

Business Action for Adaptation & Resilience

Bridging gaps for businesses to deliver the
Sharm El-Sheikh Adaptation Agenda

Discussion Paper

UN Climate Change High-Level Champions

SAA

SHARM
ADAPTATION
AGENDA



DISCLAIMER

This report is based on research and assessments from PwC (UK), the Marrakech Partnership and its partner organisations. The presentation of material herein does not imply the expression of any opinion on the part of the UN Climate Change High-Level Champions, COP Presidencies, UNFCCC, SAA Steering Committee or PwC (UK). They and their team, agents, data or other third-party content providers make no representation or warranty, express or implied, in respect to the report's contents (including its completeness or accuracy) and shall not be responsible or liable for any consequence of use of, or alliance on, the report and its content.



FOREWORD



“COP28 has built on the successes of COP27, agreeing on a Global Goal on Adaptation through the adoption of “The UAE Framework for Global Climate Resilience” and operationalising the Loss and Damage Fund. We now need to mobilise the needed action among both governments and non-state actors to translate the various commitments and outcomes made at COP28 into real deliverables on the ground.

The Race to Resilience Campaign and the Sharm el-Sheikh Adaptation Agenda provide the frameworks that can help businesses deliver on adaptation and resilience, as well as elevate and align their actions with the global climate policy context. We urgently need to enhance adaptation and resilience for communities, sectors, economies, and ecosystems in order to deliver on the goals of the Paris Agreement.

There is an opportunity for businesses to embrace the change to an adaptive and resilient world. Integrating climate risk in investment decision making and managing operational and value chain impacts far outweighs the cost of inaction and makes business sense. The Global Center on Adaptation estimates that investing \$1.8 trillion in adaptation between 2020 and 2030 could generate \$7.1 trillion in total net benefits within five areas - including early warning systems, climate-resilient infrastructure, improved dryland agriculture, mangrove protection, and investments in water resources – which could result in many lives saved and livelihoods improved.

The Sharm el-Sheikh Adaptation Agenda provides concrete outcomes and a platform for public and private stakeholders to advance tangible adaptation actions across sectors and systems to enhance resilience by 2030.

The High-Level Champions remain committed to working with all parts of society, and all corners of the economy to turn political declarations and commitments at COP28 into action, finance and solutions on the ground.”



Dr. Mahmoud Mohieldin

UN Climate Change
High-Level Champion COP27



H.E. Razan Al Mubarak

UN Climate Change
High-Level Champion COP28

¹ The Global Center on Adaptation (2019). Adapting to climate change could add \$7 trillion to the global economy by 2030: <https://gca.org/adapting-to-climate-change-could-add-7-trillion-to-the-global-economy-by-2030/>

EXECUTIVE SUMMARY

As communities throughout the world continue to experience the devastating impacts of climate change, the need for accelerated action on climate adaptation and resilience has never been more apparent. In parallel, it is rightly gaining momentum on the global climate policy and action agendas.

During COP28, these issues featured much more prominently than ever before, underscoring the importance of the agreed Global Goal on Adaptation (GGA) through the adoption of “The UAE Framework for Global Climate Resilience”. Announcements by non-state actors, including businesses and financial institutions, also made it clear that more action and investment in adaptation and resilience is urgently needed.

Climate adaptation must occur alongside urgent decarbonisation efforts as both systems are intertwined and require a diverse set of actions and solutions across sectors and systems, delivered and enabled by a range of actors. The urgency of addressing climate impacts requires action to both decarbonise the economy and to build its resilience to future climate conditions simultaneously. In other words, urgent adaptation and mitigation actions must be undertaken concurrently, and considered alongside and in the context of each other. However, to date, action on adaptation is lagging compared to that on mitigation, especially in the private sector. Consequently there is an urgent need to redress this balance.

The Sharm El-Sheikh Adaptation Agenda (SAA), which constitutes a consolidated global approach to adaptation and the transformations needed in human, natural and economic systems to build long-term resilience among state and non-state actors, will continue to drive delivery against the GGA until and beyond 2030². Launched by the Egyptian COP27 Presidency, and the UN High-Level Climate Champions in collaboration with the Marrakech Partnership, UN specialised agencies and key partners, the the SAA is a comprehensive global action

plan that sets out priority adaptation outcome targets that are urgently needed to increase the resilience of 4 billion people by 2030². It focuses on the transformation needed across six impact systems: food and agriculture, water and nature, human settlement, coastal and ocean, infrastructure, and health; along with two cross-cutting enablers of policy and planning, and finance. These systems are intertwined and require a diverse set of actions and solutions across sectors and systems, delivered and enabled by a range of actors, including businesses and financial institutions, non-governmental organisations (NGOs) and thought leaders, and policy makers at all levels.

A year after its launch, at COP28 the UN High Level Climate Champions and the Marrakech Partnership took stock of the progress on the SAA³. It found that although some signals of progress have been demonstrated across systems and actors, significant scaling up of action on the ground, mobilising and enhancing access to finance, and climate-risk informed decision making by stakeholders across all geographies is needed.

Businesses and financial institutions have a major role to play and are uniquely placed to help drive innovation and investment towards adaptation and resilience. Although a lot of good work is already being done, it is not yet at the scale or pace required, and lags behind action on climate change mitigation. Our research reveals that, in general, businesses and financial institutions have yet to draw connections between the SAA and their own activities, or fully understand the relationship and inter-dependencies between the SAA systems and their own resilience.

To address this, this report aims to act as a resource in helping to bridge the gap between business action and advancing adaptation and resilience through the SAA.

It highlights the role of businesses and financial institutions in delivering economic, social and environmental resilience, and how actions already being taken are helping to deliver against the SAA's adaptation outcome targets. It demonstrates how achieving these targets will in turn support business adaptive capacity, resilience and sustainable growth. It presents a simple approach that businesses can use to support their business case by using three elements: enhancing resilience, identifying opportunities, and collaboration with others to promote action on adaptation. This is brought to life through a selection of examples from businesses, financial institutions, as well as organisations that collaborate to support business action, in order to inspire and motivate others to follow. It complements the 2030 Climate Solutions⁴ report launched at COP28, which brings together adaptation and mitigation breakthroughs required by 2030, providing a roadmap for the seven year sprint to keep a 1.5 degree, resilient future in reach.

We observe that although system-level transformation has not yet occurred within any of the SAA systems at the speed required, there has been substantial progress by individual businesses, financial institutions, and leading international organisations in bringing businesses together and producing resources that help accelerate action on adaptation. Business and financial institution awareness and action across food and agriculture, and water and nature systems appear to be progressing at a faster rate compared to health, human settlement and infrastructure systems, where private sector contributions are seemingly lagging behind on assessing and responding to climate adaptation risks and opportunities. These findings can help inform businesses of the opportunities to engage with the SAA and explore adaptation transformation pathways. It would be useful to look more closely at the specific enablers and barriers in place that influence the differences that we observed between systems. For example, whether there is a clearer business case for action in some systems than others (i.e. global supply chains dependent on resilient agriculture).

2 COP27 Presidency and the UN Climate Change High-Level Champions (2022). Sharm El-Sheikh Adaptation Agenda (SAA): https://climatechampions.unfccc.int/wp-content/uploads/2022/11/SeS-Adaptation-Agenda_Complete-Report-COP27_FINAL-1.pdf

3 High Level Champions and the Marrakech Partnership (2023). Implementation Report 2023 Sharm El-Sheikh Adaptation Agenda: https://climatechampions.unfccc.int/wp-content/uploads/2023/12/Sharm-El-Sheikh-Adapataion-Agenda-2023-Implementatation-Report_3.12.2023.pdf

4 Marrakech Partnership (2023). 2030 Climate Solutions Implementation Roadmap: <https://climatechampions.unfccc.int/wp-content/uploads/2023/12/2030-Climate-Solutions-Publication-Implementation-roadmap.pdf>



The following table provides a summary of the SAA impact system-level activity occurring and highlights the potential business opportunities that can stem from achieving adaptation and resilience targets.

Table 1: SAA system level business action - Summary findings
(Appendix 1 provides the complete list of SAA outcomes within each system)

Impact Systems
<p>Food & Agriculture:</p> <ul style="list-style-type: none"> • A more resilient agri-food system offers businesses benefits such as more resilient supply chains and markets, more efficient use of resources, the ability to offer new products to the market, increased food security, and improved livelihoods of the people and communities where they operate. • Private sector control over large parts of this system including good production, processing, distribution, and retail presents substantial opportunities for businesses to lead in the development and implementation of solutions, and there are examples of this happening. Collaborative action is also occurring between organisations and initiatives that are bringing together food producers, governments, businesses, investors, Indigenous groups, and others to help accelerate the transformation of this system. In addition, financial institutions and governments are providing assistance in response to climate events (e.g. floods) or are helping to protect farmers from future impacts (i.e., offering parametric insurance solutions). Overall, although more progress is being made than in other systems, the transformative change needed in this system has not yet occurred.
<p>Health:</p> <ul style="list-style-type: none"> • Access to a more resilient health system offers businesses benefits such as a safe and healthy workforce and the associated benefit of maintaining business continuity; and more effective emergency response plans that support business continuity at a time of potential disruption. • Progress within the health system (launched under SAA at COP28) appears to be slow due to barriers associated with a lack of financing, limited underpinning of scientific research, and insufficient tools and technologies. However, opportunities exist for businesses to help build resilient health infrastructure and early warning systems; and progress has been made at the national policy level with countries completing health vulnerability and adaptation assessments.
<p>Water & Nature:</p> <ul style="list-style-type: none"> • More resilient water and natural systems offer benefits such as business continuity (where reliant on resources or services provided by these systems), maintained financial returns if ecosystem disruptions are minimised, and an improvement in the livelihood and health of the workforce and the communities in which they operate. Most businesses are dependent on water and nature systems and the services they provide currently and for free, therefore, significant financial impacts may occur if these systems are not maintained and adapted. • The resilience of both systems have gained attention from the business community, especially as a result of the Taskforce on Nature-related Financial Disclosures (TNFD)⁵ recommendations and guidance for organisations to report and act on their nature-related dependencies, impacts, risks and opportunities. Nature-based solutions have already been widely accepted by businesses as a mitigation solution, proving popular as successful adaptation solutions that improve the resilience of ecosystems and communities to the impacts of climate change. There are many resources available to businesses, including guidance and case studies, and measurable targets that can help track progress. Fewer resources appear to be available within the water system.

5 The Taskforce on Nature-related Financial Disclosures (TNFD) (2023). The Taskforce on Nature-related Financial Disclosures: <https://tnfd.global/>

Coastal & Ocean:

- A more resilient coastal and ocean system offers businesses benefits such as avoided costs associated with damage to assets located in coastal areas, minimisation of supply chain disruptions, and business continuity if reliant on these ecosystems (particularly to the tourism and shipping sectors).
- This system is expected to experience significant advancements in the implementation of coastal and marine nature-based solutions, supported by investment of financial institutions and insurers. A range of mechanisms and frameworks have emerged, with international sustainability regulations targeting ocean systems. We found that businesses implementing A&R solutions in this system have focused on nature-based solutions, including mangrove conservation and restoration.

Human Settlement:

- A more resilient human settlement system that includes spaces and networks, offers businesses benefits such as better designed and constructed settlements that improve the livelihoods of people and communities in which they operate, and designed cities that integrate nature-based solutions which further enhances resilience.
- Rooted in risk and disaster reduction, there have been many examples of collaboration between organisations and subnational governments, where many global and local alliances have been built to advance adaptation efforts. Despite progress and alignment on the critical need to address physical impacts of climate change on human settlements, there is a notable barrier to accessing finance, specifically due to the requirements needed by funders and the financial needs of subnational governments. In addition, there is a need for more settlements, particularly in the Global South, to develop data-driven A&R plans and include informal settlements.

Infrastructure:

- A more resilient infrastructure system that includes access to power and mobility, offers businesses benefits such as access to affordable, reliable and sustainable energy; continuity of access to energy and to the market, lower operating costs from efficiency gains, access to new markets, and low-cost green mobility solutions needed for the transportation of goods and for commuting staff.
- There have been technological advancements in efficiency for energy infrastructure, but there are still barriers to achieving the targets of universal access to affordable, reliable and sustainable energy. Resilient transportation infrastructure is further behind, due to the lack of a common taxonomy, comprehensive guidance, tools, and metrics needed to operationalise the sector's resilience efforts. For both power and mobility, investment in infrastructure development is lacking and supportive policies are needed to meet adaptation outcome targets.

Cross-cutting enablers

Planning & Policy:

- Effective planning and policy measures are needed to provide the right enabling environment for businesses to act on climate adaptation and resilience, and to realise the benefits and opportunities that A&R action can bring.
- National Adaptation Plans (NAPs) are helping to improve ownership and policy alignment on adaptation at a national level. However, many plans often lack a clear and direct link to the private sector, making it difficult for businesses to implement actions that help address outlined priorities in each sector. Initiatives aimed at supporting businesses across various systems have emerged, offering comprehensive frameworks and guidance to facilitate adaptation planning and implementation. These initiatives serve to bridge gaps between sectors and promote collaborative, innovative approaches essential for effective climate adaptation.

Financing:

- By increasing and directing financing to A&R, businesses will be able to implement actions and realise the associated benefits (i.e., resilience, opportunity).
- Although multilateral climate funds have committed to double adaptation finance, private sector financing is lagging and there are not enough resources dedicated to adaptation activities or blended finance arrangements. The adaptation finance gap is widening and both public and private funding must be increased to address this gap. Insurance products (i.e. parametric insurance) and loss and damage risk-sharing mechanisms in the private sector can play a significant role.

Authors

Rebecca Kershaw, Climate Champions Team
Marcia Toledo Sotillo, Climate Champions Team
Mariam Allam, Climate Champions Team
Mikaela Comella, PwC Canada
Theresa Ertl, PwC Switzerland
Claire Monkhouse, PwC UK
Elliott Cappell, PwC Canada
Emma Cox, PwC UK

Contacts

adaptation@climatechampions.team



NOTICE OF INTENT

What

The High-Level Climate Champions in collaboration with PwC (UK) have developed this discussion paper in order to:

- 1** Promote the connection between business adaptation action and the SAA, and highlight how business action is critical to achieving outcomes.
- 2** Share some of the actions that businesses and others are already taking, across each of the SAA impact systems and enablers.
- 3** Propose what efforts are urgently needed to help deliver system-level transformation, with calls to action for three key stakeholder groups identified:
 - Businesses and financial institutions;
 - NGOs, thought leaders, and initiatives working with the private sector on climate action; and
 - Governments and policy makers.

Why

To support the acceleration of business action and deployment of private finance for adaptation, and ultimately help drive forward delivery of the SAA outcomes by focusing action and collaboration where it is most needed.

How

By providing insights and information from a number of organisations and business leaders who are addressing climate adaptation, including Race to Resilience partners. It is not intended to be a comprehensive stocktake of actions.

Rather it is intended to show how actions they are taking fit against the framing of the SAA, in order to demonstrate how the SAA can be used as a taxonomy for adaptation, as well as highlighting where progress is being made and where further action can be prioritised at a systems level.

Who

This report aims to support three main stakeholder groups: businesses and financial institutions, NGOs and thought leaders working with the private sector on climate action, and government policy makers. Rather it is intended to show how actions they are taking fit against the framing of the SAA, in order to demonstrate how the SAA can be used as a taxonomy for adaptation, as well as highlighting where progress is being made and where further action can be prioritised at a systems level.





INTRODUCTION

With record temperatures and the impacts of climate change already manifesting, the importance and urgent need for climate adaptation and resilience (A&R) action alongside emissions reduction is gaining momentum on the global climate agenda. Adaptation refers to what is needed to ensure the safety of populations and the security of assets⁶. Resilience refers to the capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation⁷.

At COP28, climate A&R featured much more prominently than ever before, culminating in the agreement of a Global Goal on Adaptation (GGA) that provides a framework to help guide nations in their climate adaptation efforts and sets a clearer direction of travel to 2030 and beyond. It is also clear based on announcements by non-state actors, including businesses and financial institutions, that more action and investment in A&R is urgently needed, alongside an increase in awareness not only on climate and transition risks, but also the business opportunities that can arise from the transition.

However, to date, action on adaptation is lagging compared to that on mitigation, especially in the private sector. Additionally, current adaptation efforts and initiatives tend to be reactive, fragmented, incremental, sector-specific, and unequally distributed across regions⁸.

As with action on climate change mitigation, the private sector plays a vital role in achieving adaptation goals, both at the global level and at the scale of individual business and community resilience. As such, it is imperative for businesses, including financial institutions, to incorporate adaptation into their strategic and operational processes. Businesses are also well positioned and have the capacity to help scale adaptation solutions, through their ability to innovate and to leverage finance. Unlike national, regional and local governments who are jurisdictionally constrained, businesses can help to address transboundary climate risks and improve the resilience of not only their own operations, but their value chains and the communities in which they operate. Although many businesses have started to think about climate risk, largely through

the adoption of the recommendations from the Task Force on Climate-Related Financial Disclosures (TCFD)⁹ few are viewing climate A&R as a business transformation necessity, and for those that are, there are barriers that are preventing action at the scale required. These barriers are elaborated in the World Economic Forum's report published at COP28, that takes stock of business action on adaptation¹⁰.

One of the barriers cited is that there is no incentive to act and that, unlike for mitigation, the policy and regulatory landscape is not conducive and that third party pressure and recognition has not yet been established. In the absence of this, the high level objectives set out in the Sharm el-Sheikh Adaptation Agenda (SAA) can help guide business action on A&R.

6 Intergovernmental Panel on Climate Change (2022). Annex II: Glossary: https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Annex-II.pdf

7 COP27 Presidency (2022). Sharm el-Sheikh Adaptation Agenda: https://climatechampions.unfccc.int/wp-content/uploads/2022/11/SeS-Adaptation-Agenda_Complete-Report-COP27_FINAL-1.pdf

8 United Nations Framework Convention on Climate Change (UNFCCC) (2023). Technical dialogue of the first global stocktake: https://unfccc.int/sites/default/files/resource/sb2023_09_adv.pdf

9 TCFD (2023). Task Force on Climate-related Financial Disclosures: <https://www.fsb-tcfd.org/>

10 World Economic Forum (2023). Taking stock of business efforts to adapt to climate change: https://www3.weforum.org/docs/WEF_Taking_Stock_of_Business_Efforts_to_Adapt_to_Climate_Change_2023.pdf

This discussion paper aims to highlight the connections between business A&R actions and the SAA adaptation outcome targets, the synchronicity of this relationship, and highlight why businesses should act on A&R. To illustrate this in a way that we hope will help inform and inspire others, we have brought together a selection of examples from across various private sector organisations.

The report is set out as follows:

Section 1

Presents the SAA including its positioning and relevance within the global context and discusses how it is relevant to business.

Section 2

Shows the types of actions that businesses can take to help deliver the SAA outcomes, set out by each impact system, and provides case study examples to bring this to life. It also provides an observation on the level of activity by business, as well as those organisations working in collaboration with and enabling businesses, for each system. These observations aim to indicate the current level of maturity and where further attention may need to be prioritised, and should be considered alongside the SAA Implementation Report 2023¹¹.

Appendix 1

Provides the list of SAA outcomes within each system.

Appendix 2

provides more information on available frameworks, tools, and other resources that businesses may find useful when building out their business case for adaptation, in addition to a list of conveners working to shape collaborative outcomes within each impact system.

¹¹ High Level Champions and the Marrakech Partnership (2023). Implementation Report 2023 Sharm El-Sheikh Adaptation Agenda: <https://climatechampions.unfccc.int/wp-content/uploads/2024/01/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report.pdf>

CONTENTS

- 01** [Disclaimer](#)
- 02** [Foreword](#)
- 03** [Executive Summary](#)
- 08** [Notice of Intent](#)
- 12** [Table of Contents](#)
- 13** [List of Acryonyms](#)

- 14** [Rallying businesses behind the Sharm-El-Sheikh Adaptation Agenda](#)
 - 14** [What's the Sharm El-Sheikh Adaptation Agenda and why is it relevant to business?](#)
 - 15** [Adapting business strategies to address climate impact and enhance resilience](#)
 - 16** [Business action is supporting the SAA, but not at the scale required](#)

- 18** [Connecting business action to the SAA](#)
 - 19** [Food and Agriculture Systems](#)
 - 25** [Health Systems](#)
 - 28** [Water and Nature Systems](#)
 - 33** [Coastal and Ocean Systems](#)
 - 36** [Human Settlement Systems](#)
 - 39** [Infrastructure Systems](#)
 - 42** [Cross-cutting enablers: Planning and Policy](#)

- 49** [Key Findings & Next Steps](#)
 - 54** [List of Contributors](#)
 - 55** [Appendix 1: Sharm El Sheikh Agenda Systems & Outcomes](#)
 - 60** [Appendix 2: Additional Resources](#)

LIST OF ACRONYMS

Acronym	Definition
A&R	Adaptation and resilience
ATACH	Alliance for Transformative Action on Climate and Health
C2ES	Center for Climate and Energy Solutions
CSRD	Corporate Sustainability Reporting Directive
EEZ	Exclusive Economic Zone
EIB	European Investment Bank
EoL	Economy of Love
GDP	Gross Domestic Product
GGA	Global Goal on Adaptation
GHG	Greenhouse Gas
ICSI	International Coalition for Sustainable Infrastructure
IRENA	International Renewable Energy Agency
ISSB	The International Sustainability Standards Board
LDCs	Least Developing Countries
NAPs	National Adaptation Plans
NDCs	Nationally Determined Contributions
NGOs	Non-governmental organisations
PLP	Purpose-led Performance
SAA	Sharm El-Sheikh Adaptation Agenda
SeyCCAT	Seychelles Conservation and Climate Adaptation Trust
SIDS	Small Island Developing States
SCB	Standard Chartered Bank
SDGs	Sustainable Development Goals
TCFD	Task Force on Climate-related Financial Disclosures
TNC	The Nature Conservancy
TNFD	Task Force on Nature-related Financial Disclosures
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organisation
WRC	Water Resilience Coalition
UAE	United Arab Emirates
UNDRR	United Nations Office for Disaster Risk Reduction
UNGC	United Nations Global Compact



1 RALLYING BUSINESSES BEHIND THE SHARM-EL-SHEIKH ADAPTATION AGENDA

What's the Sharm El-Sheikh Adaptation Agenda and why is it relevant to business?

Launched at COP27 by the Egypt Presidency, through collaboration with the High-Level Champions, Marrakech Partnership and a number of UN agencies, the SAA is a comprehensive global action plan that outlines 30 global adaptation targets that are urgently needed for a resilient world by 2030¹². Importantly, the SAA unites actors behind a set of adaptation solutions with clear, actionable near-term targets, to achieve priority global adaptation outcomes.

The Global Goal on Adaptation (GGA) adopted at COP28 underlined the importance of ramping up global adaptation efforts by setting out a framework to guide nations in their climate adaptation efforts. It included long-term transformational and incremental adaptation that reduces vulnerability while enhancing adaptive capacity and resilience. Both the GGA and the SAA help promote and guide global adaptation efforts, providing a clearer direction of travel to 2030 and beyond¹³.

The SAA highlights how action and investment

towards whole-scale transformations are needed to significantly increase resilience across six key impact systems: food and agriculture, water and nature, human settlement, coastal and ocean, infrastructure, and health; along with two cross-cutting enablers of change: policy and planning, and finance. It defines specific and quantitative outcome targets for each impact system and enabler. It includes tangible and trackable measures that can be used to demonstrate progress and accelerate action within the state and non-state actor community. A full list of the SAA outcomes, including the additional outcomes highlighted under the new health impact system, can be found in Appendix 1.

12 COP27 Presidency and the UN Climate Change High-Level Champions (2022). Sharm El-Sheikh Adaptation Agenda (SAA): https://climatechampions.unfccc.int/wp-content/uploads/2022/11/SeS-Adaptation-Agenda_Complete-Report-COP27_FINAL-1.pdf

13 UNFCCC (2023). Glasgow-Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3: https://unfccc.int/sites/default/files/resource/cma5_auv_8a_gga.pdf

The SAA systems are intertwined and will require coordination, collaboration and diverse solutions across systems, delivered and enabled by a range of actors, including businesses and financial institutions, non-governmental organisations (NGOs) and thought leaders, and policy makers at all levels.

Businesses can use the SAA to identify the systems and outcomes most critical to their own circumstances, focusing efforts to build operational, value chain and community resilience. In parallel, implementation of individual business A&R actions can contribute to achieving the SAA outcomes.

The UAE Global Resilience Framework, along with its UAE-Belem Work Programme on indicators, was adopted at COP28 to articulate the GGA and has outlined 7 global targets for state and non-state actors to achieve by 2030.

The agreed decision makes an explicit call for parties and non-party stakeholders to pursue efforts to achieve the targets of the framework. The SAA is well positioned with its mandate to catalyse A&R efforts and bridge actions of party and non-party stakeholders towards achieving the 2030 resilience targets. The SAA through its partners and Marrakech Partnership for Global Climate Action mandate will seek to inform the UAE framework and UAE-Belem work programme, provide input to the GST on progress made towards achieving the 2030 targets, and will remain policy relevant acting as a key vehicle in engaging developments.

14 World Economic Forum (2023). Accelerating business action on climate adaptation: <https://www.weforum.org/publications/accelerating-business-action-on-climate-change-adaptation/>

15 The Global Center on Adaptation (2019). Adapting to climate change could add \$7 trillion to the global economy by 2030: <https://gca.org/adapting-to-climate-change-could-add-7-trillion-to-the-global-economy-by-2030/>

Adapting business strategies to address climate impact and enhance resilience

Businesses are experiencing the growing urgency to address the impacts of climate change as extreme events continue to be felt across all sectors and geographies. These events are negatively impacting the financial performance and operational continuity of businesses. Based on a recent survey of 100 companies by the World Economic Forum, these companies estimated that the financial costs associated with managing climate risks totals \$36 billion per year¹⁴.

However, the prevailing notion that adaptation solely translates into a "cost centre," generating expenses without additional value, is a narrow view that can hold businesses back. Businesses that comprehensively grasp their risks across various scenarios can respond adeptly to unfolding circumstances, positioning themselves to design a resilient future for their business. A study by the Global Center on Adaptation revealed that a global investment of \$1.8 trillion across five critical areas from 2020 to 2030 could yield a remarkable \$7.1 trillion in total net benefits. These areas encompass early warning systems, climate-resilient infrastructure, enhanced dryland agriculture, preservation of mangroves, and bolstering water resource resilience. Similarly, the World Resources Institute indicated that in five sectors, every \$1 invested in adaptation could generate returns ranging from \$2 to \$10¹⁵.

Beyond compliance and avoidance of financial losses, adaptation presents an opportunity for businesses to strategically strengthen their operations. It enhances risk reduction against climate impacts, identifies opportunities, boosts market positioning through reputation improvement, and fosters access to capital by addressing climate-related risks and opportunities for investors seeking sustainable investments in a changing landscape. It should not be seen as a merely reactive measure, but rather a proactive stance that can enhance resilience. Adaptation is a strategic and operational imperative that must be a part of core strategy. While much of the narrative to date around climate adaptation has been driven by assessment of climate risk, by implementing climate A&R solutions, businesses can both reduce their vulnerabilities and capitalise on opportunities.

Making the business case for adaptation

The SAA was intended to establish aspirational adaptation benchmarks for global action towards 2030. It provides clarity and direction to global efforts and cascades A&R priorities from countries down to the ecosystem of non-state actors implementing A&R initiatives on the ground. Businesses are already engaging in A&R action and a lot of good work is currently being done, but not at the speed and scale at which it is needed.

Businesses will need to develop a business case for action on adaptation, but many have struggled with how to approach this. The World Economic Forum's White Paper on Accelerating Business Action on Climate Adaptation (2023)¹⁶ provides a compelling and simple approach that businesses can use and tailor to their own sector and circumstances. It sets out three elements of a business case that organisations should consider:

- 1 Enhancing resilience:** It is clear that physical climate change risks can impact businesses and their value chains in a variety of ways. Once businesses identify and assess their climate risks, they can then manage these risks by implementing measures to increase their own resilience and that of their value chain.
- 2 Capitalising on opportunities:** Climate change also presents opportunities for businesses that invest in adaptation solutions. Businesses can capitalise on these opportunities, for example by creating new revenue streams by developing products, services and business models that will be needed in the global response to climate change.
- 3 Shaping collaborative outcomes:** System level transformation will require coordinated collaboration from public and private sector players. Participation in multi-stakeholder efforts with communities will be needed to promote and scale adaptation solutions that can help build resilience of operations and value chains.

It is recommended that businesses consider this approach to support their adaptation planning, and leverage the SAA systems and outcomes as a framework within which to contextualise each element (i.e., exploring resilience, opportunities and potential for collaboration in each system that is applicable or prioritised).

¹⁶ World Economic Forum (2023). Accelerating business action on climate adaptation:
<https://www.weforum.org/publications/accelerating-business-action-on-climate-change-adaptation/>

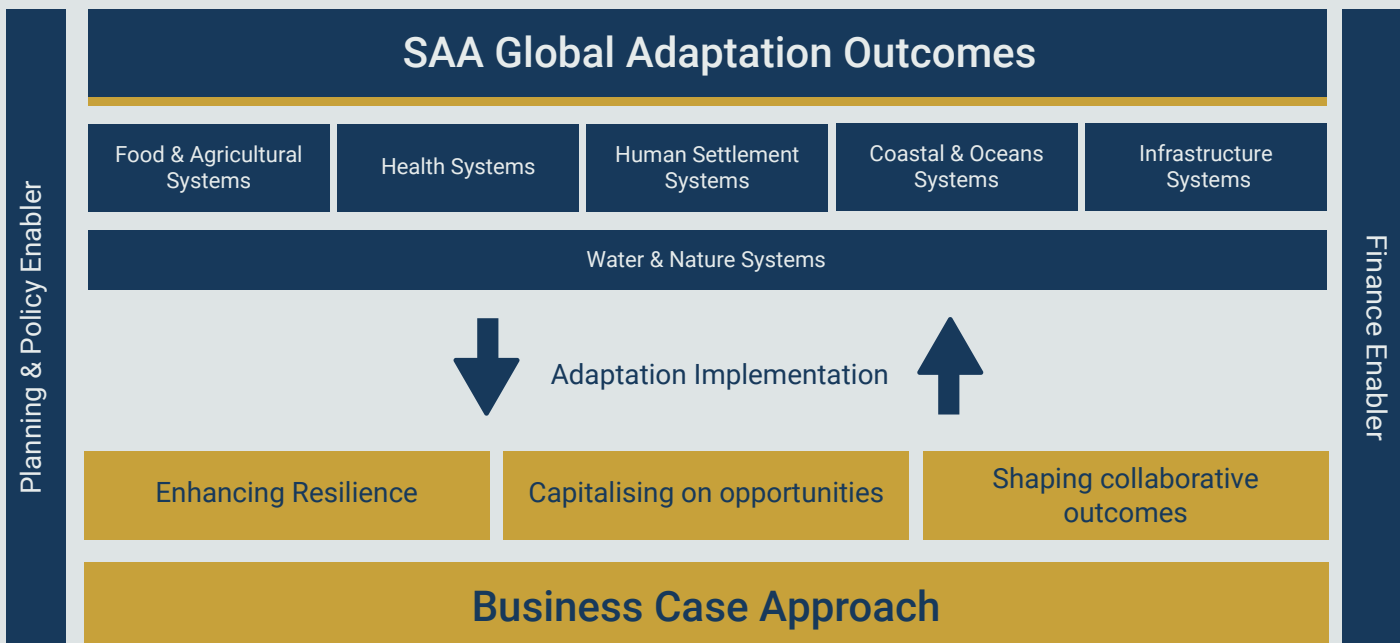


Figure 1: How businesses can leverage their business case approach¹⁸ to help achieve SAA outcomes.

Unlocking barriers to action

Despite these synergies, the SAA **Implementation Report 2023**¹⁷ highlights that business action on adaptation is still lagging, with only 25% of businesses recognising and disclosing their financial exposure to physical climate risks, and even fewer disclosing implemented A&R actions, based on submissions to the CDP.

The newly released report **Taking Stock of Business Efforts to Adapt to Climate Change**¹⁸ from the World Economic Forum, takes stock of business action on adaptation, exploring the current level of activity and elaborates on the barriers that are preventing action at the speed and scale required. Our research also suggests that businesses face diverse barriers when it comes to implementing A&R solutions. One barrier in particular being that businesses do not necessarily connect their own adaptation actions with the SAA adaptation outcome targets and other relevant global policy frameworks or do not yet recognise the relevance of achieving these targets to their own resilience, either through their business continuity or the continued viability of their overall business model. The SAA appears more as part of the political process rather than common goals that resonate with business and other NSAs. Lack of co-created clarity on the role and expectations of businesses in achieving the SAA 2030 outcomes hinder them from engaging with it as a tool to prioritise actions. Additionally, businesses might be undertaking actions that would be considered as climate adaptation, but do not necessarily frame their actions as such, instead seeing them as more locally implemented risk mitigation measures or part of external corporate social responsibility initiatives not linked to core sustainability strategy. This cognitive dissonance makes it difficult to quantify how much is actually invested in adaptation, and also threatens to undermine efforts to deliver the SAA outcomes if they are not viewed as both a priority and business opportunity.

¹⁷ COP27 Presidency and the UN Climate Change High-Level Champions (2022). Sharm El-Sheikh Adaptation Agenda (SAA): https://climatechampions.unfccc.int/wp-content/uploads/2022/11/SeS-Adaptation-Agenda_Complete-Report-COP27_FINAL-1.pdf

¹⁸ WEF (2023). Taking stock of business efforts to adapt to climate change: https://www3.weforum.org/docs/WEF_Taking_Stock_of_Business_Efforts_to_Adapt_to_Climate_Change_2023.pdf

2 CONNECTING BUSINESS ACTIONS TO THE SAA



The COP27 and COP28 Presidencies and the UN-High Level Climate Champions released the first Sharm el-Sheikh Adaptation Agenda Implementation Report in 2023 at COP28, which takes stock of global progress made towards A&R across all systems, the outcomes achieved through the collective efforts of all actors and the challenges ahead to close gaps and build resilience from now until 2030¹⁹. The report found that a myriad of climate action on adaptation is occurring through multi-stakeholder collaboration and locally-led initiatives that have already generated opportunities for both societies and economies.

This section of the paper uses illustrative examples to demonstrate how businesses can and already are contributing to advancing the SAA. It is important to note that this is a fast moving area and this paper does not provide an exhaustive

or comprehensive analysis. The paper is based on a review of existing literature and selected interviews with private sector organisations and business leaders addressing climate adaptation and business, including Race to Resilience partners.

For a full list of the SAA adaptation outcome targets see Appendix 1. For more information on conveners working in this space, existing tools, frameworks and other resources see Appendix 2.

¹⁹ High Level Champions and the Marrakech Partnership (2023). Implementation Report 2023 Sharm El-Sheikh Adaptation Agenda: <https://climatechampions.unfccc.int/wp-content/uploads/2024/01/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report.pdf>



FOOD & AGRICULTURE SYSTEMS

The food and agriculture sector employs 27% (873 million people) of the global workforce as of 2021 and the global value added generated by agriculture, forestry and fishing reached USD 3.7 trillion in 2021²⁰.

The food and agriculture system is highly vulnerable to the impacts of climate change. Decreased yields, for example, resulting from extreme weather events or drought, or changes in the length or timing of growing seasons, have the potential to affect land use, food security, health, social equity and economic systems.

The SAA seeks to achieve the following:

- Sustainable global food production;
- Reduction of food waste by half;
- The promotion of healthy and sustainable diets;
- The protection of biodiversity and ecosystems;
- Redirection of climate finance to resilient food systems;
- The end to hunger and malnutrition by 2030;
- Fostering an equitable and inclusive transition within food systems, prioritising smallholders, women, youth, and Indigenous Peoples' involvement in decision-making and access to resources and markets.

Much of the global food system sits within the private sector, meaning that there are substantial opportunities for businesses to develop and implement the solutions needed to meet adaptation targets. The achievement of a more resilient agri-food system offers business benefits including, but not limited to, more resilient supply chains and markets, increased food security, more efficient use of resources, the ability to offer new products to the market, and better livelihoods of the people and communities where they operate.

Businesses and actors within this system are already starting to implement sustainable agricultural practices, such as regenerative and agroecological approaches, both by businesses that were interviewed and organisations who work to support business action. Businesses and stakeholders in this space are seeing the benefits of implementing sustainable agricultural practices and are able to track progress using available quantifiable metrics, unlike many other adaptation solutions.

Although climate-related funding for this system is still insufficient to meet adaptation outcome targets, financial institutions and governments are stepping in, in some cases, to provide assistance in response to climate events or helping to protect farmers from future impacts (i.e., offering parametric insurance solutions).

COP28 emphasised the critical role of the food and agriculture sector within the climate change action agenda, and the concept of attaining a 'climate-resilient food and agricultural production and supply and distribution of food' was specifically referenced in the GGA²¹. Additionally, several agreements on food and agriculture might help advance this sector including, for example, a **Call to Action for**

Transforming Food Systems for People, Nature, and Climate, which was signed by more than 200 NSAs, committing themselves to 10 priority actions which can transform global food systems²². Secondly, the "COP28 United Arab Emirates (UAE) Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action" was signed by more than 150 nations and commits each of them to include emissions from food and agriculture in their Nationally Determined Contributions (NDCs) by COP30 in 2025²³.

Given the cyclical nature and complex supply chains involved, collaborative and integrated value chain approaches are comparatively more common in addressing challenges in sectors reliant on the food and agriculture industry. Within this system, collaborative action is occurring between organisations, coalitions, and initiatives who are bringing together food producers, governments, businesses, investors, Indigenous Peoples and local community groups, and others to help accelerate the transformation of this system and increase adaptation efforts.

For example, the World Business Council for Sustainable Development's (WBCSD) Scaling Positive Agriculture Project supports leading businesses to drive solutions and transform global food systems by maximising the potential of agriculture as a solution for climate, nature and farmers. WBCSD has also developed a Food and Agriculture Roadmap: An implementation plan of the CEO Guide to Food System Transformation, which sets transformational targets, key action areas and solutions to transform food systems²⁴. The Roadmap helps companies prioritise and develop business-led solutions while advancing supportive policy, regulatory and financial frameworks.



Table 1: Business activities contributing to the Food & Agriculture systems

Food & Agriculture: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> • Crop diversification • Early warning weather systems to inform planting, irrigation and harvesting, to avoid or reduce costs associated with climate shocks • Soil nourishment • Purchase of (jurisdictional) carbon credits to support ecosystem services 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> • Meeting demand growth for new / alternative food products; investing in technological developments to increase productivity/ crop yields (e.g., during flooding, water stress, saline conditions) • Cost savings through efficient irrigation technologies and monitoring systems for sustainable resource management • Sale of carbon or biodiversity credits from improved land management practices • Increase proportion of products reaching the market by reducing food waste, through improving cold chain for example 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> • Working directly with food producers/farmers by providing resources/capital to invest in sustainable agricultural equipment • Local farmers sharing data to help businesses track progress on how new practices are working • Engaging with NGOs to collect and share lessons learnt

20 Food and Agriculture Organisation of the United Nations (2023).

World Food and Agriculture - Statistical Yearbook 2023:

<https://www.fao.org/3/cc8166en/cc8166en.pdf>

21 UNFCCC (2023). Glasgow-Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3: https://unfccc.int/sites/default/files/resource/cma5_auv_8a_gga.pdf

22 UNFCCC (2023). Call to action for transforming food systems for people, nature, and climate: <https://climatechampions.unfccc.int/over-150-nsas-sign-cta-calling-for-transformation-of-food-systems-for-people-nature-and-climate/>

23 COP28 (2023). COP28 United Arab Emirates (UAE) Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action: <https://www.cop28.com/en/food-and-agriculture>

24 WBCSD (2019). Food and Agriculture Roadmap: An implementation plan of the CEO Guide to Food System Transformation: https://docs.wbcsd.org/2019/10/WBCSD_CEO_Guide_to_Food_System_Transformation.pdf

Examples of business action

SEKEM

Demonstrates how businesses can contribute to SAA Food and Agriculture Outcome 1 (to produce 50% of global food through sustainable agriculture practices) through scaling up regenerative agricultural practices, and highlights the co-benefits possible from nature based solutions.

SEKEM promotes a holistic approach to sustainable development, giving back to the community in which they operate various companies in the field of organic and biodynamic food and beverages, textiles and pharmaceuticals. Its 'Economy of Love' (EoL) scheme is a certification standard promoting sustainable, ethical, and transparent products while promoting responsible communities. EoL aims to support 40,000 small-holder farmers in Egypt by 2025, to transition to organic and biodynamic farming, earning carbon credits that support ecosystem services as well as increasing the livelihoods of local communities. EoL implements biodynamic agricultural practices that are focused on nourishing soil, protecting the environment, and producing nutrient-rich food while prioritising animal welfare. EoL aims to advance socially responsible, economically viable, and environmentally conscious farming.

This plan showcases the Egyptian Biodynamic Association's commitment to sustainable agriculture and supporting local farmers' economic viability²⁵. SEKEM's EoL will increase the number of organic farmers, therefore helping to improve the quality sourcing of organic crops and their availability in more sufficient amounts. Farmers that would typically sell their organic crops to SEKEM at a premium price compared to conventional planted crops are receiving their premium from EoL carbon credits, allowing SEKEM to purchase the organic crops at a price equivalent to the price of the conventional crops. Through the selling of EoL carbon credits by farmers, SEKEM is able to lower production costs, purchasing organic crops at a discounted rate, increasing SEKEM's profitability and further supporting their resilience.

Raincoat

Demonstrates how businesses can contribute to SAA Food and Agriculture Outcome 5 (to scale and re-orient finance flows from public and private sectors towards resilient, inclusive and sustainable food systems) through scaling-up their service offerings and increasing the flows of finance towards improving community resilience.

Raincoat develops climate insurance products and collaborates with insurers, reinsurers, governments, and financial institutions to offer instant, direct, and transparent financial protection to those at risk from natural disasters, ultimately helping communities rebuild and recover from the devastating impacts of these events²⁶. During a recent climate crisis, Raincoat was crucial in providing financial assistance to Mexican farmers who experienced crop failures due to extreme weather events. This work was done in collaboration with the government of Mexico and a consortium of global insurers and reinsurers, and helped prevent food shortages and economic loss in agriculture-dependent communities.

In Colombia, Raincoat implemented a first-of-its-kind insurance product, which included parametric flood coverage, and was specifically designed to protect farmers and agriculturally adjacent families from the impact of loan defaults caused by climate change. This was done in collaboration with one of the largest banks in the region and aims to protect millions of people across the next decade. This product has been activated hundreds of times across the county, paying farmers who have suffered from flood, excessive rain, and drought. By collaborating with private and public sector stakeholders, Raincoat was able to deploy the product across all 32 states of Colombia, including over 1120 municipalities.

25 Economy of Love (2023). 40,000 Farmers for a Regenerative Future in Egypt Concept Note - An effective way to address Egypt's challenges in the field of food security, climate change and poverty: <https://economyoflove.net>

26 Raincoat (2023). Enabling financial resilience from natural disasters: <https://www.teamraincoat.com/>

Examples of business action

The Lightsmith Group

Demonstrates how businesses can contribute to SAA Food and Agriculture Outcomes 2 and 5 (to reduce global food waste, and orient finance flows towards resilient food systems) through investment in companies that are utilising technology to create a sustainable food system in each region.

The Lightsmith Group is a sustainable private equity firm that manages the first private investment fund for adaptation and climate resilience. Lightsmith invests in growth-stage companies that can help manage climate disruptions in agriculture and food, energy, water, logistics and supply chains, and the built environment. Their Adaptation SME Accelerator Project (ADAP) is a grant-funded initiative led by Lightsmith and supported by the Global Environment Facility, Conservation International, and the Inter-American Development Bank that seeks to build an ecosystem for small- to medium-sized companies in emerging markets that have technologies, products, and services that can be used to build resilience to the impacts of climate change.

Lightsmith has invested in Solinftec, a leading precision agriculture technology company based in Aracatuba, São Paulo, Brazil and West Lafayette, Indiana, USA. As the operating system of the farm, Solinftec uses a suite of tech-enabled hardware, IoT (Internet of Things), and SaaS (Software as a Service) products to monitor and optimise on-farm operations to reduce costs and environmental impacts and improve yields. Initially, the company's solutions were focused on sugar cane, but now are being used for a wide range of crops across more than 30 million acres and 11 countries. Their solutions have helped farmers to reduce their fuel and chemical use, and they provide weather forecasts and real-time, in-field weather data to help farmers change their operations as weather changes. This company has not only improved the resilience of farms throughout the Americas but has also helped to reduce greenhouse gas emissions.

Lightsmith has also invested in Waycool Foods and Products Private Limited, the only full-stack, tech-led food supply chain company in India, focused on food cultivation, processing and distribution.

Waycool leverages innovative technology to scale and operate a complex supply chain from farm to fork. The company has merged the physical and digital worlds for a “phy-gital” business model connecting farmers, processors, distributors and the retailers. They have been able to increase efficiency by leveraging weather forecasting information which allows them to be more responsive to changing weather conditions. This has resulted in a reduction of food waste, reducing food waste across the supply chain from 15-18% to under 2%, making more food available at negative carbon impact.





McCormick & Company

McCormick & Company, Incorporated demonstrates how businesses can contribute to SAA Food and Agriculture Outcomes 1, 4, 5, and 7 (to produce 50% of global food through sustainable agriculture practices, to protect, manage, and restore biodiversity, to orient finance flows towards resilient food systems, and advance a just and inclusive food system transition) through investing in the resilience and livelihoods of the farmers and their families that supply their products.

McCormick & Company is a “global leader in flavour” that manufactures, markets and distributes spices, seasoning mixes, condiments and other flavorful products to the entire food industry including e-commerce channels, grocery, food manufacturers and foodservice businesses. Through their Purpose-led Performance (PLP) strategy, the Company has embedded their commitment to people, communities and planet across their operations and beyond. McCormick sources from 85 different countries and is deeply engaged with the farming communities where its iconic raw materials are grown.

One example of McCormick’s work is in Madagascar’s remote SAVA region, where vanilla is sourced. There, McCormick has invested in multiple projects with partners such as USAID, and is taking a holistic approach to incentivise sustainable sourcing practices. This is achieved by improving the resilience of farmers and their families while promoting sustainability standards that respect biodiversity conservation, natural resource management and sustainable cooperative governance. The emphasis is to develop each farmer’s ability to manage the complex and richly biodiverse ecosystem in the SAVA region of Madagascar, while improving livelihoods. Farmers are trained in good agricultural practices and implement systems and standards which result in third-party verified sustainability certification. They are provided with the tools to diversify their income to mitigate the impact of various factors, including unforeseen weather events - like cyclones - may have on the value of their crops. This also includes income diversification programs for farmer resilience, such as beekeeping, which helps to reduce pressure on the environment. Finally, farmers are supported in the setup of a jointly owned and controlled cooperative, which enables groups of farmers to add value to their crops through curing locally and collectively selling their vanilla at a higher price.

Through this initiative, McCormick was not only able to improve the livelihoods of their smallholder farmers, but also increase the resilience of their families and communities. McCormick has set a goal to increase the resilience of 90% of smallholder farmers (over 35,000) that grow their key iconic herbs and spices by 2025 by increasing skills and capacity, income, access to financial services, education, and nutrition and health. By the end of 2022, McCormick had positively impacted over 31,000 farmers. As a result of these efforts, McCormick has greater transparency within their supply chains, allowing them to improve the reliability and environmental impact of their business, decreasing risk and building supply chain resilience whilst supporting farming communities and their livelihoods.



HEALTH SYSTEMS

Health systems are directly and indirectly impacted by climate change. The increasing risks of death and illness resulting from extreme weather events such as extreme heat, storms, and flooding, has put a strain on health systems.

The SAA was updated in 2023 to include health as a new impact system and focuses on adaptation outcomes like improving the resilience of the health system to climate hazards, ensuring vulnerable populations access safe, high quality healthcare, implementing heat action plans, and increasing financing to develop climate-resilient health systems globally.

The achievement of a more resilient health system offers business benefits including, but not limited to, a safe and healthy workforce, and the associated benefit of maintaining business continuity, and more effective emergency response plans to address workplace health and safety issues.

Health systems are highly interlinked with other systems, from nutrition and access to food, to water and sanitation.

This link is increasingly becoming recognised between systems and progress has been made at the national policy level with countries completing health vulnerability and adaptation assessments. In a significant first, over 120 countries have endorsed the COP28 UAE Declaration on Climate and Health, highlighting the need to address the links between climate change and public health²⁷.

However, progress on A&R appears to be slow due to barriers associated with a lack of financing, limited underpinning of scientific research, and insufficient tools and technologies. Within the system, collaborative

action is occurring between large international organisations such as the World Health Organisation (WHO) and regional and local governments. For example, the Alliance for Transformative Action on Climate and Health (ATACH) along with WHO’s Member States and other stakeholders are working towards building climate resilient and sustainable health systems, and promote the integration of the climate change and health nexus into national, regional, and global plans.

27 COP28 (2023): COP28 UAE Declaration on Climate and Health: <https://www.cop28.com/en/cop28-uae-declaration-on-climate-and-health>

Table 2: Business activities contributing to Health Systems

Health: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> • Early warning systems for employees • Health surveillance systems • Emergency planning systems to cope with extreme weather events • Resilient health and safety policies and practices, including addressing extreme heat • Updated emergency response plans incorporating acute climate risks 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> • Maintain business continuity as a result of a healthy and safe workforce • Providing goods and services to address increased early warning, cooling and heat safety requirements • Research and development into drug and vaccination technologies to address emerging needs from acute and systemic climate impacts on prevalence and spread of disease • Protecting wildlife habitats and conservation of biodiversity can help prevent the spread of zoonotic diseases 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> • Education and awareness raising with healthcare professionals • Engage with multilateral organisations to gather best practices, insights, and identify priority areas • Collaboration with tech leaders to develop tools that can be used and scaled by businesses • Extending early warning systems to communities • Collaboration with national and local governments to maintain availability of critical • Work with local governments on emergency response plans • Collaboration with local and regional governments to share data on local climate health impacts, such as heat waves, or reemergence of diseases • Work with regional and national governments and organisations to improve resilience of supply chains to ensure that climate disruptions are minimised and the delivery of medical supplies and equipment is not delayed • Partner with local organisations or NGOs to raise awareness and focus on prevention of climate-related diseases and health risks

Examples of business action

GSK

GSK demonstrates how businesses can contribute to the SAA Health Outcome 4 (to increase financing flows to build climate-resilient health systems) through the allocation of private financing into improving the health of communities that are most vulnerable to infectious diseases, and using technology to help scale adaptation solutions.

GSK is a global biopharma company that believes health should be included as a key part of A&R discussions. Its ambition is to positively impact the health of 2.5 billion people by the end of 2030, including 1.3 billion people living in low- and lower middle- income countries, which are already seeing the impact of climate change on health. Global health and health security is one of GSK's priority ESG focus areas, helping to deliver on its purpose, build trust with and generate value for its stakeholders.

GSK is currently on track to invest more than 50% of its £1bn global health research and development budget on climate-aggravated diseases that disproportionately impact lower-income countries, over the next 10 years. Infectious diseases disproportionately impact the most vulnerable communities, including climate-sensitive diseases such as malaria and typhoid. GSK is working with Microsoft and the Centre for Health and Disease Studies Nepal on a disease surveillance project using Microsoft's Premonition systems to better understand how AI and robotics can support communities in responding to vector borne diseases and climate change.

GSK, through their partnership with Save the Children, is investing to build the resilience of communities to support vulnerable health systems to prepare for and respond to climate shocks and stresses. GSK is investing in Save the Children's Anticipatory Action work, taking a proactive approach to get ahead of emerging risks, implementing early action activities with at-risk communities. A pilot project in Nepal will help test and then roll-out activities²⁸.

GSK is also seed funding the full design of two ground-breaking climate health adaptation projects with partner governments in Malawi and Senegal, two of the countries most vulnerable to the impacts of climate change. When approved, the designs will catalyse an investment of over USD \$60 million across the two countries from the Green Climate Fund – the world's largest dedicated fund for climate action – to create climate-resilient communities and health systems. GSK is working to leverage their own technical expertise and knowledge to inform the programme designs from 2023 onwards.

28 GSK (2023). GSK and Save the Children renew award-winning partnership, with focus on 'zero dose' children who have never received a vaccine:

<https://www.gsk.com/en-gb/media/press-releases/gsk-and-save-the-children-renew-award-winning-partnership/>



WATER & NATURE SYSTEMS

Both water and nature system resilience is critical as it cuts across all other systems, underpinning their adaptation outcomes that are dependent on the resources nature provides.

An analysis by PwC found that more than half of the world's Gross Domestic Product (GDP) - equivalent to US\$58 trillion - is moderately or highly dependent on nature, for example. Industries currently generating 15% of the global GDP including construction, agriculture and food and beverage are highly dependent on nature²⁹. According to the UN, nature-based solutions can generate 20 million new jobs by further harnessing the power of nature to address the major challenges facing society, such as climate change, disaster risk and food and water insecurity. Implementation of 'just transition' policies can help significantly increase rural employment if investments are made in policies

that harness nature, while ensuring human well-being³⁰. Resilient water and nature systems are therefore central to functioning value chains and economies and should be a priority for business action, in all sectors.

²⁹ PwC (2023). Managing nature risks: from understanding to action: <https://www.pwc.com/gx/en/issues/esg/nature-and-biodiversity/managing-nature-risks-from-understanding-to-action.html>

³⁰ United Nations (2022). 'Just Transition' policies needed to create 20 million green jobs: UN Report. <https://news.un.org/en/story/2022/12/1131562>

The water and nature systems are both highly complex and interdependent, and highly exposed and vulnerable to a changing climate. The SAA efforts include amongst others the restoration of rivers and wetlands, integrating water planning into national policies for transformative agricultural climate outcomes, investing 1% of annual water sector spending in nature-based solutions for improved management and water security, implementing efficient water systems with reduced leakage and maximising recycling, and engaging financial institutions to eliminate commodity-driven deforestation and invest in required nature-based solutions opportunities.

The achievement of these global outcomes, and a more resilient water and nature system, offers business benefits including, but not limited to, maintaining business continuity if reliant on resources or services provided by these systems, maintaining financial returns if ecosystem disruptions are minimised, and an increase in the livelihood and health of the workforce and the communities in which they operate. Most businesses are dependent on water and nature systems and the services they provide currently and for free, therefore, significant financial impacts may occur if these systems are not maintained and adapted.

The private sector can play a leading role in delivering SAA adaptation outcome targets by providing climate resilient water, sanitation, and hygiene services, building smart, efficient and robust water infrastructure, and improving water use efficiency through their products and services. They can also support the management and protection, as well as managing and/or protecting of key natural systems to safeguard water security and halt land conversion through their own operations, supply chains and portfolios. Water and nature have gained more attention, especially as a result of the Taskforce on Nature-related Financial Disclosures (TNFD) recent recommendations and guidance for organisations to report and act on their nature-related dependencies, impacts, risks and opportunities. Global campaigns such as 'It's Now for Nature' recognise that businesses are not able to sustainably grow or achieve

their climate goals without the protection and restoration of nature. This campaign brings businesses together to contribute to a nature-positive world by 2030³¹.

Nature-based solutions have already proven to be successful adaptation solutions that helps to protect not only the environment, but improves the resilience of communities to the physical impacts of climate change, and can also go hand in hand with efforts to mitigate greenhouse gas (GHG) emissions. The SAA progress report acknowledges that the recent recognition and universal definition of nature-based solutions make it easier for such measures to be implemented and therefore have accelerated the positive development in this system.

There are many resources now available to businesses within the nature system, along with measurable targets that can help businesses track progress. For example, Business for Nature, WBCSD, and the World Economic Forum have jointly developed sector-specific guidance for 12 sectors that businesses can use to help transform their business to help halt and reverse nature loss and contribute to a nature-positive economy³². The Nature Strategy Handbook also provides businesses with recommendations on how to develop a nature strategy and provides useful tools and resources³³. Although there is activity occurring within both systems, there is a large gap between levels of funding for water-related projects and a large amount of investment is needed for both water and nature-related projects for businesses to accelerate implementation of A&R solutions in order to preserve the resources provided by these systems.

31 The Business for Nature Coalition (2023). It's Now for Nature: Where is nature in your business strategy?: <https://nowfornature.org/>

32 Business for Nature, World Business Council for Sustainable Development, World Economic Forum (2023). Sector Actions Towards a Nature-positive Future: <https://www.businessfornature.org/sector-actions#:~:text=%27It%27s%20Now%20for%20Nature%27%20>

33 It's Now for Nature (2023). Nature Strategy Handbook: A practical guide for businesses: <https://nowfornature.org/read-the-handbook/>

At COP28 the water and nature sector experienced some wins, as action to protect and restore forests, mangroves, land and ocean seems to be moving forward³⁴. During COP28's Nature, Land Use, and Ocean Day, nations and non-state participants came together to support nature-based climate action. An announcement of \$186.6 million in funding aimed at forests, mangroves, and ocean initiatives was made. These new commitments complement the pledges made at COP28's World Climate Action Summit on December 2, 2023, where \$2.5 billion was raised to safeguard and rejuvenate natural ecosystems.

Within the system, a lot of collaborative action is occurring between organisations, businesses, and governments who are all convening to help accelerate the resilience of these systems. For example, the Water Resilience Coalition (WRC), is an industry-driven initiative of the CEO Water Mandate between the United Nations

Global Compact and the Pacific Institute, aimed at reducing global water stress by 2050. WRC members work to preserve the world's freshwater resources through collective action in 100 priority water-stressed basins and through ambitious, quantifiable goals. WBCSD, with over 225 leading business members, helps members take action to restore nature, specifically through their Nature actions areas, including the Nature-based Solutions work stream, where they work together with members to improve understanding of nature-based solutions, how to recognise the associated opportunities for businesses, and how to finance and deliver nature-based solutions. WBCSD's Nature Positive Roadmaps (2023)³⁵, provides guidance for all businesses to accelerate action and accountability in support of nature-positive outcomes as well as in-depth analysis for four high impact systems on nature (agri-food, forest products, built environment and energy).

Table 3: Business activities contributing to the Water & Nature systems

Water & Nature: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> • Watershed restoration and conservation activities including planting and safeguarding forests and wetlands • Treatment and recycling of wastewater • Retrofitting drainage systems • Protection, restoration and sustainable management of land • Resource efficiency measures 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> • Maintain business continuity as resources needed for products continue to be available • Increase in livelihood and health of their workforce and the communities in which they operate • Additional markets for new products • Co-benefits with mitigation action • Operational efficiency benefits 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> • Engage with conservation authorities, academic institutions and communities including ecologists and biologists to develop and implement effective and locally appropriate nature-based solutions • Collaborate with local communities and other organisations to create local water stewardship programmes • Engage and finance citizen science projects in order to gather important local data • Share research and development initiatives around nature-based solutions and innovative adaptation actions • Support the financing of large-scale restoration projects, nature-based adaptation efforts, or community engagement projects

34 COP28 (2023). United for Nature: COP28 mobilises action to protect and restore forests, mangroves, land and ocean:

<https://www.cop28.com/en/news/2023/12/United-for-Nature-COP28-mobilizes-action-to-protect>

35 WBCSD (2023). Roadmaps to Nature Positive - Foundations for all businesses: <https://www.wbcd.org/Imperatives/Nature-Action/Nature-Positive/Roadmaps-to-Nature-Positive/Resources/Roadmaps-to-Nature-Positive-Foundations-for-all-businesses>

Examples of business action

Water Resilience Coalition

The Water Resilience Coalition (WRC) demonstrates how collaboration between multi-stakeholders is helping to deliver on the SAA Water and Nature Outcome 4 (to invest in nature-based solutions via watershed investment programs resulting in improved management of rivers, lakes and wetlands, driving water security benefits and improving critical habitat for biodiversity), highlighting water funds that are protecting a significant water basin using nature-based solutions.

The WRC is a CEO-driven initiative of 35 global companies within the UN Global Compact's CEO Water Mandate. The WRC's main intent is to build a water resilient future by investing in the members' own operations and working collectively to address the underlying issues affecting the health of the world's shared freshwater resources and building positive water impact across 100 priority freshwater basins that serve our communities, industry and environment by 2030³⁶.

The WRC has mobilised its members to contribute to The Nature Conservancy's São Paulo Water Fund helping to aid watershed restoration projects in the Piracicaba, Capivari and Jundiaí (PCJ) river basin. The WRC has brought together local producers, community leaders, governments and business to build water resilience in the PCJ river basin, which supplies more than 70% of the region's water, supporting Brazil's largest city of São Paulo. The region has experienced seven droughts in the last decade, and in response, this group has collaborated on watershed restoration projects working with members of the Piracaia community to incentivize nature-based solutions by planting and safeguarding forests that naturally filter water and protect streamflow. Companies including ABInBev, the Coca-Cola Co., Cummins Inc., Ecolab and Starbucks have all helped to scale these efforts, helping to multiply the economic, biodiversity and health benefits far beyond the reach of a single company or partnership³⁷. To date the project has restored over 11,000 hectares of vulnerable watersheds benefiting 12 million people downstream in and around Brazil's largest city. Through this initiative, the companies of the WRC have reduced material risk from drought to their operations in the São Paulo region. By investing collectively, the companies contributing to the project have multiplied their individual impact to restore nearly 400 million litres per year to the watershed, building resilience for their local operations and suppliers, along with contributing to enterprise-level sustainability objectives³⁸.

GSK

GSK demonstrates how businesses can contribute to the SAA Water and Nature Outcome 2 (to target communities living in the overlap of high climate hazard exposure and insufficient water, sanitation, and hygiene access with climate resilient water, sanitation, and hygiene services), through collaborating with local organisations to implement adaptation measures, highlighting how accessible and clean water is needed to improve the health and livelihoods of vulnerable communities.

GSK is a global biopharma company that is focusing on water as a key part of building climate resilience and contributing to a net zero, nature positive world. Water is not only vital for human health, but also plays a crucial role in the production of medicines and vaccines. The effects of climate change and nature loss are putting water and health at risk, in many countries. In Nashik, India, a water-stressed region where they operate, GSK has partnered with a local NGO, Watershed Organisation Trust (WOTR), on a water replenishment project designed to improve ecosystem conditions, enhance the climate resilience of local agriculture, and empower local villages to manage water resources to improve their health and livelihoods. Protecting nature makes GSK's business more resilient and helps to ensure the ongoing supply of raw materials needed for manufacturing.

Standard Chartered Bank

Standard Chartered Bank demonstrates how financial institutions can contribute to the SAA Water and Nature Outcomes 2 and 5 (to target high climate hazard exposed communities with insufficient water, sanitation, and hygiene access with climate resilient water, sanitation, and hygiene services in addition to smart, efficient and robust water systems that reduce water loss and maximise wastewater recycling and reuse), through directing financing and investment to increase the resilience of water systems.

Standard Chartered Bank (SCB) is a leading international bank that recognizes the urgent need to adapt to climate change and other hazards, in order to protect communities from increasingly frequent and severe hazard events. They released a report titled, *The Adaptation Economy (2023)*, which examines the need for adaptation investment in 10 developing markets and explores the current appreciation and appetite for this investment among global banks, asset managers and investors³⁹. The report makes the case that the economic pay-off of early action toward adaptation in these 10 markets, presents a twelve-to-one 'return' this decade and that the cost of inaction in terms of loss and damage could amount to an estimated USD376.6 billion (in a 1.5°C warming scenario) by the end of 2030.

SCB, in conjunction with Angola's Ministry of Finance, coordinated a USD1.1 billion financing facility backed by the International Bank for Reconstruction and Development (IBRD) and Bpifrance. The aim was to help transform the capital Luanda's water production, purification, transmission, storage and distribution facilities, through the investment in water treatment plants, a transmission system, water storage facilities, distribution centres and installation of new networks and metered connections. The Luanda Bita Water Supply Project is expected to improve access to potable water for over two million residents in parts of South Luanda, contributing to the United Nations' Sustainable Development Goal 6, which relates to increasing access to clean drinking water and sanitation for all.

SCB, as a key deliverable of their innovation hub, have partnered with KPMG and United Nations Office for Disaster Risk Reduction (UNDRR) to write the market's first Guide to Adaptation and Resilience Finance (GARF), which will set out the kinds of activities which are eligible for 'adaptation finance', centred around bankable opportunities in emerging markets. This was recently announced at COP28. The document will aim to define adaptation finance from the banking sector's perspective, allowing investors, governments and multilaterals to come together and drive finance towards adaptation.

36 CEO Water Mandate (2023). Water Resilience Coalition:

<https://ceowatermandate.org/resilience/about/>

37 United Nation Global Compact (2023). Impact Story: Collective action brings clean fresh water to millions in Brazil: <https://unglobalcompact.org/take-action/impact/collective-action-brings-clean-fresh-water-to-millions-in-brazil>

38 CEO Water Mandate (2023). UN General Assembly 2023 - Corporate Water Stewardship Half-Day Event. <https://www.linkedin.com/events/7107931461688729600/>

39 Standard Chartered (2023). *The Adaptation Economy: The case for early action on climate adaptation*: <https://www.sc.com/en/campaigns/adaptation-economy/>



COASTAL & OCEAN SYSTEMS

Coastal and ocean systems are experiencing the impacts of climate hazards such as sea level rise, ocean acidification, and extreme weather events. The economy for coastal communities, especially Small Island Developing States (SIDS) and Least Developing Countries (LDCs), depend on these systems for shipping, fishing, and tourism. A recent Ocean Panel-commissioned report found that coastal and marine tourism represents at least 50% of all global tourism, constituting the largest economic sector for most SIDS⁴⁰. These regions are the most vulnerable to climate impacts on these systems and the viability of this sector in particular is critical for communities that rely on it. The protection of these systems is uniquely important since they help mitigate climate change risks by providing natural buffers to sea level rise and extreme weather events, as well as sequestering carbon.

The SAA efforts aim to double global mangrove protection to safeguard people and property, while also investing in restoring and protecting shallow-water tropical coral reefs to bolster resilience for over half a billion people globally. Additionally, strategies include safeguarding coastal cities from ocean-based hazards, protecting seagrass ecosystems to mitigate

climate change and support biodiversity, and halting loss while restoring marshes and kelp forests to benefit temperate communities. The achievement of these global outcomes, and a more resilient coastal and ocean system, offers business benefits including, but not limited to, avoided costs associated with damage to assets or infrastructure located in coastal areas as a result of extreme weather and rising sea levels, maintaining business continuity if located in coastal areas, minimising disruptions of supply chains if reliant on shipping as a means of moving products, and maintaining business continuity if reliant on coastal and oceanic ecosystems (particularly to the tourism and shipping sectors).

This system is expected to experience significant advancements in the near future, as countries continue to engage on coastal and marine nature-based solutions that are aided by investment of financial institutions and insurers.

⁴⁰ World Resources Institute (WRI) (2023). Ocean panel countries call for a shift towards sustainable tourism to safeguard the ocean and future of the tourism industry: <https://www.wri.org/news/release-ocean-panel-countries-call-shift-towards-sustainable-tourism-safeguard-ocean-and>

There is a diverse range of initiatives and mechanisms and frameworks that have emerged, with international sustainability regulations targeting ocean systems. Within the system, collaborative action is seen through many initiatives and partnerships that can leverage an extensive body of scientific research available to help support adaptation solutions. From research conducted, businesses implementing A&R solutions in this system have focused on nature-based solutions, including mangrove conservation and restoration. Although the estimated costs associated with inaction are substantial, especially for businesses with assets located in coastal areas or businesses that rely on services provided by coastal and marine ecosystems, it is unclear how finance has progressed and there are still challenges associated with data gaps.

The Ocean Stewardship Coalition, for example, is a coalition of the United Nations Global

Compact (UNGC) for Ocean Stewardship, which consists of leading governments, companies, NGOs, academic institutions and UN partners to drive action and determine how the ocean, and ocean industries, can deliver on the Paris Agreement and all 17 of the Sustainable Development Goals (SDGs).

The earlier described finance agreement focusing on nature-based solutions for land and oceans made at COP28 can also be seen as a success not only for the water and nature sector, but likewise for the coastal and ocean systems. With \$18.6 million agreed in funding for nature-based solutions protecting especially mangroves and ocean ecosystems, this sector can profit, nevertheless this funding agreement can only be seen as a starting point. Amongst this commitment, 21 countries endorsed a Mangroves Breakthrough at COP28, to secure 15 million hectares of mangroves globally by 2030⁴¹.

Table 4: Business activities contributing to the Coastal & Ocean systems

Coastal & Oceans: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> • Restoration and conservation of mangroves • Preservation of coral reefs 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> • Maintain business continuity if located in coastal areas • Minimising supply chain disruptions of supply chains if reliant on shipping as a means of moving products • Avoiding costs associated with damage to assets or infrastructure located in coastal areas a result of extreme weather and rising sea levels • Maintaining business continuity if reliant on coastal and oceanic ecosystems (e.g., fishing and tourism industries) 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> • Collaborate with marine conservation organisations to share data to improve business conservation efforts • Support marine organisations to influence local and national governments to engage in adaptation efforts • Engage with local communities and small-scale fisheries to share access to data, tools, or finance mechanisms

41 COP28 (2023). United for Nature COP28 mobilises action to protect and restore forests, mangroves, land and ocean:

<https://www.cop28.com/en/news/2023/12/United-for-Nature-COP28-mobilizes-action-to-protect>

Examples of business action

The following case studies demonstrate how collaboration between multi-stakeholders can contribute to the SAA Coastal and Ocean system Outcomes 1 and 2 (investing to secure mangroves globally and protecting and restoring coral reefs to support people in tropical communities).

The Nature Conservancy (TNC)

The Nature Conservancy (TNC) is a global environmental non-profit, working to protect, restore, and conserve natural habitats that help protect communities from the impacts of climate change⁴². In partnership with TNC, the Seychelles government is working to safeguard its pristine marine ecosystems while sustaining its economy through the implementation of a groundbreaking debt for nature deal⁴³. Debt-for-nature swaps are financial mechanisms that can be used to ease debt burdens whilst creating environmental and conservation programs. The Seychelles, one of the SIDS, repurchased \$21.6 million of sovereign debt at a discount, via the world's first Blue Economy debt for nature swap and through launching the world's first sovereign blue bond. The debt, funded by private philanthropy and TNC's NatureVest conservation unit, was repaid to establish the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) responsible for distributing the funds. SeyCCAT committed to repaying the \$15.2 million loan over a decade, with an additional \$5.6 million dedicated to support the management and expansion of the Seychelles Marine Protected Areas (MPAs), sustainable fisheries, and other conservation and climate adaptation activities over 20 years, along with a \$3 million endowment for perpetual support.

With the support of the TNC, these initiatives have proven to be very successful. The debt conversion has helped the Seychelles' government to make policy commitments through MPAs to safeguard 30% of its Exclusive Economic Zone (EEZ), a 1.37 million km² area of ocean and coastal resources under Seychelles' jurisdiction. The Blue Bond has raised US\$15 million from international investors, which has demonstrated the potential for countries to harness capital markets for financing the sustainable use of marine resources⁴⁴.

Munich Re

A global reinsurance leader, has partnered with Willis Towers Watson and The Nature Conservancy to introduce parametric insurance protecting coral reefs in Hawaii⁴⁵. Originally launched in Mexico and extended to cover the Mesoamerican reef system, this innovative insurance product triggered a payout after Hurricane Lisa hit Belize. With Munich Re providing a policy, the parametric coverage offers quick payouts of up to US \$2 million, facilitating rapid reef repair and restoration following storm damage. This initiative marks a significant step in coral reef conservation during the 2023 hurricane season, showcasing the intersection of climate and financial risk management.

42 The Nature Conservancy (2023). About us: Who we are:

<https://www.nature.org/en-us/about-us/who-we-are/>

43 The Nature Conservancy (2023). The Debt-for-Nature Lifeline:

<https://www.nature.org/en-us/what-we-do/our-insights/perspectives/debt-for-nature-lifeline/>

44 The Commonwealth Blue Charter (2020). Case Study: Innovative Financing - Debt for Conservation Swap, Seychelles' Conservation and Climate Adaptation Trust and the Blue Bonds Plan, Seychelles (ongoing): <https://thecommonwealth.org/case-study/case-study-innovative-financing-debt-conservation-swap-seychelles-conservation-and>

45 ARTEMIS (2022). Munich Re backed parametric insurance launched for Hawaii's coral reefs: [https://](https://www.artemis.bm/news/munich-re-backed-parametric-insurance-launched-for-hawaiis-coral-reefs/)

www.artemis.bm/news/munich-re-backed-parametric-insurance-launched-for-hawaiis-coral-reefs/



HUMAN SETTLEMENT SYSTEMS

By 2030, the global share of the urban population is projected to rise to 60% with one third of the global population estimated to be living in cities with at least half a million inhabitants⁴⁶. This means that most goods and services will be in service of the needs of a predominantly urban population, and will rely on urban infrastructure resilience, from transport to waste management to social care. Equally, rural populations support vital upstream economic activities. Additionally, small- and medium-sized enterprises (SMEs), both in rural or urban areas, make up to 90% of all businesses and contribute to nearly 70% of global employment and GDP⁴⁷.

From urban developments to rural neighbourhoods, all human settlements are vulnerable to climate hazards such as flooding, extreme heat, or wildfires to varying degrees, based on exposure. Unfortunately, cities are often ill-equipped to handle these challenges

due to inadequate resources, planning gaps and difficulties in mobilising funds. SAA focuses on positive outcomes for increasing resilience, among them efforts around providing people with improved access to finance for decent, safe housing and achieving universal coverage for multi-hazard early warning systems.

46 United Nations Department of Economic and Social Affairs (2020). Policies on spatial distribution and urbanisation have broad impacts on sustainable development: https://www.un.org/development/desa/pd/sites/www.un.org/development/desa/pd/files/undes_pd_2020_popfacts_urbanization_policies.pdf 4

47 World Economic Forum (2022). The big opportunity behind small businesses: <https://www.weforum.org/agenda/2022/12/future-readiness-here-s-why-smaller-businesses-success-matters/>

At COP28, as part of the Early Warning for All initiative, introduced by the UN Secretary-General at COP27, the UNDRR and the World Meteorological Organization released a progress report on the global implementation of early warning systems⁴⁸. The report found that Africa has now doubled the quantity of early warning systems coverage. Another key outcome of COP28 was the Loss and Damage Fund, hosted by the World Bank, which now includes pledges of over \$700 million from countries around the world. These recent developments mark a significant step forward in addressing climate impacts for human settlements.

Rooted in risk and disaster reduction, there are many initiatives when it comes to adaptation, however the strong focus of settlements is still on GHG reduction through mitigation efforts. In recent years, we have seen increased global focus on the collaboration front, where many global or local alliances have been built to advance adaptive efforts. Despite the progress, there is a notable absence of overarching targets and metrics that organisations can universally apply. Some actors are starting on this including the Center for Climate and Energy Solutions (C2ES) who created An Emerging Blueprint for Companies to Advance Local

Climate Resilience⁴⁹. The document outlines the strategies to advance local climate resilience, identifying seven strategies companies are already practising to help communities assess climate risks, build local capacity, and implement projects that increase resilience. At COP28, as part of the Early Warning for All initiative, introduced by the UN Secretary-General at COP27, the UNDRR and the World Meteorological Organization released a progress report on the global implementation of early warning systems⁴⁸. The report found that Africa has now doubled the quantity of early warning systems coverage. Another key outcome of COP28 was the Loss and Damage Fund, hosted by the World Bank, which now includes pledges of over \$700 million from countries around the world. These recent developments mark a significant step forward in addressing climate impacts for human settlements.

48 World Meteorological Organization (2023). Global Status of Multi-Hazard Early Warning Systems 2023: <https://wmo.int/publication-series/global-status-of-multi-hazard-early-warning-systems-2023>

49 Center for Climate and Energy Solutions (2022). An Emerging Blueprint for Companies to Advance Local Climate Resilience: <https://www.c2es.org/document/an-emerging-blueprint-for-companies-strategies-to-advance-local-climate-resilience/>

Table 5: Business activities contributing to the Human Settlement system

Human settlements: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> Nature-based infrastructure (e.g. sponge cities) Early warning weather systems to inform habitants in advance 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> Providing services required to enhance resilience (i.e., construction of large nature-based infrastructure projects) Avoided costs associated with damage to assets and infrastructure as a result of climate shocks 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> Collaboration to help to define standards and guidelines for this sector. Share knowledge and data to create safe homes for all and enable early warning systems to reach all societal groups

Enhancing Resilience	Capitalising on Opportunities	Shaping Collaborative Outcomes
<ul style="list-style-type: none"> Secure homes and climate-resilient housing for local communities Equal access to safe housing for all habitants Short-term precipitation forecasting Live repository of evidence-based knowledge and data on school infrastructure performance in natural hazard events 	<ul style="list-style-type: none"> Increasing livelihoods and secure homes of local communities to promote good working environment Stable settlements decrease the risk of relocation of workforce or local consumers Increase in safety of their workforce and the communities in which they operate Maintain business continuity as a result of a safe workforce 	<ul style="list-style-type: none"> Engage and share knowledge with local policy makers and government organisations to spread the idea of climate-resilient settlements

Examples of business action

The following is an example of how collaboration within the investment realm is helping to deliver on the SAA Human Settlements Outcome 3 (investments in nature based solutions to increase the resilience of human settlements).

The Nature-based Solutions Investment Platform

The Nature-based Solutions Investment Platform, created through a partnership between Capital for Climate and in collaboration with the High-Level Champions and Race to Zero teams, is designed to provide allocators with a comprehensive view of climate investment opportunities in one location. Nature-based solutions are already a viable investment and are expected to become a fundamental element of climate-focused portfolios in the near term. The Nature-based Solutions platform is supporting this endeavour and is providing interested organisations with information and support for investing in nature-based solutions.

Global Paramedics

Global Paramedics demonstrate how businesses can contribute to the SAA Human Settlements Outcome 1 (access to financing of decent, safe homes).

Global Paramedics, in collaboration with Corp-EFF Insurance Company, Climate Resilience Execution Agency for Dominica (CREAD), Diagon Consulting Ltd, and vlinder.io, is expanding its Flexible Hurricane Protection (FHP) solution as island-wide offerings in Dominica and Grenada⁵⁰. The FHP, a parametric protection policy, provides protection against the occurrence of specific events, rather than for specific assets. It offers tailored, accessible, and affordable protection for tropical cyclones, spanning from Tropical Storms to Category 5 Hurricanes. The integrated policy platform allows policyholders to monitor events by utilising public atmospheric data and ensures swift payouts in case of events, determined by the proximity of the storm to the customer's location. There are no assessors before a customer takes out the policy, no claims need to be filed if the event occurs, and no claims need to be adjusted after the event. The island-wide rollout follows a successful pilot in Dominica since 2021, marking a significant milestone in the collaborative mission. This insurance benefits households, businesses, and communities and allows the customer to use the proceeds however they wish.

⁵⁰ Flexible Hurricane Protection (2023). How it works: <https://corpeff-parametro.klefki.io/product/fhp>



INFRASTRUCTURE SYSTEMS

Infrastructure, especially in energy and transport, is critical for human well-being and plays a vital role in our ability to withstand climate change impacts. Ensuring universal access to reliable power and mobility is crucial. Exposure to extreme heat, flooding, and wildfires endangers power supply and the transportation networks, impacting vulnerable communities disproportionately.

The SAA wants to achieve, among others, outcomes like increasing transmission and distribution grids' resilience, scaling up regional power pool integration, integrating energy infrastructure adaptation into national plans, providing affordable and sustainable electricity access, ensuring clean cooking access, reducing cooling electricity consumption, and increasing climate-resilient transport infrastructure through technological advancements.

The development of a more resilient infrastructure system offers several business advantages including global access to affordable, reliable and sustainable energy, continuity of access to markets, lower operating costs from efficiency gains, and low-cost green mobility solutions needed for the transportation of goods and for commuting staff.

Our research suggests that the infrastructure system is currently lagging behind others, lacking comprehensive frameworks, tools,

or established targets. However, there is a promising development of solutions, including the emergence of parametric insurance offerings, indicating increasing flows of financing and significant potential in the expansion of solutions. There are also several examples of collaboration occurring within the system.

The International Coalition for Sustainable Infrastructure (ICSI) which brings together a global coalition of change agents from across the engineering, investment, city, and philanthropic communities committed to bold action to solve the systemic problems that exist at the intersection of climate change, ecosystem degradation, ageing infrastructure, and underinvestment.

In 2021, The Resilience Shift, in collaboration with Arup, introduced Infrastructure Pathways, an initiative by ICSI. This resource serves as a guide for constructing climate-resilient infrastructure systems⁵¹. Additionally, the BuildingToCOP coalition brings together leaders from across the sector promoting the built environment's potential in accelerating the transition to a healthy, safe and resilient net zero future. The coalition believes that in order to meet adaptation target outcomes of the SAA for the infrastructure system, government policies must enable the sustainable transformation of the built environment⁵².

At COP28, parties agreed that infrastructure as a topic should be included as part of the GGA. The COP28 final text calls on Parties to contribute to global efforts including “tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030.” Additionally, the Global Renewables and Energy Efficiency Pledge launched by the EU with the COP28 Presidency and 118 countries as part of the World Action Summit, sets a global goal to triple installed capacity to at least 11 terawatts by 2030. Between these agreements, the UN High-Level Champions, together with International Renewable Energy Agency (IRENA), launched the Utilities for Zero Alliance, with 31 partners including 25 global utility and power companies committing to advance electrification, renewables-ready grids and clean energy deployment. Focusing on renewable energy can help increase the resilience of energy infrastructure, hence, improvements and agreements on renewable energy can increase the adaptive capacity of this system.

The United Nations High-Level Climate Champions and the Boston Consulting Group released a report on Adaptation and Resilience Through Land Transport Infrastructure Systems 2023⁵³ to help serve as a discussion basis for COP28. The report was informed by interviews with relevant public and private sector stakeholders and assesses current adaptation and resilience efforts to protect land transport infrastructure, provides a framework for collaborative action, and identifies global priority topics.

51 International Coalition for Sustainable Infrastructure (ICSI) by The Resilience Shift and ARUP (2021). Infrastructure Pathways: <https://infrastructure-pathways.org/overview/>

52 BuildingToCOP (2024). BuildingToCOP: <https://buildingtocop.org/>

53 United Nations High-Level Climate Champions and Boston Consulting Group (2023). Adaptation and Resilience Through Land Transport Infrastructure Systems: <https://web-assets.bcg.com/53/f6/ce1ba246496ab35b606406e33fd4/bcg-hlc-anr-infrastructure.pdf>

Table 6: Business activities contributing to the Infrastructure system

Infrastructure: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> • Diversification of energy resources • Grid modernisation • Energy storage options • Green infrastructure • Shock resilient transport infrastructure 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> • Innovative green energy products • Advanced battery storage solutions • Intelligent grid systems • Innovative construction materials • Increase in savings and accessible transport infrastructure 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> • Building and planning companies working with governments to design fit for purpose policies and regulations to address resilience • Helping to developing engineering standards and sharing developments in communities of practices • Collaborate on training programs and capacity building for initiatives for professionals in this field • Collaborate and share open source data or innovative ideas around pioneering infrastructure projects • Engage in public-private partnerships with local or national governments to create innovative infrastructure projects

Examples of business action

The following are examples of how businesses within the infrastructure realm are helping to deliver on Outcome 1 (enabling affordable access to electricity for 679 million unconnected people).

Descartes Underwriting

A global parametric insurance provider, offered parametric insurance coverage to an offshore wind company in Taiwan. Their client was facing future cash flow uncertainty due to inherent wind volatility at one of their new development sites. The client needed to purchase insurance as part of the terms set by its financing parties to prove its covered against loss of revenue due to lack of wind. However, the traditional market usually does not offer coverage for deficiency or excess of wind. Descartes' policy was able to provide parametric coverage where the client could receive a cover that triggers when power generation does not meet pre-agreed thresholds. The client would receive a swift payout, enabling business continuity and economic balance for all parties. This product provided the client full financial security which enabled them to avoid revenue loss if they experienced a drop in energy production, and allowed them to continue construction.

The following case study is an illustration of how businesses in the infrastructure sector can contribute to achieving Outcome 6 (providing 2.2 billion people with affordable, clean transportation options by expanding accessible public and private transport services).

Raincoat

Raincoat develops climate insurance products and collaborates with insurers, reinsurers, governments, and financial institutions to offer instant, direct, and transparent protection to those at risk from natural disasters, helping communities rebuild and recover from the devastating impacts of these events. Raincoat in collaboration with Hyundai, developed an embedded hurricane benefit for Hyundai customers intended to provide financial aid within 48 hours to customers in the aftermath of a hurricane. This aid would in turn help customers recover from the event and provide liquidity for relocation or the purchasing of necessary supplies such as food and water. The benefit was 100% subsidised by the car manufacturer and resulted in an increase in customer satisfaction and sales.



CROSS-CUTTING ENABLERS: PLANNING AND POLICY

Planning and policy are included in the SAA as cross-cutting enablers, as both are needed to create enabling environments that encourage, enable and ultimately require A&R actions across all impact systems.

The SAA seeks to achieve the following:

- For cities and regional governments and large businesses having developed evidence-based, actionable adaptation plans;
- Universal access to data and analytics required to integrate climate risks into decision making and action across all levels; and
- To operationalise Nationally Determined Contributions (NDCs) with adaptation components, National Adaptation Plans (NAPs), and locally led adaptation plans.

The agreement on the Global Goal on Adaptation during COP28 can be seen as a success for global adaptation policy, despite the need for clearer targets and financial pledges. The GGA sets out a high level framework to guide nations in their climate adaptation efforts. Whilst providing a high level lens on adaptation efforts, the GGA can help to support the successful implementation of the SAA, which remains the clearest framing for action at a systems level.

Table 7 below shows the types of actions that businesses in this system can take as part of their own adaptation business cases to help deliver on these SAA outcomes, and provides case study examples to bring this to life. In return, the achievement of effective planning and policy measures offers businesses the enabling environment needed to accelerate and scale adaptation implementation, allowing businesses to realise the benefits and opportunities that A&R action brings.

A notable shift in global policy marked a significant push for accelerated action in A&R. One policy cornerstone is the EU's Corporate Sustainability Reporting Directive (CSRD), which is based on the ESRS reporting standard, featuring several KPIs and data points around adaptation. Additionally, the EU Taxonomy asks companies to identify and report on economic activities that contribute to bring forward climate adaptation, such as those related to enhancing disaster risk reduction, and fostering adaptation strategies in sectors like infrastructure, agriculture, water management, and more.

Complementing this, recent voluntary initiatives aimed at supporting businesses across various systems have emerged, offering comprehensive frameworks and guidance to facilitate adaptation planning and implementation. These initiatives serve to bridge gaps between sectors and promote collaborative, innovative approaches essential for effective climate adaptation. Examples of such frameworks are the TCFD or the TNFD, which are global initiatives established to encourage organisations to disclose clear, consistent, and comprehensive information about their climate-related risks and opportunities, including risks and opportunities associated with biodiversity and ecosystem impacts and of their nature-related financial information. These initiatives help to bring adaptation to the global business agenda.

Additionally, commitments, policies and initiatives focused towards business may - and increasingly should - be included in NAPs. The NAP approach, established under the Cancun Adaptation Framework and re-emphasized in the Paris Agreement, is focused on reducing national vulnerability to climate impacts and integrating adaptation into national, sectoral and sub-national policies and programmes.

Table 7: Business activities contributing to Policy & Planning

Policy & Planning: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> Climate risk analysis Climate risk management Adaptation strategies to enhance resilience of own operations and business continuity planning Adaptation strategies to enhance resilience along the value chain including sourcing strategies and supply chain and distribution channel diversity and resilience 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> Identifying incentives from policies that enable and accelerate business A&R action that could translate into cost savings or market growth Planning alongside other stakeholders can help increase the effectiveness and efficiency of A&R actions 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> Persuade and help shape climate policy by engaging with governments and policy makers to help create an enabling and supportive regulatory and policy environment to accelerate and scale A&R action Engaging with financial institutions and insurers to help unlock finance and direct funds to the highest priority systems in a given region

Examples of business action

The following examples demonstrate how collaboration between multi-stakeholders is helping to deliver on Planning & Policy Outcome 1 of the SAA (10,000 cities and 100 regional governments have evidence-based, actionable A&R plans) through the development of innovative and nature-based solutions needed to scale action.

The EIT Climate-KIC

The EIT Climate-KIC (Knowledge and Innovation Community) is the European Union’s largest public-private climate initiative supported by the European Institute of Innovation and Technology. The initiative aims to identify and support innovation that can help accelerate the transition to a zero-carbon and climate-resilient society. The initiative brings together businesses, academia, and public and non-profit communities to create networks of expertise to develop innovative products, services, and systems that can help build capacity, skills, and solutions that can be scaled-up for maximum impact⁵⁴. ClimAccelerator, a global carbon removal programme powered by EIT Climate-KIC, with Munich Re and ERGO, has helped promote clean-tech startups and accelerate carbon removal solutions. The programme supports technological and nature-based solutions such as afforestation, direct air capture, biochar, and bioenergy-based carbon capture and storage⁵⁵. In addition to financial support, targeted coaching and training for the development of the business model, and access to networks, each start-up is offered mentoring from Munich Re and ERGO employees. Since the beginning of the collaboration in 2017, Munich Re and ERGO have mentored entrepreneurs in several countries and have helped to scale 20 start-ups. Munich Re and ERGO play a vital role in it and this in turn is used to shape policy⁵⁶.

54 EIT Climate-KIC (2023). We are Europe’s leading climate innovation initiative: <https://www.climate-kic.org/who-we-are/what-is-climate-kic/>

55 EIT Climate-KIC (2021). Munich Re and ERGO invest in EIT Climate-KIC carbon removal programme: <https://www.climate-kic.org/news/munich-re-and-ergo-invest-in-eit-climate-kic-carbon-removal-programme/>

56 ERGO Munich Re (2023). ClimAccelerator: Fostering Innovation: <https://www.ergo.com/en/Microsites/tacklingclimatechange/Start/Climate>

Blue Carbon

Blue Carbon is a UAE-based entity formed to create environmental assets, nature-based solutions, and register carbon removal projects in order to help accelerate the global transition to a low-carbon economy. Blue Carbon uses bilateral agreements to help governments and their clients to design and implement carbon abatement strategies inline with the Paris Agreement⁵⁷. Blue Carbon signed a Memorandum of Understanding with the Tanzanian Government, through the Tanzanian Forest Services Agency, to collaborate on sustainable forest management. The partnership aims to support the government's efforts to conserve, manage, and foster Tanzania's extensive forest resources and mangroves. This agreement will help the government of Tanzania achieve their mitigation and conservation goals whilst providing opportunities to local communities in carbon offset projects fostering sustainable economic growth and improving livelihoods. It will also strengthen the partnership between the UAE and Tanzania by developing new carbon offset projects to support decarbonization targets from this work⁵⁸. This collaboration underscores Blue Carbon's dedication to nature-based climate solutions and aligns with its goal of creating environmental assets under the Paris Agreement.

57 Blue Carbon (2023). Who we are: <https://bluecarbon.ae/>

58 Gulf News Report (2023). Blue Carbon and the Government of Tanzania join forces to accelerate transition to low-carbon economy:

<https://gulfnews.com/business/corporate-news/blue-carbon-and-the-government-of-tanzania-join-forces-to-accelerate-transition-to-low-carbon-economy-1.1675752836855>



CROSSING-CUTTING ENABLERS: FINANCE

Access to different sources of financing is needed in order to implement adaptation actions and solutions. Finance enablers will play a crucial role in achieving adaptation outcome targets and are needed to overcome barriers through the development of innovative solutions. The SAA emphasises achieving integrating physical climate risks analysis into investments decisions of the private sector, innovating financing mechanisms, while urging public finance actors to raise climate funds, allocating 50% to adaptation, and advocating for the global insurance sector's active support and institutional commitment to climate adaptation.

By increasing funding for A&R, businesses can better invest in and speed up adaptation action, harnessing the opportunities it brings.

Although multilateral climate funds have committed to double adaptation finance, private sector financing is lagging and there are not enough resources dedicated to adaptation activities or blended finance arrangements⁵⁹. The SAA Implementation Report 2023⁶⁰ indicates that the adaptation finance gap is widening. From the expected \$215-378 billion estimated annual needs for developing countries, only \$63 billion were invested in A&R. Both public and private funding will be necessary to reduce this gap. Innovative financial products, such as parametric insurance or blended financing facility solutions, can help play a pivotal role in helping businesses plan for and withstand the negative impacts of climate change on their business. These solutions can also help ensure that adaptation financing and solutions can reach the most vulnerable. An example of this is the Adaptation Fund, which finances projects and programmes that help vulnerable communities in developing countries adapt to climate change⁶¹. The Fund has committed over 1 billion for climate change A&R projects and programmes, including 160 localised projects in vulnerable communities and around the world with over 43 million total beneficiaries.

Examples include integrated approaches to physical adaptation in a Barbudan watershed or strengthening land-based adaptation capacities in Armenia.

Increasingly, frameworks within the finance sector are helping financial institutions in their decision-making when considering adaptation. The Institutional Investors Group on Climate Change's (IIGCC) discussion paper Working Towards a Climate Resilience Investment Framework 2022⁶² provides early insight into the first steps to creating a climate resilience investment framework, aiming to help investors integrate A&R into their portfolios across all asset classes.

59 Climate Policy Initiative (2023). Global Landscape of Climate Finance 2023: <https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Global-Landscape-of-Climate-Finance-2023.pdf>

60 High Level Champions and the Marrakech Partnership (2023). Implementation Report 2023 Sharm El-Sheikh Adaptation Agenda: https://climatechampions.unfccc.int/wp-content/uploads/2023/12/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report_3.12.2023.pdf

61 Adaptation Fund (2023). About the Adaptation Fund: <https://www.adaptation-fund.org/about/> - It is important to note that only institutions accredited by the AF may receive funding for adaptation projects, and countries must submit proposals through an accredited institution (including National Implementing Entities, Regional Implementing Entities, and Multilateral Implementing Entities).

62 The Institutional Investors Group on Climate Change (2022). Working Towards a Climate Resilience Investment Framework: https://139838633.fs1.hubspotusercontent-eu1.net/hubfs/139838633/Past%20resource%20uploads/IIGCC_Working-Towards-A-Climate-Resilience-Investment-Framework.pdf

63 UN Environment Programme (2019). Principles for responsible banking: <https://www.unepfi.org/banking/more-about-the-principles/>

In addition, the UN Environment Programme’s Principles for Responsible Banking provides a framework for sustainable banking outlining a three-step process that guides signatories through implementing their commitment⁶³.

Next to these frameworks, COP28 also offered substantial financial commitments of organisations and investors towards climate adaptation. The key output was a framework for the GGA which requires developed countries to provide support to developing countries and includes a financial target of at least \$400 billion in multilateral funds annually by 2030. The goal is to provide clear definitions and targets for tracking progress on adaptation, which will help to unlock the funding needed. Private finance groups pushed for action, urging better conditions to bring in more private money for adaptation. They kicked off the Dubai Adaptation Billions Challenge, aiming to raise \$5-10 billion in private investment for adaptation projects. Additionally, the Loss and Damage Fund, managed by the World Bank, received pledges of over \$700 million from countries

worldwide. This money will go to communities hit hard by climate disasters.

Additionally, the Atlantic Council’s Adrienne Arsht-Rockefeller Foundation, and Race to Resilience released a report following COP28 on Accelerating private finance action on adaptation and resilience 2023⁶⁴. The report helps demonstrate how banks, insurers and investors are mobilising in the face of climate impacts globally and highlights the benefits that can be created by overcoming barriers and opportunities for private finance to contribute to international architecture reforms.

Global policy signals from the climate negotiations will contribute to higher confidence for private finance to mobilise on A&R. National regulations and policies that incentivise financial flows towards A&R will be indispensable to provide the speed and scale necessary as well as exceptional leadership and solutions will have to be elevated to the policy level to inform private finance frameworks for adaptation and resilience.

Table 8: Business activities contributing to A&R Financing

Finance: Illustrative system level initiatives		
<p>Enhancing Resilience</p> <ul style="list-style-type: none"> • Parametric insurance • Funding community or infrastructure resilience projects 	<p>Capitalising on Opportunities</p> <ul style="list-style-type: none"> • Offering new products • Blended financing facilities 	<p>Shaping Collaborative Outcomes</p> <ul style="list-style-type: none"> • Collaborate with investment firms, and financial institutions to create tailored financial products or mechanisms that incentivise adaptation financing and help spread knowledge around them • Support the creation of platforms where businesses can connect with investors for adaptation funding Businesses • Engage in local and national policy interaction which evolve around adaptation funding • Explore opportunities to create joint financial mechanisms, such as shared adaptation funds or risk-sharing pools

63 UN Environment Programme (2019). Principles for responsible banking: <https://www.unepfi.org/banking/more-about-the-principles/>

64 Atlantic Council, Adrienne Arsht-Rockefeller Foundation Resilience Center, Race to Resilience (2023). Accelerating private finance action on adaptation and resilience: <https://reliefweb.int/report/world/accelerating-private-finance-action-adaptation-and-resilience-how-banks-insurers-and-investors-are-mobilizing-face-climate-impacts-and-new-opportunity-nascent-adaptation-and-resilience-market>

Examples of business action

The following examples demonstrate how financial institutions are creating new financial instruments helping to deliver on the SAA Finance Outcome 1 (private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing adaptation and resilience so as to enable the mobilisation of the USD 215 billion to USD 387 billion that will be needed annually across both public and private sources), highlighting how the integration of physical climate risks into financial products can help support adaptation projects.

European Investment Bank

European Investment Bank (EIB), is the European Union's lending arm and the world's largest multilateral financial institution and one of the largest providers of climate finance. The EIB is currently in the implementation phase of their first Adaptation Plan, which includes three main elements: 1) faster finance to help reduce the risks of climate change; 2) ensure all projects include robust information on the impacts of climate change; and 3) support for least-developed countries and small-island developing states. The EIB has committed to triple its adaptation finance by 2025, financing up to 75% of projects that are primarily motivated by adaptation, and up to 100% for adaptation projects in the most vulnerable parts of the world. The EIB is committed to collaborating with existing clients to identify their material risks and work together to reduce climate-related risks, especially for long-term investments. With the release of the EU Taxonomy, EIB has been able to leverage a common language to help originate adaptation projects, and bundle adaptation projects into larger envelopes to make them more investable.

EIB believes that it is important to foster collaboration around smarter, more systemic adaptation which includes closing the climate data gap. For this purpose, the European Investment Bank and the European Centre for Medium-Range Weather Forecasts, which hosts the remarkable Copernicus Climate Change Programme, have created a powerful partnership. This will make high-resolution climate data available to our clients all over the world.

Scale for Resilience

The "Scale for Resilience" Initiative, founded by YAPU Solutions, CIAT/CGIAR and GAWA Capital, aims to make 3 million vulnerable populations more resilient by 2030 by facilitating access to finance for increased resilience along the financial value chain. It unites investors, financial institutions, as well as facilitators among its members, and promotes the use of digital tools and standardised taxonomies and metrics for adaptation finance towards vulnerable populations.

COK Sodality

COK Sodality is the largest credit union in the English-speaking Caribbean based in Kingston, Jamaica. Only recently, COK introduced a digital climate risk management system provided by YAPU Solutions, which integrates an automated measurement of physical climate risks (drought, flood, storm, heat) into loan evaluations providing the Credit Union with dedicated scores for climate exposure, climate sensitivity, and adaptive capacity for each client. The measured climate risks are addressed on the basis of a resilience finance taxonomy (an investment catalogue), which allows COK to build loan products on technical criteria of a multitude of adaptation solutions, especially for the housing sector which is very relevant for the greater Kingston area. COK started with loan products for Solar bundles and energy-efficient appliances for low-income households and MSMEs, which create socio-economic resiliency, independence from climate impact related energy shortages as well as resilience against extreme heat. The Credit Union forged strong provider partnerships and carried out comprehensive information campaigns among their communities for the “Solar loans”. Backed by favourable lending conditions for individuals (using the solar systems as collateral) and women (reduced interest), COK managed to increase the green loan amount to 0,72% of its portfolio in about six months. COK aims to increase the green part of its portfolio to 5% within the coming years by financing more adaptation solutions for the housing sector (e.g. perimeter drainage (flood), rainwater harvesting systems (drought), storm shutters (storm) or green and cool roofs (heat), among others).

Kuali Fund

Gawa Capital's Kuali Fund is a 300 million euros fund which raises capital from large institutional investors through innovative blended finance structures to make smallholder farmers and small businesses more resilient to climate change. Kuali invests in financial institutions that offer or plan to offer climate adaptation finance to vulnerable communities. It also invests in companies that provide farmers and small businesses with solutions to adapt to climate change such as water management, regenerative agriculture, efficient machinery, etc. This project is led by GAWA Capital in collaboration with the Spanish development agency, COFIDES and the European Commission and aims at supporting more than 500,000 farmers and small businesses in Latin America, the Caribbean and India while reducing 22 million tons of carbon dioxide.

The Red Cross with Replexus

The Red Cross with Replexus, an insurance-linked securities risk securitisation facilitator, are currently providing parametric insurance to vulnerable communities across the world. They are developing an Asia Pacific Nature Based Risk Reduction & Insurance Facility that protects communities from natural disasters⁶⁵. The facility contributes to the restoration of valuable and vulnerable ecosystems, which in turn provides resilience co-benefits. Using the example of mangrove management in the region, the Facility generates revenue through the sale of carbon credits generated by the growing of mangroves. Meanwhile the Facility also sets up a catastrophe bond – an insurance product that transfers disaster risks to private investors – that will in part support disaster relief for affected communities and in part support future mangrove projects and pay for cat bond premiums. The Facility also plays the role of a trust fund that pools capital from these resources as well as potential donations, and invests them in capital markets to generate a source of revenue for the facility. The facility is in the pre-implementation phase and is expected to be implemented later this year.

65 ARTEMIS (2021). Red Cross targets cat bonds for nature-based, humanitarian, resilience financing:

<https://www.artemis.bm/news/red-cross-targets-cat-bonds-for-nature-based-humanitarian-resilience-financing/>

3 KEY FINDINGS & NEXT STEPS

Efforts toward A&R are rapidly gaining momentum worldwide, as highlighted by numerous case studies, frameworks, and policy developments detailed in this paper. COP28 underscored the acknowledgment by the business community and others of the pressing need for heightened action, and undoubtedly, the engagement of businesses in adaptation discussions is a positive signal.

As this paper, alongside the SAA Implementation Report 2023, have shown, action is occurring across all SAA impact systems to varying degrees, with good examples of how businesses are overcoming barriers to adaptation and are making progress towards more resilient business models⁶⁶. We observe that although system-level transformation has not occurred within any system at the speed required, there has been substantial (and incremental) progress by individual businesses and leading international organisations in bringing businesses together and producing resources that help to accelerate adaptation action. Business awareness and action across food and agriculture, and water and nature systems appear to be progressing at a faster rate compared to health, human settlement and infrastructure systems, where private sector contributions are seemingly lagging behind on assessing and responding to climate adaptation risks and opportunities. These findings can help inform business opportunities to engage with the SAA and explore adaptation transformation pathways. The following table provides a summary of the SAA impact system-level activity occurring and highlights the potential business opportunities that can stem from achieving A&R targets.

66 High Level Champions and the Marrakech Partnership (2023). Implementation Report 2023 Sharm El-Sheikh Adaptation Agenda: https://climatechampions.unfccc.int/wp-content/uploads/2023/12/Sharm-El-Sheikh-Adapatation-Agenda-2023-Implemetation-Report_3.12.2023.pdf



SAA Systems	At a glance
<p>Food and Agriculture</p>	<p>Private sector control over the global food system presents substantial opportunities for businesses to lead in the development and implementation of solutions needed to address food waste, sustainable agriculture, and nutrition. However this sector is still experiencing funding gaps. Businesses and actors within this system have already begun implementing sustainable agricultural practices, such as regenerative and agroecological approaches. Businesses are able to track progress using available quantifiable metrics and are already seeing the benefits of these practices. Sustainable agricultural practices not only improve the resilience of farms to the impacts of climate change, but also increase the resilience of nature and communities. Collaborative action is occurring between organisations and initiatives that are bringing together food producers, governments, businesses, investors, indigenous groups, and others to help accelerate the transformation of this system. Financial institutions and governments are stepping in to provide assistance in response to climate events (e.g., floods) or are helping to protect farmers from future impacts (i.e., offering parametric insurance solutions). However, climate-related funding for this system is still insufficient to meet adaptation outcome targets. Although progress is being made, the transformative change needed in this system has not yet occurred, and only some examples of scaled up A&R solutions exist. A more resilient agri-food system can offer businesses benefits such as: more resilient supply chains and markets, more efficient use of resources, the ability to offer new products to the market, and improved livelihoods of the people and communities where they operate.</p>
<p>Health</p>	<p>The health sector has shown slow progress due to financial, technological, and evidence-related barriers, however, opportunities exist for businesses to help build resilient health infrastructure and early warning systems. Health systems are highly interlinked with other systems, from nutrition and access to food, water and sanitation. This link is increasingly becoming recognised between systems and progress has been made at the national policy level with countries completing health vulnerability and adaptation assessments. Progress on A&R appears to be slow due to barriers associated with a lack of financing, limited research and evidence, and insufficient tools and technologies. There are many opportunities for businesses to help build resilience in this space. For example, the need for early warning system technology has been identified as a useful A&R tool across many systems, which businesses can leverage and adapt for health surveillance in response to extreme heat events. Access to a more resilient health system offers businesses benefits such as: a safe and healthy workforce, and the associated benefit of maintaining business continuity; and more effective emergency response plans that support business continuity at a time of potential disruption.</p>
<p>Water and Nature</p>	<p>Nature-based solutions are gaining traction as businesses manage their climate-related risks with rising reporting standards and metrics helping to advance adaptation in this sector. Businesses can play a leading role in providing adaptation solutions to both water and nature systems. Businesses can support the management and protection of key natural systems by safeguarding water security and halt land conversion through their own operations, supply chains and portfolios. The resilience of both systems seem to have gained more attention from the business community, especially as a result of the Taskforce on Nature-related Financial Disclosures (TNFD)⁶⁷ recommendations and guidance for organisations to report and act on their nature-related dependencies, impacts, risks and opportunities. Nature-based solutions have already been widely accepted by businesses as a mitigation solution, proving popular as successful adaptation solutions that improve the resilience of ecosystems and communities to the impacts of climate change. There are many resources available to businesses including guidance and case studies within the nature system, along with measurable targets that can help track progress. Less resources seem to be available within the water system based on this research. Although there is activity occurring within both systems, there is a large gap between levels of funding for both water and nature-related projects and a large amount of investment is needed in order for businesses to accelerate implementation of A&R solutions.</p>

SAA Systems	At a glance
<p>Water and Nature</p>	<p>A more resilient water and nature system offers businesses benefits such as: maintained business continuity if reliant on resources or services provided by these systems, maintained financial returns if ecosystem disruptions are minimised, and an increase in the livelihood and health of the workforce and the communities in which they operate.</p>
<p>Coastal and Ocean</p>	<p>The impacts of climate change are prompting businesses with assets located in coastal areas and/or who rely on coastal and marine ecosystem services to focus on nature-based solutions and collaboration. Businesses are already experiencing the negative impacts of rising sea levels, extreme weather events, and degradation of coastal and ocean ecosystems on their operations, particularly in exposed countries such as Small Island Developing States (SIDS) and Least Developing Countries (LDCs). This system is expected to experience significant advancements in the implementation of coastal and marine nature-based solutions that are aided by investment of financial institutions and insurers. There is a diverse range of mechanisms and frameworks that have emerged, with international sustainability regulations targeting ocean systems. Within the system, collaborative action is seen through many initiatives and partnerships that can leverage an extensive body of scientific research available to help support adaptation solutions. We found that businesses implementing A&R solutions in this system have focused on nature-based solutions, including mangrove conservation and restoration. Although the estimated costs associated with inaction are substantial, it is unclear how finance has progressed and there are still challenges associated with data gaps. A more resilient coastal and ocean system offers businesses benefits such as: avoided costs associated with damage to assets located in coastal areas, minimisation of supply chain disruptions if reliant on shipping, and maintained business continuity overall if reliant on related ecosystems.</p>
<p>Human Settlement</p>	<p>Global and local examples of collaboration within this system have helped advance adaptation efforts. However, access to finance and subject matter experts remain a challenge; businesses can aid in capacity building and data-driven plans for more resilient settlements. The private sector can play a leading role in improving the resilience of human settlements, spaces, and networks, therefore reducing the impacts of climate risks to people and communities around the world. Rooted in risk and disaster reduction, there have been many examples of collaboration between organisations and subnational governments, where many global and local alliances have been built to advance adaptation efforts. Despite progress and alignment on the critical need to address physical impacts of climate change on human settlements, there is a notable barrier to accessing finance, specifically due to the requirements needed by funders and the financial needs of subnational governments. In addition, there is a need for more settlements, particularly in the Global South, to develop data-driven A&R plans. Businesses located in these highly exposed areas can help to provide data and tools needed to build capacity and provide technical assistance, collaborating with others to help advance and accelerate A&R action. A more resilient human settlement system offers businesses benefits such as: better designed and constructed settlements that increase the livelihoods of people and communities in which they operate, and designed cities that integrate nature-based solutions which further enhances resilience.</p>

SAA Systems	At a glance
Infrastructure	<p>Technological advancements exist in both the energy and transportation sectors within this system, yet there are barriers to universal access and resilient infrastructure; businesses can provide expertise and financing for scaling solutions. Universal access to reliable power and mobility is critical for human well-being, both playing a vital role in the ability of communities to withstand climate change impacts. While there have been technological advancements in efficiency for energy infrastructure, there are still barriers to achieving the targets of universal access to affordable, reliable and sustainable energy. Resilient transportation infrastructure is further behind, due to the lack of a common taxonomy, comprehensive guidance, tools, and metrics needed to operationalise the sector. For both power and mobility, investment in infrastructure development is lacking and supportive policies are needed to meet adaptation outcome targets. There are opportunities for businesses to accelerate progress through increasing flows of financing in order to scale and expand solutions, as well as providing expertise needed to overcome barriers within these complex systems. A more resilient infrastructure system offers businesses benefits such as: access to affordable, reliable and sustainable energy; and low-cost green mobility solutions needed for the transportation of goods and for staff to easily get to and from work.</p>
Planning and Policy (cross-cutting enabler)	<p>Significant push for enabling policies and regulations to support A&R action is needed. However, gaps persist in linking national plans to private sector actions, hindering effective implementation. A notable shift in global policy marked significant recognition and push for accelerated action in adaptation and resilience at the national, regional, sub-national and organisational level. Recent initiatives aimed at supporting businesses across various systems have emerged, offering comprehensive frameworks and guidance to facilitate adaptation planning and implementation. These initiatives serve to bridge gaps between sectors and promote collaborative, innovative approaches essential for effective climate adaptation. The submission of National Adaptation Plans (NAPs) by countries around the world helps to improve the ownership and policy alignment on adaptation at the national level. However, many plans often lack a clear and direct link to the private sector, making it difficult for businesses to implement actions that help address outlined priorities in each sector. The achievement of effective planning and policy measures offers businesses the enabling environment needed to accelerate and scale adaptation implementation, allowing businesses to realise the benefits and opportunities that A&R action brings.</p>
Financing (cross-cutting enabler)	<p>A gap in private sector adaptation financing requires increased resources and innovative risk-sharing mechanisms, including insurance, to address climate risks and accelerate A&R actions. The financial contributions agreed to at COP28 can be seen as a step in the right direction. Although multilateral climate funds have committed to double adaptation finance, private sector financing is lagging and there are not enough resources dedicated to adaptation activities or blended finance arrangements. The adaptation finance gap is widening and both public and private funding must be increased to address this gap. Insurance products (i.e., parametric insurance) and loss and damage risk-sharing mechanisms in the private sector can play a significant role in addressing loss and damage, and likewise for risk-sharing systems in helping transfer the financial burdens of climate risks from businesses, communities, and individuals to capital markets (i.e., (re)insurance, catastrophe bonds or financial guarantees). Private and mutual insurance sectors and financial markets are required to provide pools of shared capital as part of these risk-sharing systems when climate events occur. By increasing and directing financing to A&R actions, businesses will be able to allocate the resources needed for implementation and acceleration of A&R actions, allowing businesses to realise the benefits and opportunities that A&R action brings.</p>

It is clear that in order to meet the adaptation outcome targets of the SAA by 2030, collective action from the private sector is critically needed, with bold leadership and strengthened partnerships and collaboration. Accelerated and scaled action throughout all systems, an increase in funding and capital, collaboration between stakeholders, access to data, tools and subject matter expertise, and the creation of an enabling environment through policy and planning, is urgently needed to accelerate delivery of the SAA. Based on observations from this research and through active participation in various fora at COP28, the High Level Champions propose the following calls for action:

1. For businesses and financial institutions to:

- embed adaptation as a key consideration in their climate and business strategies, by building the business case across three key drivers of value - enhancing resilience, capitalising on opportunities, shaping collaborative outcomes;
- collaborate with governments and other non-state actors to build capacity, share lessons and accelerate adoption of technological innovation; and
- prioritise near term actions, investments and collaborations to help deliver the SAA outcomes by 2030.

2. For NGOs, thought leaders, and initiatives working with the private sector on climate action to:

- continue to bring businesses together and coordinate efforts to help solve common challenges, share scalable solutions and resources, and collaboratively push the adaptation agenda forward;
- assist with continued capacity building through knowledge sharing and promoting the use of common language to improve understanding; and
- facilitate public-private sector dialogue and inclusive engagement to inform improvements to the enabling environment for business adaptation.

3. For governments and policy makers to provide the right enabling environment for businesses to act and invest in adaptation by:

- continue to bring businesses together and coordinate efforts to help solve common challenges, share scalable solutions and resources, and collaboratively push the adaptation agenda forward;
- assist with continued capacity building through knowledge sharing and promoting the use of common language to improve understanding; and
- facilitate public-private sector dialogue and inclusive engagement to inform improvements to the enabling environment for business adaptation.

LIST OF CONTRIBUTORS

Contributors' name and organisation

European Investment Bank
Global Centre for Adaptation
Global Resilience Partnership
GSK
Howden Group
McCormick & Company
Pacific Institute
Raincoat Insurance
Republic Financial Holdings Limited
Resilience First
Scale for Resilience Initiative
Sekem
Standard Chartered
Sustainability Coalition
The Center for Climate and Energy Solutions (C2ES)
The Lightsmith Group
UN Global Compact
World Business Council for Sustainable Development
World Economic Forum



APPENDIX 1

The following table provides a complete and updated list of the Sharm El-Sheikh Adaptation Agenda outcome targets for each impact system and enabler based on the Implementation Report 2023⁶⁸.

68 High Level Champions and the Marrakech Partnership (2023). Implementation Report 2023 Sharm El-Sheikh Adaptation Agenda:

<https://climatechampions.unfccc.int/wp-content/uploads/2024/01/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report.pdf>

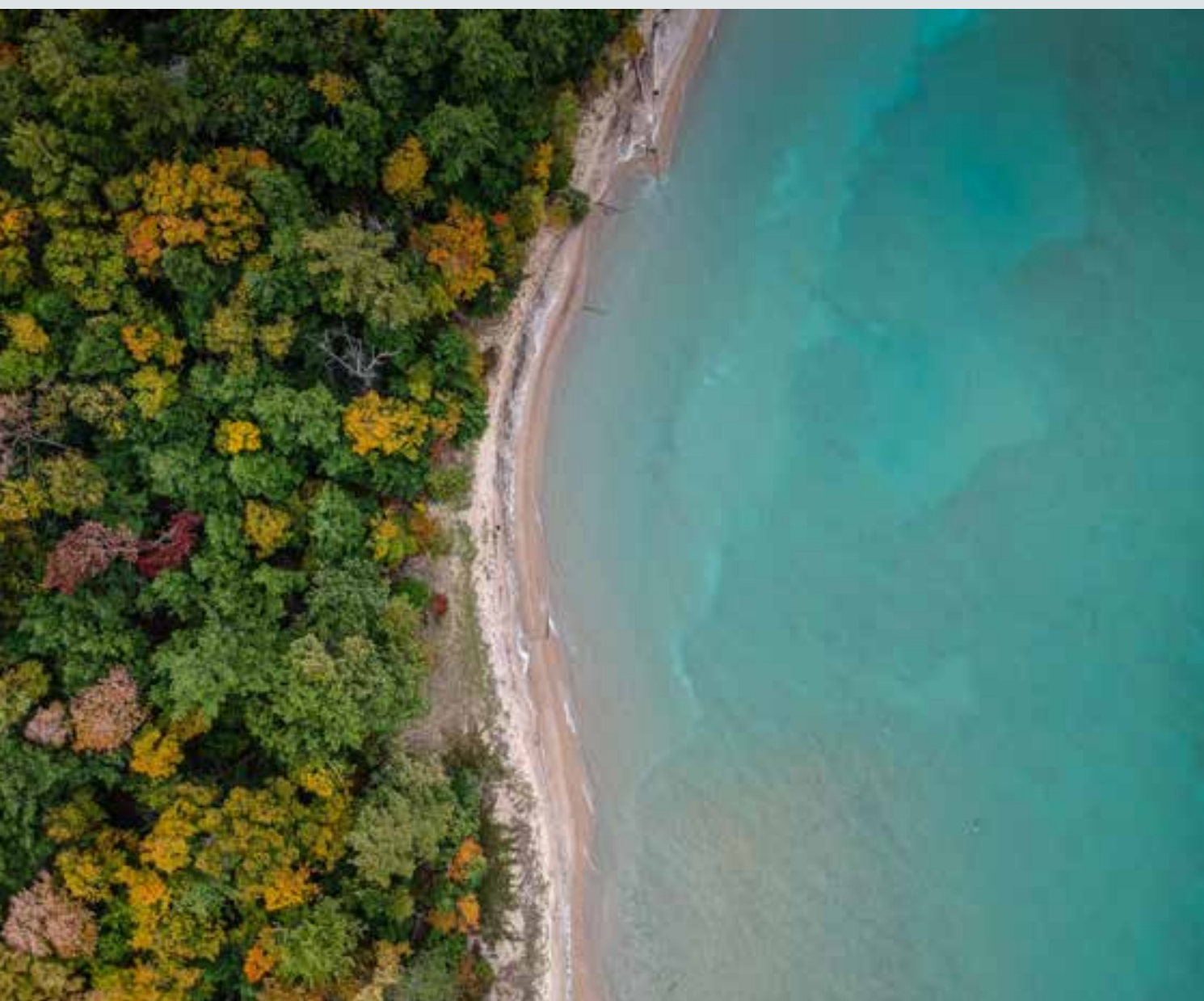
SAA Systems	2030 Adaptation Outcomes
Food and agriculture systems	<ul style="list-style-type: none"> 50% of food globally is produced through sustainable agriculture practices (incl. agro-ecological & regenerative approaches without expansion of the agricultural frontier into pristine ecosystems, to deliver for people, nature, and climate).
	<ul style="list-style-type: none"> Halve global food waste and food loss per capita (relative to 2019).
	<ul style="list-style-type: none"> Adoption of healthy, locally-appropriate, and sustainable diets in line with global goals, respecting socio-cultural sensitivity and geographic variations. This includes increasing the global consumption per capita of fruits, vegetables, seeds, nuts, and legumes by 1.5x, while also significantly increasing the share of alternative plant-based proteins in the meat and seafood markets.
	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> Scale and re-orient climate finance flows from public and private sources towards resilient, inclusive, and sustainable food systems, increasing direct access for small-scale family farmers, women, youth, and Indigenous Peoples, aligned with climate risk-informed food policies and plans.
	<ul style="list-style-type: none"> By 2030, end hunger and malnutrition in all its forms, in particular for the poorest and most vulnerable, including infants, through access to safe, nutritious and sufficient food all year round.
	<ul style="list-style-type: none"> Advance a just and inclusive food systems transition, ensuring equitable and resilient livelihoods and meaningfully engaging relevant stakeholders, and especially smallholders, women, youth and Indigenous Peoples, in relevant plans, processes and finances that affect them, with special emphasis on supporting their efforts to secure land and resource tenure rights, as well as boosting local markets for local consumption.
Coastal and ocean systems	<ul style="list-style-type: none"> Secure the future of 15 million hectares of mangroves globally by mobilising US\$4 billion to halt mangrove loss, restore hal recent losses, double protection of mangroves globally to support the resilience of 15 million people and over US\$65 billion worth of property annually.
	<ul style="list-style-type: none"> Secure the future, halt loss, protect and restore 125,000 sqm of shallow-water tropical coral reefs with investments of US\$ billion to support the resilience of more than half a billion people globally.
	<ul style="list-style-type: none"> Coastal cities are protected from ocean-based hazards by green, grey and hybrid solutions building resilience of at least 90 million people globally.
	<ul style="list-style-type: none"> Halt loss of, protect and restore seagrass ecosystems to mitigate climate change and support people and biodiversity globally.
	<ul style="list-style-type: none"> Halt loss, protect and restore, marshes, and kelp forests to support people in temperate communities.

SAA Systems	2030 Adaptation Outcomes
Water and natural systems	<ul style="list-style-type: none"> Restore 300,000 kms of rivers and 350 million hectares of wetlands by 2030 and protect healthy rivers and wetlands.
	<ul style="list-style-type: none"> By 2028, all communities living in the overlap of high climate hazard exposure and insufficient water, sanitation, and hygiene access have been targeted with climate resilient water, sanitation, and hygiene services.
	<ul style="list-style-type: none"> Countries develop coherent national policy frameworks that integrate water planning to build transformative climate outcomes in agriculture.
	<ul style="list-style-type: none"> By 2030, 1% of annual water sector spending is invested in NbS via watershed investment programs - like water funds – resulting in improved management and/or protection of rivers, lakes and wetlands, driving water security benefits and improving critical habitat for biodiversity.
	<ul style="list-style-type: none"> Water systems are smart, efficient and robust with a reduction in water loss through leakage, and wastewater systems maximise recycling and reuse alongside natural wetland filtration with zero environmental spillage.
	<ul style="list-style-type: none"> Protection of 30% of the world’s lands and inland waters, 2 billion hectares sustainable management and 350 million hectares restoration of land securing legal Indigenous and local communities with use of nature-based solutions to deliver the integration of natural ecosystems for climate, water, food, health and other biodiversity life supporting roles.
	<ul style="list-style-type: none"> 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.
Health systems	<ul style="list-style-type: none"> Health systems and facilities are resilient to climate hazards and vulnerable populations have access to safe and quality he services.
	<ul style="list-style-type: none"> Multi-sectoral heat action plans and health-sector action plans protect high risk populations (older persons, work impoverished, marginalised), for 50% of the populations exposed to extreme heat.
	<ul style="list-style-type: none"> All countries have climate-informed health surveillance and early warning systems in place for priority climate-sensi diseases, including vector-borne, water-related, airborne.
	<ul style="list-style-type: none"> Increase financing flows to build climate-resilient health systems.



SAA Systems	2030 Adaptation Outcomes
Infrastructure systems	<ul style="list-style-type: none"> 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\$60 billion per year, including 359 GW of battery storage capacity.
	<ul style="list-style-type: none"> Regional power pool integration is scaled up to mitigate the potential negative impacts on supply and demand of hydropower due to increased precipitation variability, allowing for a growing complementarity of renewables sources.
	<ul style="list-style-type: none"> Adaptation of energy generation, transmission and distribution infrastructure is mainstreamed into national energy planning and scenarios at national and sub-national levels.
	<ul style="list-style-type: none"> Affordable, reliable, sustainable, and modern energy access to electricity for 675 million unconnected people and higher quality access for 1 billion underserved people through climate resilient energy systems.
	<ul style="list-style-type: none"> 2.4 billion people with access to clean cooking through at least US\$8 billion/year in innovative finance for clean cooking ac worldwide.
	<ul style="list-style-type: none"> Support grid infrastructure resilience by reducing electricity consumption for cooling by approximately 30% (1900 TWh per year) by 2030.
	<ul style="list-style-type: none"> 2.2 billion people access low-cost, clean vehicles and mobility solutions through the expansion of affordable public and pri transport services.
	<ul style="list-style-type: none"> Transport infrastructure is resilient to climate hazards through adoption of new technology, design and materials.
Planning and policy	<ul style="list-style-type: none"> 10,000 cities and 100 regional governments have evidence-based, actionable adaptation & resilience plans.
	<ul style="list-style-type: none"> 2,000 companies have evidence-based, actionable adaptation & resilience plans.
	<ul style="list-style-type: none"> Universal access to data and analytics required to integrate climate risks and impacts into decision making and action across all levels.
	<ul style="list-style-type: none"> 100% operationalization of NDCs with Adaptation components, National Adaptation Plans, and Locally-Led Principles, enabling adaptation in a country-driven localised and consultative manner.
Finance	<ul style="list-style-type: none"> Private sector integrates physical climate risks into investment decisions and continues to innovate mechanisms for financing adaptation and resilience so as to enable the mobilisation of the US\$215 billion to US\$387 billion that will be needed annually across both public and private sources.
	<ul style="list-style-type: none"> Public finance actors increase provision of climate finance and allocate 50% of climate funds to adaptation and resilience.
	<ul style="list-style-type: none"> 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.

SAA Systems	2030 Adaptation Outcomes
Finance	<ul style="list-style-type: none"> • Multilateral Development Banks and Development Partners support scaling-up private finance by providing dedicated resources to support credit enhancement and de-risking of adaptation investments.
Human settlement	<ul style="list-style-type: none"> • 1 billion people have better design, construction and access to finance to live in decent, safe homes.
	<ul style="list-style-type: none"> • Multi-hazard early warning systems have universal coverage.





APPENDIX 2

The following section provides more information on the frameworks, tools, and other resources that businesses may find useful when building out the framework of their business case for adaptation. In addition, a brief description of conveners working to shape collaborative outcomes within each impact system have been listed including government organisations, non-governmental organisations, coalitions and initiatives.



SAA IMPACT SYSTEMS

Resources for capacity building and enhancing resilience across SAA Impact Systems

Frameworks/Benchmarks/Guidance

- The World Business Council for Sustainable Development (WBCSD) in collaboration with Bain and Company, and Jupiter are planning on launching their How to adapt: a guide for C-suites in early 2024 which aims to provide key guiding principles for executives to drive adaptation and resilience, as well as presenting a multi-year adaptation journey.
- The Center for Climate and Energy Solutions (C2ES), Resilience First and Resilience Rising are launching a multi-year initiative, A Global Business Pathway and Framework for Building Climate Resilience, where they are aiming to engage with leading global companies to establish a robust business framework and pathway for private sector adaptation and resilience action. The aim is to evolve the measurement and reporting standards that will enable companies to track their progress and ensure accountability.
- C2ES, Resilience First, and Resilience Rising will be launching Principles for Corporate Climate Resilience Leadership in the beginning of 2024, highlighting key principles for corporate leadership.
- European Commission, Guidelines on Member States' adaptation strategies and plans (2024): Guidelines aim to support EU member states in revising their adaptation strategies and their adaptation plans, highlighting key essential features for delivering quality adaptation policy and results, providing an example template outlining a structure for the strategy, and enhancing adaptation policy with new areas.

Resources for capacity building and enhancing resilience across SAA Impact Systems

Metrics/KPIs/Targets

- Race to Resilience (RtR) are launching [Measuring Resilience: A Guide to Tracking Progress](#) launching at the end of 2023, the guide showcases how to measure increases in the resilience of vulnerable people to climate change across organisations, infrastructure owners, research institutes, and governments.
- RtR published their [Working Paper #1 R2R's Metrics Framework](#) helps to provide a valuable starting point for translating resilience actions into quantitative and qualitative impacts and outcomes. This working paper was followed by the launch of the SAA, which identified 30 adaptation targets to be delivered by 2030 and helped guide action on adaptation.
- WBCSD developed a report [Business Climate Resilience - Thriving Through the Transformation](#), which offers a three steps approach on how to increase business resilience and offers some climate-adaptation related metrics.

Tools

- [The Global Resilience Index Initiative](#) (GRII) provides open and accessible information and reference data on climate and natural hazard risks, exposures, and vulnerabilities based on publicly available global datasets, drawing upon the risk modelling community and partnerships between governments and the insurance, science, and engineering sectors. GRII allows users to assess macro-level and systemic physical climate risks and drill down to the asset level. GRII aims to support the growth of resilient economies and societies, especially in emerging and developing countries by providing accessible reference information based upon insurance risk expertise, frameworks and metrics. This information can help policy makers, financial markets, and exposed communities better understand, assess and disclose their climate risks.
- [Climada Technology](#) is an ETH-affiliated start-up that created a climate risk assessment tool and an adaptation framework which provides decision-makers with practical recommendations to address climate-related damage. Their model is based on open-source data, which allows for the highest transparency around input data, calculation methodology and modelling assumption. They offer solutions for a wide range of actors, such as corporates, insurances, banking and governments focusing on identifying climate risks and hazards and developing adequate adaptation measures.
- UN Development Programme's [Adaptation Innovation Marketplace](#) (AIM): A strategic platform that promotes scaled-up adaptation at the local level, focusing on civil society, non-government organisations, and women and youth innovators.

Other resources

- [The World Resources Institute](#) (WRI) is supporting university curriculum development, teaching and research in V20 and African countries in climate risk management. This university program will create a teaching network with academic partners in both developed and developing countries and promote centres of excellence in developing countries that train not only students, but also government officials and private companies in building climate resilience.

Resources for capacity building and enhancing resilience across SAA Impact Systems

Conveners

- **World Business Council on Sustainable Development (WBCSD)**: A global community of over 225 of the world's leading businesses driving systems transformation for a better world in which 9+ billion people can live well, within planetary boundaries, by mid-century. Together, we transform the systems we work in to limit the impact of the climate crisis, restore nature and tackle inequality.
- **Climate Champions**: Provides support to the UN Climate Change High-Level Champions to deliver on the mandate from Parties: to drive climate action and enhance ambition by non-state actors. Working with the Marrakech Partnership and other partners, we mobilise businesses, investors, cities, regions and civil society and act as a bridge between non-state actors and national governments to reach the goals of the Paris Agreement.
- **Race to Resilience**: UN-backed global campaign to catalyse a step-change in global ambition for climate resilience, putting people and nature first in pursuit of a resilient world where we don't just survive climate shocks and stresses, but thrive in spite of them.
- **World Economic Forum**: An independent international organisation for public-private cooperation committed to improving the state of the world by engaging business, political, academic and other leaders of society to shape global, regional and industry agendas.
- **Conference of the Parties (COP)**: The supreme decision-making body of the United Nations Framework Convention on Climate Change. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.
- **Resilience First**: The world's largest business network setting the standard for resilience leadership in the private sector for a safe, secure, and sustainable future. It serves as a platform for businesses to adapt, respond, and innovate in the face of converging crises and a rapidly changing world by facilitating collaboration and knowledge-sharing, and co-creating solutions.
- **Center for Climate and Energy Solutions (C2ES)**: A non-profit, nonpartisan climate policy organisation that works to secure a safe and stable climate by accelerating the global transition to a net-zero greenhouse gas emissions and a thriving, just, and resilient economy.
- **United Nation Global Compact (UNGC)**: As a special initiative of the United Nations Secretary-General, the UN Global Compact is a call to companies worldwide to align their operations and strategies with Ten Principles in the areas of human rights, labour, environment and anti-corruption. The ambition is to accelerate and scale the global collective impact of business by upholding the Ten Principles and delivering the Sustainable Development Goals through accountable companies and ecosystems that enable change. [Click here to learn more about their efforts on adaptation.](#)
- **Global Resilience Partnership**: Non-profit organisation that advances resilience through identifying and scaling on the ground innovation, generating and sharing knowledge, and shaping policy.
- **Global Centre for Adaptation**: An international organisation working as a solutions broker to accelerate action and support for adaptation solutions.



FOOD & AGRICULTURE SYSTEMS

Resources for capacity building and enhancing resilience in the Food and Agriculture Systems

🎯 Metrics/KPIs/Targets

- [FAO GSOC MRV Protocol](#): Conceptual framework and standard methodologies for monitoring, measuring, tracking, reporting, and validating soil organic carbon in agricultural landscapes.
- [Coolfarm's Cool Farm Tool](#): Provides metrics and calculation approaches (e.g. GHGs, biodiversity, water utilisation), which can be used for adaptation purposes.

Resources for capacity building and enhancing resilience in the Food and Agriculture Systems

Frameworks/Benchmarks/Guidance

- WBCSD's [Food and Agriculture roadmap](#): An implementation plan of the [CEO Guide to Food System Transformation](#), setting transformational targets, key action areas and solutions to transform food systems. The Roadmap helps companies prioritise and develop business-led solutions while advancing supportive policy, regulatory and financial frameworks.
- OP2B's [Regenerative Agriculture Framework](#): A collaborative, science-driven approach with farming groups, scientists and civil society. Aims to assist in the transition and scale-up of regenerative agricultural practices, incl. Setting actions, targets, and reporting.
- Agroecology Coalition's [Measuring agroecology: Introducing a methodological framework and a community of practice approach](#).

Tools

- World Resources Institute's (WRI) [Aqueduct Food](#): Open-source tool providing peer-reviewed data mapping current and future water risks to agriculture and food security.
- [Cool Farm Tool](#): The tool offers quantified, credible, and standardised metrics based on empirical research and a broad range of published data sets and IPCC methodologies. The tool equips farmers and businesses with metrics to communicate about sustainability, to show benefits of regenerative practices and carbon sequestration, and to report against reduction targets.
- Farm Carbon Toolkit's [Farm Carbon Calculator](#): A free tool for farmers to use to calculate a farm's carbon footprint.

Other Resources

- Global Resilience Partnership (GRP) and Shockwave Foundation's [Resilient Agriculture Innovations for Nature \(RAIN\) Challenge](#): The challenge sets out to identify new innovative agricultural initiatives working to advance resilience and adaptation in East Africa, and highlights ten candidates.
- WBCSD's [Scaling Partnerships for Investment in Sustainable Food Systems, Forests, and Nature](#): Insights from a series of case studies, in collaboration with the Good Food Finance Network and the Forest Investor Club
- Just Rural Transition and WBCSD's [Strengthening suppliers to shape an equitable food system: A case study synthesis](#): Six case studies were developed that examine the business case for supplier engagement; explore elements of good procurement practice; and identify lessons learned to promote peer learning. The aim is to help build an understanding of how large agri-food companies engage and strengthen small- and medium-sized suppliers in their value chains to better enable their market access and strengthen business relationships.
- Just Rural Transition's [Principles for Just Food System Transitions](#): The report lays out 10 guiding principles to help guide governments, businesses and investors, farms, and other organisations in achieving just food system transitions, providing a framework to help define the types of change that should be supported.
- Sustainable Markets Initiative (SMI) Agribusiness Task Force, [Scaling Regenerative Farming: an action plan \(2022\)](#): The action plan provides an approach which aims to cut carbon emissions whilst seeking to promote and improve soil health and biodiversity. The action plan details five key areas that require urgent action in order to make regenerative farming more appealing to farmers, including common metrics for environmental outcomes, carbon reduction and removal, transition cost sharing, enabling government policies, and new sourcing models to spread the cost of transition

Resources for capacity building and enhancing resilience in the Food and Agriculture Systems

Conveners

- **OP2B:** An international, cross-sectoral and action-oriented business coalition on biodiversity with a specific focus on regenerative agriculture, supported by WBCSD.
- **WBCSD's Scaling Positive Agriculture Project:** Supports leading businesses to drive solutions and transform global food systems by maximising the potential of agriculture as a solution for climate, nature and farmers.
- **Just Rural Transition:** Brings together food producers, governments, businesses, investors, civil society, rural and indigenous peoples to champion equitable solutions to food systems challenges.
- **Agroecology Coalition:** The coalition members comprise around 50 countries and regional commissions and more than 110 organisations, including farmers organisations, research institutions, indigenous peoples' organisations, UN agencies, philanthropic foundations and civil society organisations. The coalition's objective is to accelerate the transformation of food systems through agroecology, guided by the 13 principles of agroecology.
- **Regen10:** The initiative aims to understand how regenerative and agroecological approaches to food production could offer a solution to the growing challenges facing the world's food systems by building an evidence base of what it will take to accelerate and scale regenerative food systems.
- **Champions 12.3:** Is a coalition of executives from governments, businesses, international organisations, research institutions, farmer groups, and civil society dedicated to inspiring ambition, mobilising action, and accelerating progress toward achieving Sustainable Development Goal Target 12.3 by 2030.
- **SMI, Agribusiness Task Force:** The group aims to accelerate the adoption of regenerative agriculture practices within industry while ensuring positive partnerships with farmers, and is made of the world's leading food and farming businesses.





HEALTH SYSTEMS

Resources for capacity building and enhancing resilience in the Health Systems

Frameworks/Benchmarks/Guidance

- WHO's [Guidance for climate resilient and environmentally sustainable health care facilities](#): Aims to enhance the capacity of health care facilities to protect and improve the health of their target communities in an unstable and changing climate. The document aims to guide health care professionals to understand and effectively prepare for health risks posed by climate change, monitor, anticipate, manage, and adapt to these health risks, and provides tools to help assess health care facility resilience to climate change and their environmental sustainability.
- WHO's [Operational framework for building climate resilient health systems](#): Provides guidance on how the health sector and its operational basis in health systems can systematically and effectively address the challenges increasingly presented by climate variability and change.
- WHO's [Streamlining financial resources for health and climate change](#): Provides technical guidance and support to access international funds that aid in the implementation of health-relevant adaptation and mitigation actions.

Resources for capacity building and enhancing resilience in the Health Systems

Tools

- The [UN's Early Warnings for All Executive Action Plan](#): Sets the goal of guaranteeing that by the end of 2027 everyone on Earth is protected from climate events or hazardous weather through early warning systems.
- World Health Organisation's (WHO) [Early Warning, Alert and Response System \(EWARS\)](#): A system that rapidly detects acute public health events and connects this to an immediate public health response.

Other Resources

- Global Heat Health Information Network's [Case Studies, Action Plans and Projects](#): Provides a spatial map tracking global case studies, action plans, and projects.

Conveners



- [World Health Organisation \(WHO\)](#): Composed of the world's leading public health experts, doctors, scientists, and managers who coordinate the world's response to health emergencies, promoting well-being, preventing disease and expanding access to health care.
- [Global Heat Health Information Network](#): An independent, voluntary, and member-driven forum of scientists, practitioners, and policy makers focused on building capacity to better manage and adapt to health risks associated with extreme heat.
- [Alliance for Transformative Action on Climate and Health \(ATACH\)](#): An alliance of WHO Member States and other stakeholders with the objective to build climate resilient and sustainable health systems, and promote the integration of climate change and health nexus into national, regional, and global plans.









WATER & NATURE SYSTEMS




Resources for capacity building and enhancing resilience in the Water and Nature Systems

Water	Nature
<p> Frameworks/Benchmarks/Guidance</p> <ul style="list-style-type: none"> UN GC's Benchmark <u>Net-Positive Water Impact in Water-stressed Basins</u>: This SDG Ambition Benchmark provides businesses with the strategic insights and technical know-how to assess their freshwater impact across its availability, quality and accessibility. 	<p> Frameworks/Benchmarks/Guidance</p> <ul style="list-style-type: none"> <u>The Taskforce on Nature-related Financial Disclosure</u> (TNFD): Has developed a set of disclosure recommendations and guidance for organisations to report and act on evolving nature-related dependencies, impacts, risks and opportunities.



Resources for capacity building and enhancing resilience in the Water and Nature Systems

Water	Nature
<p> Frameworks/Benchmarks/Guidance</p> <ul style="list-style-type: none"> WBCSD’s CEO Guide to Water: Lays out the business case for water outlining a seven-step framework for business leaders to follow to move towards responsible stewardship of water. UAE COP28 Presidency, Joint Statement on Climate, Nature and People (2023): The UAE COP28 presidency and China COP15 presidency released a joint statement to recognise the interlinkages and interdependencies between action on climate and biodiversity. <p> Metrics/KPIs/Targets</p> <ul style="list-style-type: none"> UN Global Compact’s (UN GC) Forward Faster - Moving Water Resilience Forward Faster Action Guide: Provides businesses with target-specific details on key definitions, actions and KPIs, interim targets, and additional resources that companies can utilise to help meet targets. WBCSD’s Business Guidance on the Assessment of Wastewater-related Impacts: Provides an approach for measuring the impacts of wastewater on climate, biodiversity and water security. It provides a standardised pathway for companies to measure, value and manage the impacts from wastewater generated by their sites or the sites of their suppliers. UN GC’s 100 Priority Basins: Provides a prioritised list of the highest risk water basins in the world in terms of water quality, quantity and accessibility considering biodiversity and future climate risks. To help companies and other actors guide their water resilience goals. UN GC’s Net Positive Water Impact (NPWI): Enterprise ambition that is quantifiable and aligns with established methodologies, targeting water quantity, quality and access. 	<p> Frameworks/Benchmarks/Guidance</p> <ul style="list-style-type: none"> Natural Capital Coalition’s Natural Capital Protocol: A decision making framework that enables organisations to identify, measure and value their direct and indirect impacts and dependencies on natural capital. WBCSD’s Roadmaps to Nature Positive - Foundations for all businesses: Provides guidance for all businesses to accelerate action and accountability in support of nature-positive outcomes as well as in-depth analysis for four high impact systems on nature (agri-food, forest products, built environment and energy). WBCSD’s What does nature-positive mean for business? Practitioner Guide: Identifies six building blocks to help businesses understand the implications of the Global Goal for Nature, including the development of specific business value chain roadmaps for nature-positive actions. Business for Nature’s Sector Actions Towards a Nature-Positive Future: Provides sector-specific high-level steps for nature-positive. Nature4Climate’s Nature’s Pathways: Provides a hierarchy that can help decision makers think through the most cost-effective, climate-effective, and biodiversity-effective options. The Nature Strategy Handbook: Provides a practical guide to support businesses when developing a nature strategy, highlighting the key components needed of a credible strategy, requirements of various frameworks, guidance and regulations. <p> Metrics/KPIs/Targets</p> <ul style="list-style-type: none"> International Union for Conservation of Nature’s (IUCN) Guidelines for planning and monitoring corporate biodiversity performance: Guidelines offer an approach for developing a corporate-level biodiversity strategic plans, including measurable goals, objectives, and a set of core linked indicators, that will allow companies to measure their biodiversity performance across their operations.

Resources for capacity building and enhancing resilience in the Water and Nature Systems

Water	Nature
<p style="text-align: center;"> Tools</p> <ul style="list-style-type: none"> • The World Resources Institute’s (WRI) Aqueduct: An open-source, peer-reviewed tool that has mapped water risk data such as floods, droughts and water stress globally. The latest iteration of the tool, Aqueduct 4.0, provides more granular higher resolution data, new indicators, improved tool function, and access to underlying hydrological models. Aqueduct contains multiple tools including the Aqueduct Water Risk tool which maps and analyses current and future water risks across the world. • India Water Tool: Publicly available application providing access to water data collected from Indian government agencies and water stress indicators from WRI and Columbia Water Centre. Aiming to help users better understand their water-related risks and prioritise actions toward sustainable water management. • Wastewater Impact Assessment Tool (WIAT): Provides a site-level assessment of the impacts of wastewater per site from industrial activities through key indicators including water quality, availability, and GHG emissions from wastewater treatment. 	<p style="text-align: center;"> Metrics/KPIs/Targets</p> <ul style="list-style-type: none"> • Global Goal for Nature: Defines what is needed to halt and reverse the current loss of nature that is supported by many organisations, working alongside the UN Convention on Biological Diversity’s Kunming-Montreal Global Biodiversity Framework. • Science-based Targets for Nature - Initial Guidance for Business: The guidance defines a business case for setting SBTs for nature, and a step-by-step process for setting SBTs for nature. • Science-based Targets for Land (SBTN) Technical Guidance: The guidance is structured to present the Land targets, the conditions and data requirements around setting land targets. • A Nature-Positive World: The Global Goal for Nature: Is a system-level goal for all stakeholders, with business playing a role as part of the broader system. • Global Commons Alliance’s (GCA) Earth Commission: Consists of a global team of scientists to quantify earth system boundaries and environmental thresholds. • Nature4climate’s Commitment Tracker: Nature based Solutions commitment tracker which evaluates the progress on joint action commitments that have been made on nature-based solutions. • Business for Nature’s Sector Actions Towards a Nature-Positive Future: Provides sector-specific guidance for 12 sectors that build on the high-level actions businesses should take to halt and reverse nature loss and contribute to a nature-positive economy. <p style="text-align: center;"> Other Resources</p> <ul style="list-style-type: none"> • Nature4Climate’s Case studies • WBCSD’s Nature Climate Solutions in practice • We Mean Business and Business for Nature’s Business Action on Climate and Nature • Clyde & Co., Global Resilience Partnership (2022) Biodiversity liability and value chain risk

Resources for capacity building and enhancing resilience in the Water and Nature Systems

Water	Nature
<p data-bbox="300 412 497 450"> Conveners</p> <ul data-bbox="124 472 724 1400" style="list-style-type: none"> <li data-bbox="124 472 724 757">• UN GC / Pacific Institute's <u>The Forward Faster Water Resilience Target Initiative</u>: Seeks to mobilise business leaders to address global water challenges through corporate water stewardship. It aims to increase accountability and transparency by calling for companies to publicly declare their commitments and highlight actions they will undertake to meet targets. <li data-bbox="124 779 724 1037">• <u>Water Resilience Coalition</u> (initiative of the CEO Water Mandate between UN GC and the Pacific Institute): An industry-driven, CEO-led initiative to reduce global water stress by 2050. WRC members work to preserve the world's freshwater resources through collective action in water-stressed basins and through ambitious, quantifiable goals. <li data-bbox="124 1059 724 1249">• Global Center on Adaptations' <u>Water Adaptation Community</u>: Connecting and supporting a wide range of practitioners to accelerate water and climate adaptation, fostering global best-practice and knowledge sharing. <li data-bbox="124 1272 724 1400">• <u>50L Home Coalition</u> (jointly coordinated by the 2030 Water Resources Group, WEF, and WBCSD): A global platform addressing water security and climate change. 	<p data-bbox="986 412 1184 450"> Conveners</p> <ul data-bbox="762 472 1476 1384" style="list-style-type: none"> <li data-bbox="762 472 1476 566">• <u>Global Commons Alliance (GCA)</u>: An international convener for nature-positive discussions of the COP26 Champions team and others. <li data-bbox="762 589 1476 719">• <u>Capitals Coalition</u>: Helps business, financial institutions and governments include the value of all types of capital in their decision making to deliver a more sustainable and just world. <li data-bbox="762 741 1476 835">• <u>Business for Nature</u>: A global coalition that brings together business and conservation organisations to advocate for the Global Goal for Nature. <li data-bbox="762 857 1476 1048">• <u>The World Business Council for Sustainable Development (WBCSD)</u>: Brings together organisations to form a global community, with over 200 leading business members, helping members take action to limit the climate crisis, restore nature and tackle inequality (<u>Nature Positive, Nature-based Solutions</u>) <li data-bbox="762 1070 1476 1227">• <u>Nature4Climate</u>: A coalition of 20 organisations dedicated to raise the profile of nature as a solution for a more sustainable, equitable and nature-positive future by partnering with governments, civil society, businesses and investors. <li data-bbox="762 1249 1476 1384">• <u>The Natural Climate Solutions Alliance (NCSA)</u>: Established to represent businesses, NGOs and solution providers on the need to mobilise demand for high-quality NCS.





COASTAL & OCEAN SYSTEMS

Resources for capacity building and enhancing resilience in the Coastal and Ocean Systems

Frameworks/Benchmarks/Guidance

- [Taskforce on Nature Related Financial Disclosures \(TNFD\)](#): Defines clear recommendations and reporting guidelines on all nature topics, with one pillar being ocean topics, such as marine shelf, open ocean waters, deep sea floors.
- UNFCCC and other organisation's [Innovative Approaches for Strengthening Coastal and Ocean Adaptation](#): Policy brief providing an overview on the value of integrated adaptation solutions for coastal areas and oceans.
- UN Environment Program with the Mediterranean Action Plan a [Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas](#) a regional strategic approach to increase the resilience of the Mediterranean marine and coastal natural and socioeconomic systems to the impacts of climate change.

Resources for capacity building and enhancing resilience in the Coastal and Ocean Systems

Metrics/KPIs/Targets

- **Corporate Sustainability Reporting Directive (CSRD):** Sets out a set of reporting directives in the area of marine resource protection to prevent ocean acidification, ocean pollution and other ocean-related issues.
- **Mangrove Protection goal (2023):** At COP28 the global target was set to restore and protect 15 million hectares of mangroves and halt mangrove destruction by 2030.

Tools

- International Union for Conservation of Nature (IUCN)'s **The ocean and climate change: tools and guidelines for actions:** Outlines a set of recommendations for marine-related adaptation actions.
- **Coastal zone simulation model (Cosmo):** A decision-support model that allows coastal zone managers to evaluate potential management strategies under different scenarios, including long-term climate change. COSMO demonstrates the main steps in the preparation, analysis and evaluation of Coastal Zone Management (CZM) plans.
- **Coastclim of simulator of climate change risks and adaptation (SimClim):** A simulator for climate change risks and adaptation initiatives and enables examination of future climate.

Other Resources:

- The UN Environmental Protection Agency's **Coastal adaptation Toolkit:** Provides information on impacts, adaptation options for coasts, planning frameworks and much more.
- The Ocean Stewardship Coalition's **Blueprint for a Climate-Smart Ocean to Meet 1.5°C:** The report explains six steps to reach climate-smart and resilient oceans.
- Ocean & Climate, Race to Resilience and other organisation's **Investment protocol: Unlocking financial flows for coastal cities adaptation to climate change and resilience building:** Report sets out funding approaches, stakeholder engagement processes and solution framework specifically designed for coastal cities.

Conveners

- **Ocean Stewardship Coalition (OSC):** A coalition of the UN global compact for Ocean Stewardship consisting of leading governments, companies, NGOs, academic institutions and UN partners to drive action and determine how the ocean, and ocean industries, can deliver on the Paris Agreement and all 17 of the Global Goals.
- **Global Seaweed Coalition (GSC):** A global partnership established by Lloyd's Register Foundation in partnership with the UN Global Compact (UNGC) and the Centre National de la Recherche Scientifique (CNRS) to oversee the safety and sustainability of the seaweed industry as it scales up.
- **High Level Panel for a Sustainable Ocean Economy:** A global initiative composed of world leaders that are working to build momentum towards a sustainable ocean economy, the Panel aims to facilitate a better, more resilient future for people and the planet.
- **Promoting Adaptation to Changing Coasts (PACCo):** A cross-border adaptation project which delivered large-scale adaptation measures across the UK and France.
- **Global Fund for Coral Reefs (GFCR):** A blended finance instrument to mobilise action and resources to protect and restore coral reef ecosystems.



HUMAN SETTLEMENT SYSTEMS

Resources for capacity building and enhancing resilience in the Human Settlement Systems

Frameworks/Benchmarks/Guidance

- C2ES's [An Emerging Blueprint for Companies to Advance Local Climate Resilience](#): Outlines the strategies to advance local climate resilience, identifying seven strategies companies are already practising to help communities assess climate risks, build local capacity, and implement projects that increase resilience.
- UNDP's [Urban Risk Management and Resilience Strategy](#): Provides a data-driven rationale and a structured approach to contribute to SDG-11 (Sustainable Cities and Communities) and advances the implementation of the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, and the New Urban Agenda.
- [Progress Report on Early Warning Systems \(2023\)](#): At COP28, as part of the Early Warning for All initiative, introduced by the UN Secretary-General at COP27, the UN Office for Disaster Risk Reduction and the World Meteorological Organization released a progress report on the global implementation of early warning systems.
- [CDP, Deepening Evidence-based Climate Resilience Planning in Asian Cities](#) - Climate Change Adaptation and Resilience Planning Programme Summary and Guide for Cities (2023): Provides a summary of key learnings from CDP's capacity-building programme for local authorities in South and Southeast Asia to improve their understanding on evidence-based climate change adaptation planning.

Resources for capacity building and enhancing resilience in the Human Settlement Systems

Metrics/KPIs/Targets

- Sendai [Framework Framework for Disaster Risk Reduction 2015-2030](#): Sets out targets and priorities to reduce and manage disaster risks, aiming to significantly decrease the impact of climate change.
- [UN, Early Warnings for All Executive Action Plan \(2022\)](#): Sets the goal of guaranteeing that, by the end of 2027, everyone on Earth is protected from climate events or hazardous weather through early warning systems.

Tools

- [CRiSTAL](#): A project planning and management instrument that helps individuals to incorporate risk reduction and climate change adaptation into their community-level initiatives.
- [Resilience Assessment Framework \(RAF\)](#): A scientific tool designed by resilience researchers to support Cities' Action Planning in relation to adaptation and resilience building.
- Partnership for Resilience and Preparedness (PREP), [PREPdata](#): A map-based, open data online platform that allows users to access and visualise spatial data reflecting past and future climate, as well as the physical and socioeconomic landscape for climate A&R planning.
- Futian (China), [Intelligent City Governance for Quick Public Opinion Handling](#): A central business district (CBD) in Shenzhen, China is using AI and digital twins technology to create a platform, where citizens can submit questions, complaints, opinions, and suggestions or ask for help via multiple channels. The platform then enables the government to quickly respond to the general public, handle requests efficiently and provide timely feedback. This can help in disaster situations or climate risk events, such as flooding, heat waves etc.

Other Resources

- The UNDRR Risk Reduction Hub side event's [Accelerating implementation of disaster risk reduction and resilience infrastructure](#): A report on accelerating implementation of disaster risk reduction and resilience infrastructure.

Conveners

- Global Center on Adaptation's [Water Adaptation Community](#): Connecting and supporting a wide range of practitioners to accelerate water and climate adaptation, fostering global best-practice and knowledge sharing.
- [Partnership for Resilience and Preparedness \(PREP\)](#): Guided by a fundamental belief that climate and socioeconomic data should be readily available and applicable to all, PREP is a consortium of prominent research institutions, government bodies, adaptation experts, and technology firms that provide climate and socioeconomic data to global communities, enterprises to enhance their adaptive capacity.
- [C40](#): A global network of mayors of the world's leading cities that are united in action to confront the climate crisis, with a focus on climate adaptation and resilience.
- [Early Warning For All Initiative](#): Initiative to ensure that everyone on Earth is protected from hazardous weather or climate impacts through early warning systems by 2027.
- [Resilient Cities Network](#): Brings together member cities, chief resilience officers, and researchers to build safer, more equitable, and sustainable futures for residents through empowerment, implementation, and mobilisation.
- International Council for Local Environment Initiatives (ICLEI) [Transformative Actions Program](#): A global initiative to help local and regional governments transform their net-zero and resilient development infrastructure concepts into mature, robust and bankable projects ready for financing and implementation.



INFRASTRUCTURE SYSTEMS

Resources for capacity building and enhancing resilience in the Infrastructure Systems

Frameworks/Benchmarks/Guidance

- **ISO 14090:2019 on Adaptation:** A new standard which focuses on principles, requirements and guidelines for adaptation to climate change for businesses and organisations.
- **Infrastructure for Climate Action:** A collaborative effort by UNOPS, UNEP, and the University of Oxford, issued a report which emphasised the importance of a comprehensive and integrated approach to infrastructure adaptation to align with global agendas, including the Sustainable Development Goals and the Paris Agreement, and offers sector-specific actions and case studies as guidance.

Resources for capacity building and enhancing resilience in the Infrastructure Systems

Metrics/KPIs/Targets

- GCoM's [Data4Cities](#): An evidence-based foundational initiative to measure and manage cities and local governments' climate ambition and progress.
- European Commission, [Global Renewables and Energy Efficiency Pledge \(2023\)](#): At COP28 the Global Renewables and Energy Efficiency Pledge was launched by EU president Ursula von der Leyen together with the COP28 presidency setting a global goal to triple installed capacity to at least 11 terawatts (TW) by 2030.

Tools

- Global Covenant of Mayors' (GCoM) [Data4Cities](#): An evidence-based foundational initiative to measure and manage cities and local governments' climate ambition and progress.
- GCOM and Google's [Environmental Insights Explorer \(EIE\)](#): A free web-based data and insights tool that uses exclusive data sources and modelling capabilities to help cities and regions measure emissions sources, run analyses, and identify strategies to reduce emissions.
- Munich Re's [infrastructure risk profiler](#): A tool that helps to improve the performance of an infrastructure investment portfolio. The result is a report that provides investors with information needed to arrive at objective, reliable and well-founded business decisions.

Other Resources

- International Coalition for Sustainable Infrastructure's (ICSI) [Climate Resilient Infrastructure Report - A Focus on Nature](#): The report will be launched at COP28, which will include a collection of projects and solutions, knowledge resources and collaborative initiatives for implementation of climate resilient infrastructure that integrates nature.
- Global Center on Adaptation's [Infrastructure for climate action](#): A report which focuses on the key role of infrastructure resilience within adaptation.
- Coalition for Disaster Resilient Infrastructure's (CDRI) [Flagship Report on Disaster and Climate Resilient Infrastructure](#): The report will focus global attention on the critical and multi-faceted challenges posed to disaster and climate resilient infrastructure with a thematic focus on nature-based solutions. The report is scheduled to be launched at the G20 Summit in 2023 during India's Presidency.
- ICSI's [Accelerating Implementation of Disaster Risk Reduction and Resilience in Infrastructure](#): The report outlines the key opportunities and solutions to challenges to building resilient infrastructure, including global case studies.
- ICSI Position Paper [Upscaling infrastructure resilience through innovative financial approaches, governance, and practice](#): The position paper will document global examples of current best practice and innovative approaches to financing climate and disaster resilient, and articulate the opportunities to build out (through cross-sector learning) and scale up innovative climate finance approaches and good governance practices. This paper has yet to be released.

Resources for capacity building and enhancing resilience in the Infrastructure Systems

Conveners

- **International Coalition for Sustainable Infrastructure (ICSI)**: The ICSI brings together a global coalition of change agents from across the engineering, investment, city, and philanthropic communities committed to bold action to solve the systemic problems that exist at the intersection of climate change, ecosystem degradation, ageing infrastructure, and underinvestment.
- **Subnational Climate Fund (SCF)**: The SCF is a worldwide blended finance initiative with the goal of supporting and expanding climate-resilient, low-carbon infrastructure and nature-based solutions of moderate size in developing nations
- **Private Infrastructure Development Group (PIDG)**: PIDG is an innovative infrastructure developer and investor in low-income and emerging markets through technical assistance, development expertise, and credit solutions. With over 50% of financing directed to those in fragile and conflict affected states and in the poorest LDCs, PIDG is a leading example of adaptation finance and the acceleration of sustainable development and the SAA goals.
- **Catalytic Capital Fund (CCF)**: The CCF developed by The Rockefeller Foundation and by PIDG as part of the Urban Resilience Fund initiative (TURF), is designed to support cities in building commercially viable infrastructure projects by mobilising up to €10B in investments.
- **Coalition for Disaster Resilient Infrastructure (CDRI)**: A partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions that aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.
- International Council for Local Environment Initiatives (ICLEI) **Transformative Actions Program**: A global initiative to help local and regional governments transform their net-zero and resilient development infrastructure concepts into mature, robust and bankable projects ready for financing and implementation.
- **BuildingToCOP**: A coalition bringing together leaders from across the sector promoting the built environment's potential in accelerating the transition to a healthy, safe and resilient net zero future





FINANCE ENABLER

Resources for capacity building of the Finance Enabler

Frameworks/Benchmarks/Guidance

- **Principles for Responsible Banking** (UN Environment Programme): Provides a framework for sustainable banking outlining a three-step process that guides signatories through implementing their commitment. The framework consists of six principles that are designed to bring purpose, vision, and ambition to sustainable finance.
- Climate Initiative Bonds' **Resilience Taxonomy Whitepaper**: Presents a blueprint for the development of a climate resilience classification framework, with the primary objective of promoting and facilitating the investment in climate resilience through capital markets.
- The Institutional Investors Group on Climate Change's (IIGCC) **Working Towards a Climate Resilience Investment Framework**: Discussion paper that provides early insight into the first steps to creating a climate resilience investment framework, aiming to help investors integrate adaptation and resilience into their portfolios across all asset classes.
- The **Climate Resilience Investment in Solutions Principles (CRISP) Framework**: A framework for bond issuers, investors and other stakeholders seeking guidance on the different ranges and types of climate resilience investments, how to define and assess physical climate risks, and how to credibly demonstrate climate resilient outcomes.

Resources for capacity building of the Finance Enabler

🎯 Metrics/KPIs/Targets

- **Legal & General Investment Management (LGIM):** One of Europe's largest asset managers, has set expectations of their portfolio companies on climate. LGIM has sector-specific guides on 20 sectors, which list expectations that include adaptation.

✂️ Other Resources

- **Adaptation Fund (AF):** The fund finances projects and programmes that help vulnerable communities in developing countries adapt to climate change.
- **Water Resilience Coalition's WaterEquity Global Access Fund IV:** Is the first vehicle supported by the newly launched Water Resilience Coalition Investment Portfolio, which has identified a pipeline of collective investment opportunities that amount to at least \$1 billion.
- **BCG, Global Resilience Partnership & United States Agency for International Development, From Risk to Reward: The Business Imperative to Finance Climate Adaptation and Resilience (2023):** The report details the adaptation and resilience business case, laying out three key opportunities for the private sector to secure value and identifies the specific entry points for finance.

👥 Conveners

- **Global Resilience Partnership (GRP) -** The Global Resilience Partnership advances resilience through identifying and scaling on the ground innovation, generating and sharing knowledge, and shaping policy.
- **Global Center on Adaptation:** An international organisation working collaboratively with partners across public and private sectors including the European Bank for Reconstruction and Development, acting as a broker to accelerate action and support for adaptation solutions.
- **IIGCC:** Brings the investment community together to make progress towards a net zero and climate resilient future by 2030.
- **UNEP Finance Initiative:** Brings together a network of banks, insurers, and investors that can catalyse action across the financial system to deliver more sustainable global economies.
- **DF Insurance Development Forum:** Aims to optimise and extend the use of insurance and its related risk management capabilities to build resilience and protect people, communities, businesses, and public institutions that are vulnerable to climate disasters.
- **The World Resources Institute's (WRI) Adaptation Finance and Investment:** Aims to make climate risks more visible and actionable for the finance sector in order to catalyse adaptation investments.





PLANNING AND POLICY ENABLER

Resources for capacity building of the Planning and Policy Enabler

Frameworks/Benchmarks/Guidance

- **Sharm-el Sheik Adaptation Agenda**: The COP27 Presidency launched the Sharm-el Sheik Adaptation Agenda to build climate resilience by 2030.
- **Task Force on Climate-related Financial Disclosures (TCFD)**: An international initiative established to encourage organisations to disclose clear, consistent, and comprehensive information about their climate-related risks and opportunities.
- **Task Force on Nature-related Financial Disclosures (TNFD)**: A global initiative aimed at promoting the disclosure of nature-related financial information by organisations, highlighting the financial risks and opportunities associated with biodiversity and ecosystem impacts.

Resources for capacity building of the Planning and Policy Enabler

Frameworks/Benchmarks/Guidance

- **IFRS Sustainability Disclosure Standards:** The International Sustainability Standards Board (ISSB) has issued new sustainability standards, which are set of global reporting standards designed to enhance the transparency and consistency of sustainability reporting, and a part of the disclosure standards focus on climate-related information and more specific organisation's climate risk and adaptation approach.
- UN Environment Programme, **Principles for Responsible Banking (PRB) Climate Adaptation Target Setting (2023):** Aims to help banks accelerate their efforts on managing climate-related impacts and financing climate adaptation, by setting adaptation targets using the PRB impact framework.

Metrics/KPIs/Targets

- **Sharm-el Sheik Adaptation Agenda:** The Sharm-el Sheik Adaptation Agenda (SAA) outlines a comprehensive set of goals and strategies aimed at enhancing the global action on adaptation and increasing the resilience of all relevant global sectors, such as infrastructure, human settlement, food and agriculture and others.
- **ESRS: Climate Change Adaptation:** The ESRS, or European Single Reporting Standard, addresses climate change adaptation and provides guidelines for reporting on adaptation measures to mitigate the impacts of climate change.
- **EU Taxonomy: Activity "Climate Change Adaptation":** The EU Taxonomy categorises economic activities that contribute to environmental objectives, including "Climate Change Adaptation," to support sustainable finance and investments in adaptation projects within the European Union.
- European Commission, **The Corporate Sustainability Reporting Directive (CSRD) (2022):** A new directive from the European Union which mandates what companies have to disclose and report on their social and environmental activities.

Other Resources

- **National Adaptation Plans (NAPS):** National Adaptation Plans (NAPs) are strategies developed by countries to outline their approaches and priorities for adapting to the impacts of climate change, providing a framework for integrating adaptation measures into national policies, programs, and strategies. Under the United Nations Framework Convention on Climate Change (UNFCCC), all developing countries are encouraged to develop and implement NAPs.
- The **Corporate Sustainability Reporting Directive (CSRD):** A new directive from the European Union which mandates what companies have to disclose and report on their social and environmental activities.

Conveners

- The **Science Based Targets Network (SBTN)** and **Taskforce on Nature-Related disclosures (TNFD):** Two separate organisations, who however work closely together to define a science-based approach for nature-related topics and on defining guidance how organisations can become nature-positive and therefore adapt to environmental and climate risks.
- **Corporate Leaders Groups (CLG) Europe:** CLG is a knowledge hub that produces thought leadership on how policymakers and business leaders can back a green economic recovery that puts Europe and the UK on the path towards climate neutrality and reduce climate risks.

SAA

**SHARM
ADAPTATION
AGENDA**

