By investing in these innovations, companies tap into a growing market while contributing to the resiliency of urban areas.

Participating in public sector implementation

Public sector entities often face challenges in securing financing for capital-intensive projects such as housing development and infrastructure upgrades. Private sector actors can participate in public sector-led A&R projects that generate revenue, contribute to protection of business assets, and achieve wider public benefits. For instance, companies can engage in the implementation of a city's plan to improve urban water management or co-finance the construction of green infrastructure.

	Safe homes	Waste recovery and management
2030 SAA outcome	1 billion people have better design, construction and access to finance to live in decent, safe homes	Increased municipal solid waste recovery and management in controlled facilities to reduce open burning by 60% while including the informal waste sector
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> Develop and market solutions that help homes withstand climate hazards (e.g., green roofs to absorb water during heavy rain, stilts to protect against flooding, and hazard-resistant concrete). 	<ul style="list-style-type: none"> Establish and manage modern recycling facilities that can process a wide range of materials, including plastics and e-waste. Create projects that convert waste into valuable resources, such as compost or biogas, which can be used for energy production or soil enhancement..

Case Study | Protect

Lagos Government: Human settlements worldwide are increasingly impacted by climate change, with rising temperatures, flooding, and extreme weather events threatening civilian lives and livelihoods, infrastructure, the economy, and natural ecosystems. Coastal regions like Lagos are particularly vulnerable to these impacts. International and local businesses operating in the region are directly impacted, yet they can also play a role in ensuring resilience of the city through continued provision of goods and services during and after climate disruptions. Lagos developed a robust A&R plan, launched at COP27, which included the development of a pipeline of investable A&R projects. Lagos is working

to mobilize the international and local private sector to funnel funding into public A&R projects, such as a major project to construct new waste-to-energy plants and rehabilitate existing landfills to better manage solid waste and prevent drain blockages. These efforts will reduce the risk of flooding caused by clogged drainage systems and improve overall public health. By engaging private sector financiers via public-private partnerships (PPPs) like the Harvest Waste Consortium, Lagos is transforming its waste management infrastructure into a sustainable solution. This initiative advances the SAA by protecting human settlements through waste recovery and management and by generating energy and reducing environmental impacts.





Infrastructure Systems

Infrastructure plays a central role in maintaining the resilience of communities and economies during climate-related events. Disruptions to infrastructure—including power outages or transportation failures—severely impact businesses and communities. Without resilient infrastructure, key systems such as healthcare, human settlements, and food systems cannot function effectively before, during, or after disasters.

Ensuring resilience of infrastructure is also important for private infrastructure owners and developers. Investors in infrastructure could lose more than 50% of their portfolio value to physical climate risk before 2050.^{xiii} Embedding A&R into decisions across the lifecycle (strategy, planning, and financing; design and construction; operation, utilization, and maintenance) helps companies to prepare for, and respond and recover from, the effects of climate hazards.

Protecting assets, supply chains, and operations

The private sector can implement A&R measures for existing and future infrastructure assets to ensure

the continued provision of services and safety before, during, and after climate disasters, securing revenues and long-term operational stability. Measures can include installment of flood defenses around power plants or the use of smart grids that automatically reroute power during outages. Such protective measures are particularly crucial for asset-heavy companies operating critical infrastructure and related social services such as real estate, power generation, transport services, ICT, and healthcare.

Growing the market of A&R solutions

There is increasing demand for A&R solutions that anticipate and mitigate the risks that climate change poses to infrastructure. These solutions can include physical measures, such as climate-resilient construction materials, or technology-based solutions, such as smart grid management or advanced early warning and disaster situation reporting systems. Notably, the energy sector represents over one-third of tracked private equity and venture capital funds going into small- and medium-sized adaptation solution companies, including those focusing on smart grids and sustainable batteries.^{xiv}

Participating in public sector implementation

Even when privately owned, infrastructure systems are closely tied to the public sector, providing essential goods and services like energy and transportation. Public-private partnerships and collaborations are vital

to align private infrastructure projects with (sub-)national climate adaptation goals. Such collaboration enables the private sector to leverage public sector resources (for example, de-risking capital-intensive projects), regulatory frameworks, and expertise.

	Grid resilience	Transport infrastructure tech
2030 SAA outcome	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.	Transport infrastructure is resilient to climate hazards through adoption of new technology, design and materials.
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> • Implement smart grid technologies (e.g., IoT, real-time analytics) for continuous monitoring and retrofit existing grid infrastructure with climate-resilient materials to withstand extreme weather events. • Invest in microgrids or decentralized energy systems to ensure continuous power supply during main grid failures. • Innovate use cases and deploy battery storage systems (e.g., RE co-location, ancillary services) for reliable power supply. • Collaborate with public sector to co-invest in resilient grid infrastructure projects and work with policymakers to develop regulations that promote grid resilience 	<ul style="list-style-type: none"> • Make existing transport infrastructure resilient to climate impacts through maintenance operations or retrofitting. • Ensure new infrastructure projects consider climate impacts along the project lifecycle. • Invest in the innovation of new transport infrastructure technologies that enhance decision-making (e.g., climate data and analytics), new materials, and technologies (e.g., hazard-specific resilient materials), etc. • Collaborate with the public sector to co-develop and co-invest in the resilience of critical public infrastructures.

Case Study | Protect

EDC: The Energy Development Corporation (EDC), a large producer of geothermal energy based in the Philippines, has already been confronted with the impacts of climate change. In 2013, Super Typhoon Haiyan damaged more than half of EDC's 650-megawatt geothermal facilities, forcing the company to halt operations for four months. In 2017, extreme rainfall from Tropical Storm Urduja reduced capacity of the 232-megawatt Malitbog Geothermal Power Plant by 50%. To prepare for future climate hazards, EDC implemented a range of A&R actions, such as reinforcing cooling towers to withstand stronger winds, utilizing more climate-resilient materials like fiber-reinforced

plastic in place of wood, and stabilizing slopes to mitigate the risk of landslides. In parallel, EDC worked with the Philippines' government and municipal stakeholders to provide disaster relief and recovery training and create a nationwide first responders network. Altogether, EDC's efforts led the company to maintain steady insurance premiums (which would have been increased if EDC had not taken action to prepare for climate hazards) and helped to advance climate resilience of local communities. By implementing A&R solutions, EDC can continue to support the operations of its geothermal plants while providing reliable and clean energy to communities in the Philippines.



Water & Natural Systems

Water stress is posing an increasing threat to businesses. CDP data reveals that one in five companies are already experiencing water-related risks within their supply chains.^{xv} At the same time, global demand for water is projected to rise further, by 30% by 2050. It is crucial for businesses, especially those with large water footprints (for example, agriculture, apparel, and energy), to integrate water management and stewardship into their strategies to secure water resources for their own needs as well as those of local communities.

Protecting assets, supply chains, and operations

To ensure water security, the private sector can focus on reducing its water footprint and optimizing engineered water value chains. Because water depends on natural ecosystems, solutions must work with nature on the ground. Nature-based solutions, such as restoration of wetlands, reconnecting rivers to flood plains, or replenishing soil or forests, can be cost-effective A&R solutions.

Growing the market of A&R solutions

Beyond nature-based solutions, there are technological solutions that provide the tools for a water-resilient future. They include improvements in collecting water, monitoring and forecasting flows, distributing water effectively, using water efficiently, and protecting against water-related hazards. Companies can innovate and deploy these solutions, helping other businesses and communities adapt to water scarcity and improve water quality.

Participating in public sector implementation

Effectively building resilience in water and natural systems requires cross-sector collaboration between governments, the private sector, and civil society for equitable policies such as water pricing. The private sector can also work with public and social investors to collaborate on financing mechanisms such as PPPs or Payments for Ecosystem Services that can drive large-scale projects that protect water resources for both businesses and communities.

	Freshwater Systems	Finance for Nature-based Solutions
2030 SAA outcome	Restore 300,000 kms of rivers and 350 million hectares of wetlands by 2030 and protect healthy rivers and wetlands.	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.
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> • Develop technologies such as remote sensing and drones for monitoring water quality levels and ecosystem health in rivers and wetlands. • Invest in wetland restoration projects through public-private partnerships (PPPs). • Collaborate with local governments to implement nature-based solutions (NbS) such as reforestation along rivers and wetland restoration. • Conduct comprehensive water risk assessments for facilities and supply chains in water-stressed regions. 	<ul style="list-style-type: none"> • Implement strict due diligence processes (e.g., supplier due diligence) and use innovative tech like satellite monitoring to ensure that investments do not contribute to deforestation. • Develop and market technologies that support the implementation and monitoring of NbS projects, such as drones for reforestation and remote sensing for ecosystem health assessment. • Collaborate with governments to create financial incentives for landowners and businesses to adopt sustainable practices, such as tax breaks and subsidies for reforestation and conservation activities.

Case Study | Protect and Grow

OCP: In regions increasingly affected by water stress, particularly in Africa, sustainable access to water is vital for agricultural and economic growth. OCP Group, a global leader in phosphate-based fertilizers and plant nutrition solutions, has adopted a water management strategy to meet 100% of its water needs from unconventional sources and enhance communities’ resilience in Morocco. OCP secured a €100 million loan from the International Finance Corporation to support a ~219-km water pipeline and pumping station to transport desalinated water from OCP’s existing

and future plants in Jorf Lasfar to its production facilities in Khouribga. Moreover, OCP launched OCP Green Water (OGW), a subsidiary dedicated to developing and operating wastewater treatment and desalination plants that not only support OCP’s facilities but also nearby urban areas and agricultural activities. OGW’s operations have made significant progress, with facilities in El Jadida and Safi providing water for over a year and, most recently, to Casablanca. OCP’s comprehensive water approach aligns with the Sharm el-Sheikh Adaption Agenda (SAA) by ensuring water availability for local communities.



Enabler: Planning and Policy

While many companies are beginning to incorporate climate mitigation into their business planning, few have integrated A&R into core business strategies. Currently, only 21% of companies have developed evidence-based, actionable A&R plans. Of these, many companies have underestimated or unassessed their risks, leading to potentially inaccurate financial planning and decision-making. This leaves a substantial portion of businesses vulnerable to growing climate risks.

Protecting assets, supply chains, and operations

Proactive A&R planning is essential for closing risk awareness gaps and addressing business vulnerabilities. A thorough assessment of exposure to climate risks enables companies to develop concrete, actionable plans and incorporate A&R into their business strategies. Without accurate anticipation and preparation, companies face greater consequences when climate risks materialize.

Growing the market of A&R solutions

Demand for tools and software that help companies integrate climate risks into decision-making is growing

rapidly as regulatory pressures are mounting and companies increasingly recognize that proactive risk management provides a competitive edge. This includes predictive analytics, scenario planning tools, and specialized reporting software. By offering comprehensive solutions that address both regulatory compliance and strategic business needs, companies can capitalize on these growing markets.

Participating in public sector implementation

Private sector involvement is essential for ensuring that A&R plans at national, regional, and city levels are practical and grounded in evidence. Moreover, close collaboration between private and public sector actors on climate-related policies and regulations offers businesses the clarity they need to prepare for future compliance. By contributing technical expertise, supporting capacity-building efforts, and sharing insights into anticipated challenges in A&R implementation, private sector players can play a pivotal role in aiding governments and standard-setters in the development of effective, actionable A&R plans.

	Business A&R plans	Access to data and analytics
2030 SAA outcome	2,000 companies have evidence-based, actionable adaptation & resilience plans	Universal access to data and analytics required to integrate climate risks and impacts into decision making and action across all levels
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> • Conduct comprehensive climate risk assessments and develop actionable adaptation and resilience plans. • Support other (SME) companies in the supply chain to assess climate risks and develop appropriate A&R plans by proactively sharing data, tools, and methodologies. 	<ul style="list-style-type: none"> • Collect and share climate-related datasets and models through open-data and open-source initiatives. • Engage in (local) partnerships with research institutions and organizations to enhance understanding of past, present, and future impacts.





Enabler: Finance

Until now, private sector participation in adaptation finance has been relatively low. However, there is a strong case for financial institutions—including insurers—to take A&R action to protect their portfolios, support A&R solution development, and collaborate with the private sector.

Protecting assets, supply chains, and operations

The direct impacts of climate change, such as extreme weather, and efforts to combat it, including new regulations and shifting consumer behaviors, can significantly affect investment values. Financial institutions—including insurers—must thoroughly assess the exposure of their portfolios to climate-related risks and integrate these risks into financial decision-making to avoid large losses and secure long-term financial stability. In addition, financiers and insurance companies can support their clients (with funding or technical assistance) to implement strategies that improve climate resilience, which will help to further protect portfolios.

Growing the market of A&R solutions

Financial institutions can drive A&R action by developing financial products that enhance the resilience of clients,

such as catastrophe bonds and parametric insurance products. Innovating these financial products can unlock direct financial returns and address climate risks in investment portfolios. In addition, financiers can drive A&R action by investing in businesses that develop new A&R solutions. An example is Lightsmith's investment in Beep through the CRAFT Fund (see also the Health Systems-section).

Participating in public sector implementation

Collaboration between public and private sector actors is crucial for bridging the adaptation finance gap. For instance, blended finance mechanisms, in which public funds are combined with private capital, can be used to fund A&R projects. Such constructions are particularly needed for larger-scale projects with high upfront costs. For such projects, public sector entities can de-risk investments (through, for instance, first-loss guarantees), enabling greater private sector involvement. To foster further collaboration on A&R finance across sectors, the [Call for Collaboration](#) was launched at COP28. This Call brings together private, public, and social sector actors to accelerate the mobilization of private finance for A&R through knowledge sharing, capacity building, convening of key actors, and more.

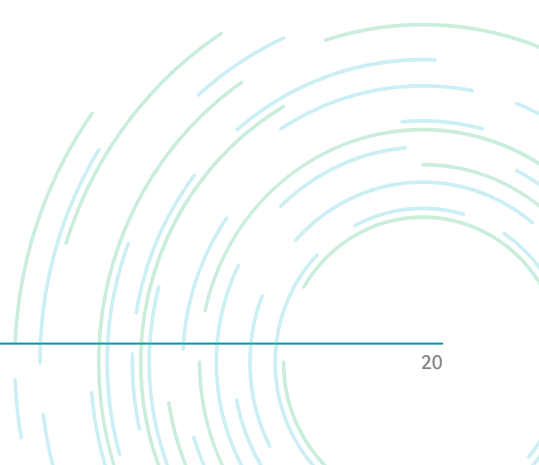
	Climate risk integration	Insurance industry capabilities framework
2030 SAA outcome	Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing adaptation and resilience so as to enable the mobilization of the US\$215 billion to US\$387 billion that will be needed annually across both public and private sources	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
Entry points for the private sector to advance the SAA outcome	<ul style="list-style-type: none"> • Provide financing to (i) companies that develop A&R solutions and (ii) measures that companies take to protect against future losses, such as retrofitting and upgrading physical assets or installing backup power sources. • Assess and align investment portfolios to lower climate risk exposure. 	<ul style="list-style-type: none"> • Implement risk assessment tools, using data and analytics to assess and price climate risks accurately with GIS mapping, remote sensing, and actuarial models. • Innovate new insurance products and services and incentivize clients to minimize climate exposure. • Expand coverage options for underserved and increasingly climate-vulnerable markets.

Case Study | Grow

AXA Climate: The San Crisanto community, consisting of around 150 Mayan families in the Yucatán Peninsula, relies heavily on fishing and the restoration of 800 hectares of mangrove forests for their livelihood. However, mangroves are highly vulnerable to natural disasters. Hurricane Isidore destroyed 99% of the mangroves in 2002, caused severe flooding, and halted local economic activities, including fishing and ecotourism. AXA Climate, in partnership with ClimateSeed and AXA Mexico, developed a parametric insurance product to protect the community of fishermen responsible for the restoration of San Crisanto mangrove forests. As soon as a hurricane impacts the protected area, compensation of up to \$100,000 is triggered automatically, based on the severity and proximity of the storm. This immediate financing allows for the rapid restoration of damaged mangroves and infrastructure essential for fishing, tourism, and hurricane protection. AXA Climate helps protect essential mangrove ecosystems and helps advance the SAA by providing a product that helps communities restore altogether. ClimateSeed provided support and financing to San Crisanto, the first blue carbon project certified under Climate Action Reserve in Mexico, and continues to work with communities and project developers across the world to maximize positive social and environmental impacts through the sale of carbon credits.

Case Study | Grow

The Lightsmith Group: As climate change continues to intensify, the need for climate adaptation has become urgent, especially in developing countries that are most vulnerable to its impacts. One of the challenges lies in scaling up the investment needed to fund climate adaptation technologies and solutions. To address this, The Lightsmith Group has introduced both the CRAFT fund (Climate Resilience and Adaptation Finance and Technology-transfer) and the SCALE (Systemic Capital for Adaptation Localization and Expansion) program. CRAFT focuses on expanding the availability of technologies and solutions for climate A&R, whereas SCALE will act as a “virtual green bank” by offering a one-stop platform that provides equity, grants, and credit investments. SCALE, which is supported by USAID, will also have technology focus areas that include agricultural analytics, geospatial intelligence, and more. Both efforts are contributing to the SAA by rapidly increasing the flow of capital into climate A&R.





Mobilizing the private sector

While the private sector certainly has a vital role to play in creating innovative solutions and protecting their operations, it is also important for the public and social sectors to create the right enabling environment. This means governments, financiers, and NGOs must work together to provide the necessary frameworks, policies, and incentives to drive private sector action. In recent years, several initiatives have emerged that encourage private sector participation by clarifying the business case for A&R and fostering an enabling environment for private capital flows, such as:

- Reports that clarify the roles and entry points for meaningful business action on A&R to debunk the perception that A&R only falls within the domain of private sector investment. An example is [The PREPARE Paper](#).
- Toolkits for business action and reporting, which provide companies and financial institutions guidance on how they should plan, measure, and report on A&R activities that are increasingly being required. An example is [ACT's Adaptation Methodology](#).
- Approaches and methodologies for integrating A&R solutions in investment processes to better position A&R as an investment theme. An example is the Climate Bonds Initiative's A&R taxonomy (see case study).
- Improved data tracking and definitions for what projects constitute as A&R to promote investor confidence on whether projects contribute to climate-resilient outcomes and help reorient flows toward activities that build resilience—and away from maladaptive activities. An example is [CPI's new approach to tracking private adaptation finance](#).

Case studies:

Climate Bonds Initiative: The Climate Bonds Initiative's (Climate Bonds) resilience taxonomy provides a classification system and screening criteria to guide investors in identifying bonds that contribute to climate resilience. Even though only 18% of the Green, Social, Sustainability, and Sustainability-linked Bonds (GSS+) issued to date have some Use of Proceeds that targets adaptation, Climate Bonds is working to increase this share to help ensure that every labeled bond incorporates resilience. This taxonomy, covering sectors like energy, nature, biodiversity, and agriculture, encourages investors to fund evidence-based projects that promote resilient outcomes. By publishing this granular and evidence-based guidance, Climate Bonds is fostering greater investor confidence in climate resilience outcomes of labelled bonds, helping scale up investments needed to meet global adaptation goals.

FEMA: By integrating risk management more holistically, Federal Emergency Management Agency (FEMA) has brought together private sector players of all sizes, using cost-sharing models to support resilience efforts. FEMA's Community Disaster Resilience Zones (CDRZ) program, which focuses on 483 zones identified based on National Risk Index datasets, directs both public and private resources to the most at-risk communities. Within this effort, FEMA also provides financial and technical assistance for the planning and implementation of resilience projects. This approach fosters cross-sector coordination to ensure clarity on where action is needed most and unlock more tactical and localized risk management strategies.



Recommended actions

For businesses

- Conduct thorough climate risk assessments to understand vulnerabilities in assets, supply chains & operations.
- Develop a roadmap toward climate-resilient business operations, considering impacts on the business' bottom line, the risk of maladaptation, and alignment with SAA outcomes.
- Collaborate with public, private, and social sector actors as well as (local) communities.
- Micro, Small, and Medium Enterprises in particular can play a role in tailoring A&R solutions to local contexts and providing solutions to markets typically underserved by large companies.

For financiers

- Assess existing exposure to climate risks across portfolios and identify approaches to address risks.
- Integrate climate risks into the core of investment decisions, acknowledging the direct and indirect benefits of adaptation projects to scale finance for A&R projects and businesses.

For the public sector

- Develop national adaptation plans and technology needs assessments to align private sector efforts with global and local A&R objectives.
- Create an enabling environment for A&R action by setting clear climate-risk disclosure requirements and contributing to the development of taxonomies for climate adaptation.
- Provide more and targeted (concessional) finance to de-risk private sector investments in A&R.



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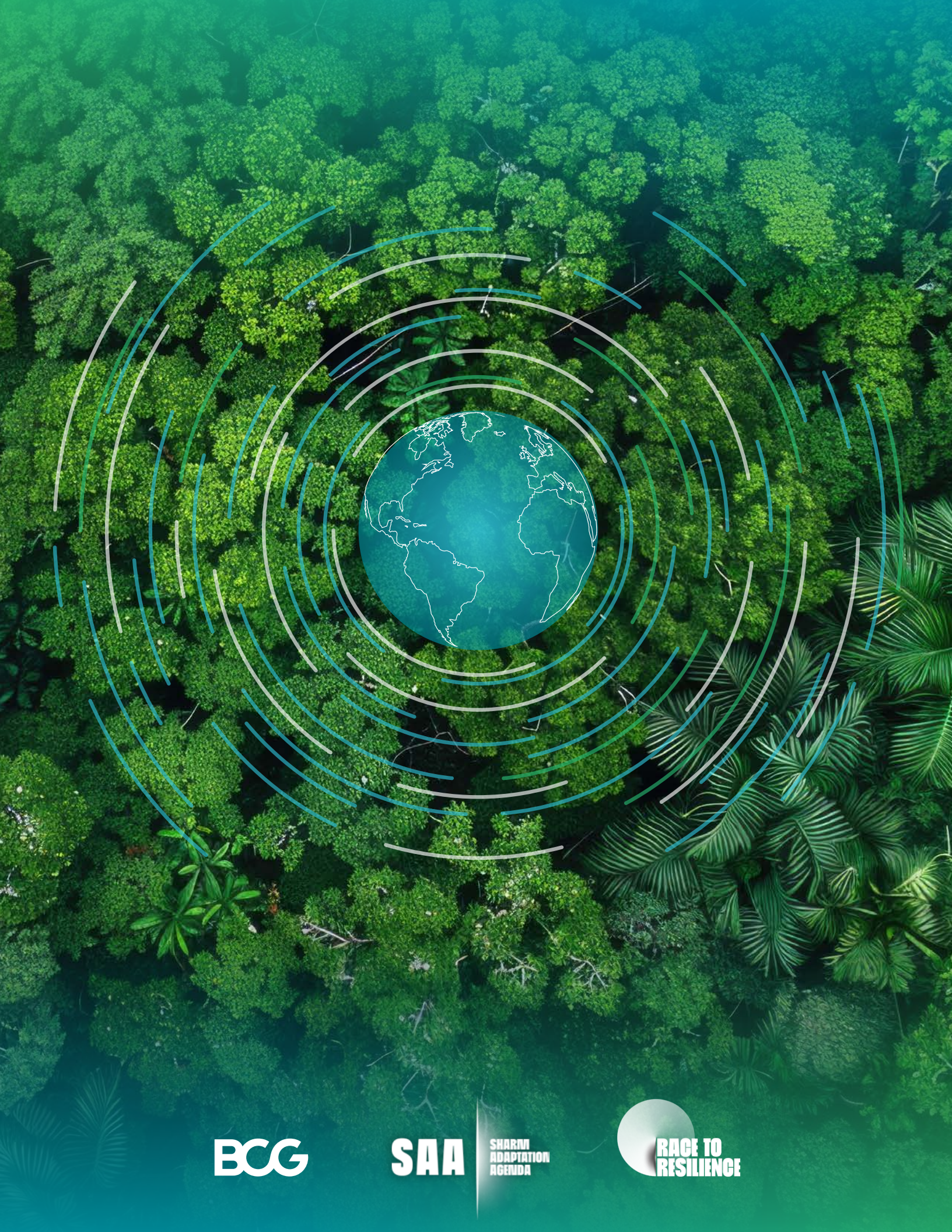
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