

2ND CLIMATE CHANGE ACTION PLAN (2016–2020)

COMPLETION REPORT

DECEMBER 2021



AFRICAN DEVELOPMENT BANK GROUP

Climate Change
and Green Growth Department
(PECG)

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This Completion Report of the 2nd Climate Change Action Plan (2016–2020) of the African Development Bank Group (AfDB) is the product of collaborative work on the part of staff from the African Development Bank's sector complexes and departments as well as Regional Hubs. A diverse group of experts has contributed to its development, and we would like to recognize and appreciate their efforts. Under the supervision and overall guidance of Dr. Kevin Kariuki, Vice President, Energy, Power, Energy, Climate Change and Green Growth and Dr. Al Hamndou Dorsouma, Officer-in-charge Director, Climate Change and Green Growth. The development of the Completion Report was led by Dr. Balgis Osman-Elasha, Chief Climate Change and Green Growth Officer, with strong support from Mr. Gareth Phillips, Manager of Climate and Environment Finance ; and from the Takforce members: Ms. Mwila Musumali, Ms. Edith Adera, Mr. Laouali Garba, Mr. Cecil Nartey, Ms. Josephine Ndao , Mr. Tapera Muzira, Mr. Guy Hart, Ms. Stephanie Simon, Ms. Hassanatu Bangalette Mansaray, Ms. Margaret Kamau, Ms. Davinah Milenge, Mr. Diego Fernandes De Velasco, Mr. Kinoshita Naoshige, Mr. Anthony Karembu, Ms. Sonia Borrini, Mr. Emile Kemayou, Mr. Gerald Esambe Njume, Mr. Sebutsoe Nkoanyane, Mr. Cornelius Sebutsoe Nkoanyane, Ms. Vanessa Ushie, Ms. Emelife Ifeyinwa Miriam, Ms. Camille Quenard, Mr. Constant Adeniyi, Mr. Shimelis Fekadu, Mr. Leandro Azevedo and Ms. Namawu Alolo Alhassan, Mr. Arona Soumare, Mr. Olufunso Somorin, and Ms. Charlotte Eyong.

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Abbreviations and Acronyms

AAAP	Africa Adaptation Acceleration Program	GEF	Global Environment Facility
ABM	Adaptation Benefit Mechanism	GHG	Greenhouse Gas
ACCF	Africa Climate Change Fund	INDC	Indicative Nationally Determined Contribution
ACTC	African Climate Technology Center	IPCC	Intergovernmental Panel on Climate Change
ACTFCN	African Climate Technology and Finance Center and Network	IUCN	International Union for Conservation of Nature
ADB	African Development Bank	MERL	Monitoring, Evaluation, Reporting, and Learning
ADF	African Development Fund	MOOC	Massive Open Online Course
AF	Adaptation Fund	MRV	Measurement, Reporting, and Verification
AFAC	African Financial Alliance on Climate Change	NAP	National Adaptation Plan
AfDB	African Development Bank Group	NDA	National Designated Authority
AFOLU	Agriculture, Forestry, and Other Land Use	NDC	Nationally Determined Contribution
AFTF	Agriculture Fast Track Fund	NDF	Nordic Development Fund
AHGC	Department of Gender, Women, and Civil Society	PECG	Climate Change and Green Growth Department
AMCOW	African Ministers' Council on Water	PV	Photovoltaics
AWEX	Walloon Export and Foreign Investment Agency	RDGN	North Africa Regional Development and Business Delivery Office
AWF	Africa Water Facility	RISP	Regional Integration Strategy Paper
CAB	Certified Adaptation Benefit	RMC	Regional Member Country
CCAP	Climate Change Action Plan	RMF	Results Measurement Framework
CCST	Climate Change Support Team	RWSSI	Rural Water Supply and Sanitation Initiative
CIF	Climate Investment Fund	SAWIDRA	Satellite and Weather Information for Disaster Resilience in Africa
CDSF	ClimDev Special Fund [Africa]	SDG	Sustainable Development Goal
CSP	Country Strategy Paper	SECO	State Secretariat for Economic Affairs
CTCN	Climate Technology Centre and Network	SEFA	Sustainable Energy Fund for Africa
DANIDA	Danish International Development Agency	SIDA	Swedish International Development Cooperation Agency
DBDM	Development and Business Delivery Model	SME	Small- and Medium-Sized Enterprises
DBSA	Development Bank of Southern Africa	UMDF	Urban Municipal Development Fund
EGGSP	Electricity and Green Growth Support Program	UNECA	United Nations Economic Commission for Africa
ERC	Emission Reduction Certificate	UNFCCC	United Nations Framework Convention on Climate Change
ESG	Environmental, Social, and Governance	USAID	United States Agency for International Development
ESW	Economic and Sector Work	WASH	Water, Sanitation, and Hygiene
FAPA	Fund for African Private Sector Assistance		
GCA	Global Centre on Adaptation		
GCF	Green Climate Fund		



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Executive summary

Climate change complicates Africa's development agenda, generating physical risks that need to be considered if development is to be resilient and long lasting. To date, impacts on people, property, and livelihoods have been limited, which might explain why climate change is a low priority for leaders and others across Africa. However, the risk of impacts is expected to increase rapidly. Reductions in Africa's greenhouse gas (GHG) emissions will have a limited influence on global warming and related physical hazards. Yet despite **Africa's very low annual per capita emissions of 4.7 tonnes per capita (CO₂eq)**, investing in low-carbon development helps avoid "transition risks" and the possibility of "stranded assets." Furthermore in the past, low-carbon investments were considered costly, but investments in renewable energy technologies are not only commercially viable, but in many locations are the most cost-effective option for electrification. It is in this context that the African Development Bank Group's (AfDB) Second Climate Change Action Plan (CCAP2) was evaluated.

CCAP2 covered the period 2016 to 2020 but was extended to 2021 due to COVID-19. CCAP2 was built on four pillars, comprising Pillar 1 on adaptation and climate-resilient development, Pillar 2 on mitigation and low-carbon development, Pillar 3 on climate finance, and Pillar 4 on enabling environment and cross-cutting issues. Pillars 1 and 2 address the situation in Africa and the AfDB's contribution to climate-resilient low-carbon development; meanwhile, Pillars 3 and 4 have a greater focus on AfDB's operational effectiveness and institutional efficiency. CCAP2 was ambitious with mixed results. The evaluation of CCAP2 is based on the CCAP2 indicator results framework, and the AfDB's Results Measurement Framework (RMF) with indicators viewed through a climate change lens. The evaluation also includes a thematic

analysis of climate change-related evaluations and annual reports from the AfDB, which identify issues and interventions that can enhance Pillar 4 on an enabling environment.

Climate finance from internal sources is an order of magnitude greater than that mobilized from external sources. For example, in 2020, **internal sources of climate finance totalled USD 1,545 billion, meanwhile external sources mobilized totalled USD 0.550 billion** (Table 1).

While progress has been made increasing the proportion as climate finance from the Bank's approved operations, this represents only a fraction of the estimated finance required to ensure climate-resilient low-carbon development. A majority of this finance will come from domestic sources including taxes. At the same time, at least **USD 3.85 billion per year** is needed to support **adaptation components** of Nationally Determined Contributions (NDCs) while between **USD 42 and 152 billion** is needed to support **African NDCs**.

At the operations level, **90% of new operations had climate-informed designs** in 2020 (PECG Report, 2020). However, CCAP-related evaluations show climate change considerations need to be included in all operational decisions. Hence, it is recommended that the AfDB continue to include climate change considerations in the design of new operations, and also include climate change considerations in all operational decisions that are either affected by climate change or influence GHG emissions. Oversight, monitoring, reporting, and decision systems should be important elements of the CCAP3.

It should be noted here that the CCAP is not actually an "action plan," but rather addresses strategic goals

Table 1: Climate Finance 2016–2020

Sources	2016		2017		2018		2019		2020	
	Approval US\$M	Climate Finance US\$M	Approval US\$M	Climate Finance US\$M	Approval US\$M	Climate Finance US\$M	Approval US\$M	Climate Finance US\$M	Approval US\$M	Climate Finance US\$M
External	525	119	995	423	1,448	531	1,359	608	1,478	550
Internal	10,469	907	7,456	1,915	8,812	2,741	8,811	2,992	4,714	1,545
Grand Total	10,994	1,025	8,452	2,338	10,260	3,272	10,169	3,600	6,192	2,095

and objectives and sets out the approaches the AfDB as a whole can use to address climate change. As such, each of the CCAP2 pillars could only be assessed in broad terms.

Putting the evaluation in context, there has already been **over 1°C of atmospheric warming over Africa** and current global GHG emissions indicate the world is on a path to overshooting the Paris Agreement target of limiting global warming to well below 2°C. In fact, carbon dioxide removals at scale will be needed to limit climate change. Given that global failure to limit climate change is the most likely scenario, climate resilience is essential.

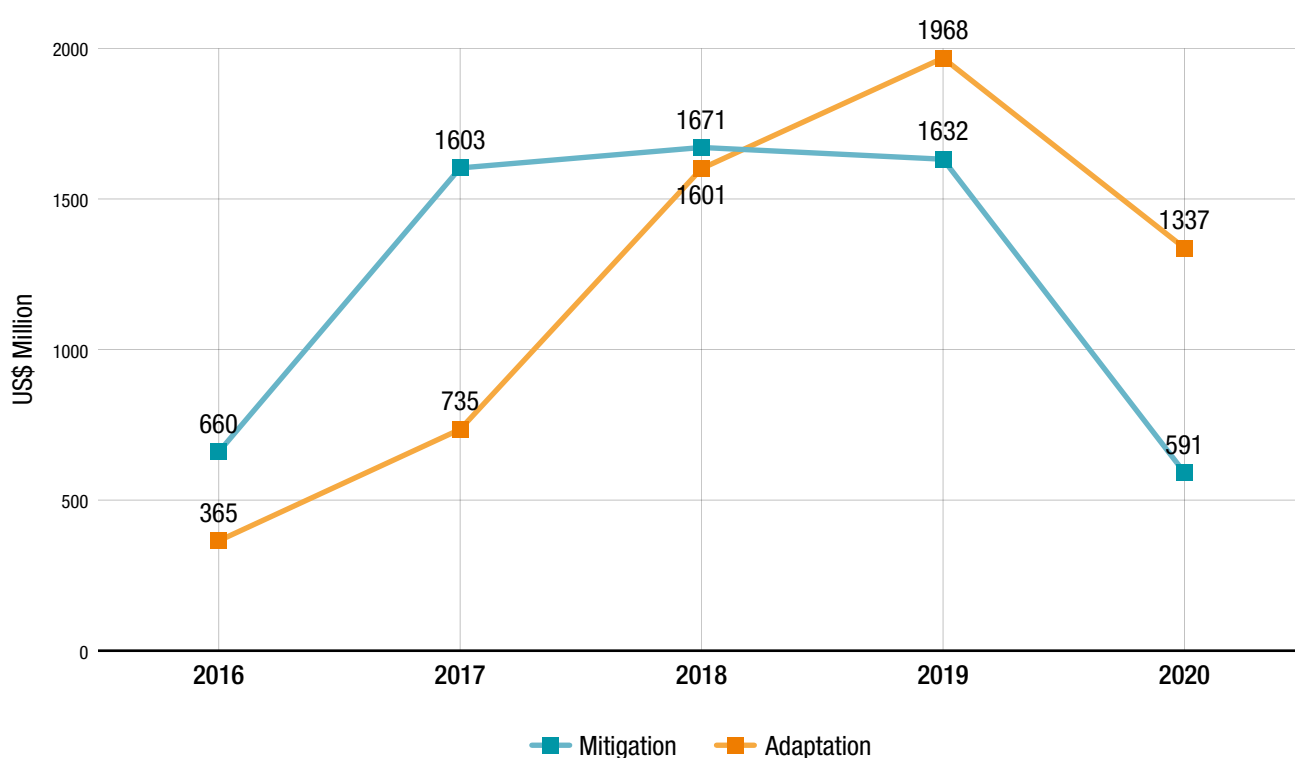
With regards to Pillar 1 on adaptation and climate-resilient development, many challenges remain, starting with feeding Africa and domestic food security. Cereal yields have not met yield targets of 2.2 tonnes per 2020, and there are great variations in yields across Africa. By 2019, **the AfDB had tripled its own target of 6.3 million people benefitting from improvements in agriculture**; however, there is a general failure Africa-wide to meeting AfDB's target of 0.63 million people from rural populations using improved farming technologies by 2019, or the target of 47.8 thousand hectares of land with improved water management by 2019. Instead, **0.1 million people from rural populations were using improved farming technologies in 2019 and 23.3 thousand hectares of land had improved water management**. However, Africa's

net agricultural trade balance has improved in dollar terms, but Africa remains a net food importer, **importing USD 28.2 billion worth of food in 2019**. Improved trade and reduction in trade costs could also help improve resilience and food security. Likewise, economic diversification can help increase resilience to shocks including climate shocks.

When it comes to Pillar 2 on mitigation and low-carbon development, per capita GHG emissions for Africa are **3.5 tonnes per capita (CO₂eq) in 2018**, well below the **4.7 tonnes per capita (CO₂eq) required globally in 2030** for the world to be on a path towards fulfilling the Paris Agreement. However, Africa needs development and many technologies and practices available include GHG emissions. In fact, the proportion of electricity produced using combustible fuels has increased to **just under 81% in 2018**. There are growing oil and gas reserves, with **120,573,130 petajoules of gas reserves, 717,828 petajoules of oil reserves, and 382,016 petajoules of coal reserves**. Capital related to these resources, including refining and combustion technologies, risk becoming stranded assets if the world moves aggressively to curtail GHG emissions.

Unfortunately, AfDB targets related to energy have largely been missed with only **174 MW of renewable energy installed by 2019 compared to a target of 560 MW**. Likewise, only **29% of the population had access to clean cooking solutions in 2019**, compared to a **target of 63% in 2020**. In addition to energy-related GHG emissions, agriculture, forestry,

Figure 1: Adaptation versus mitigation finance (2016–2020)



and land use (AFOLU) change and forestry make up the majority of Africa's emissions profile accounting for the majority of Africa's GHG emissions. Africa's NDCs to the global response to climate change are ambitious, including conditional targets requiring climate finance in many cases.

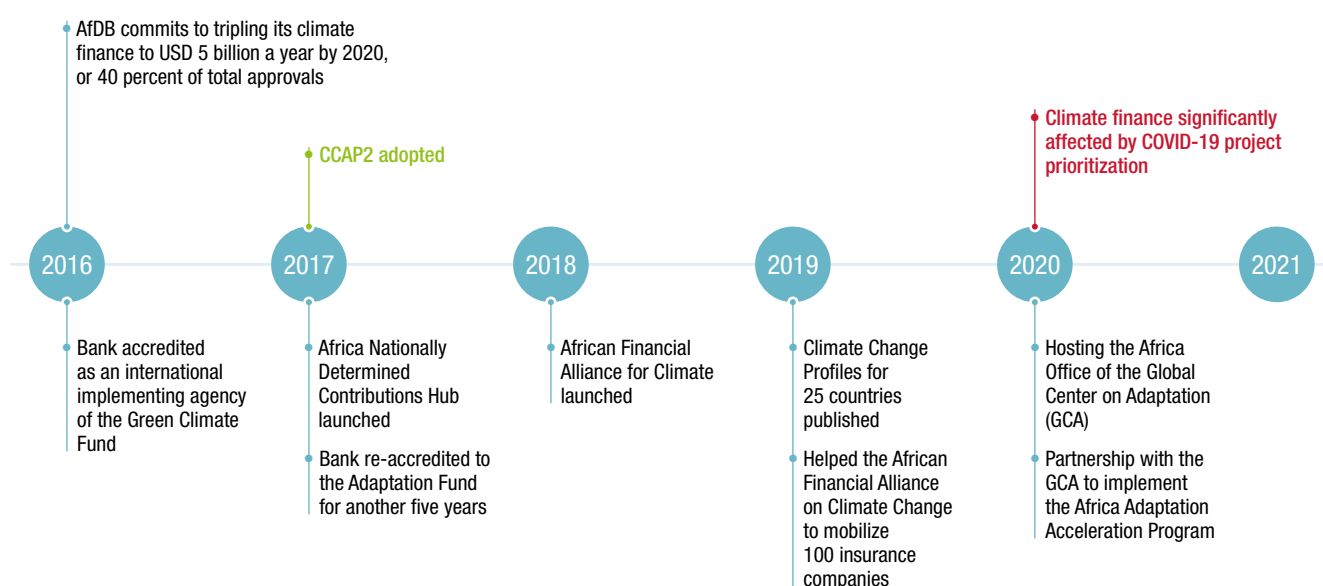
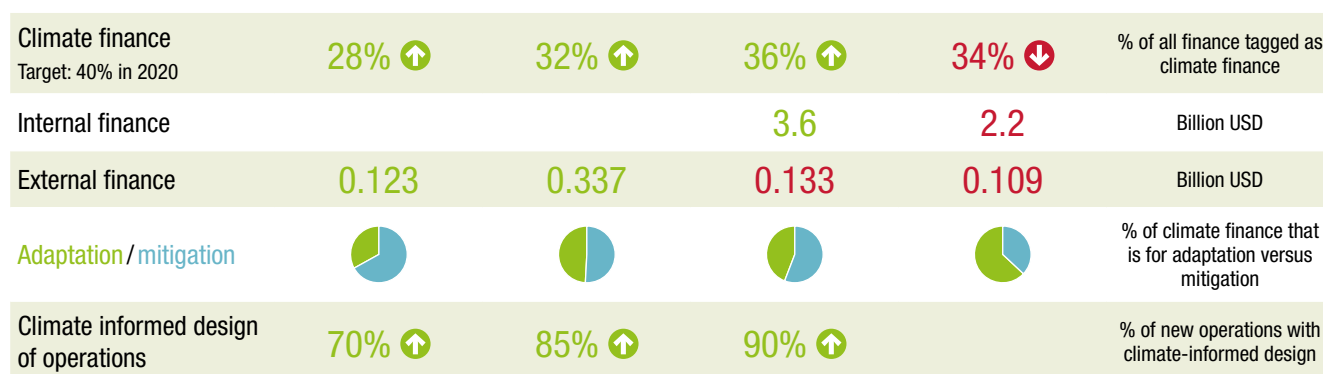
Regarding Pillar 3 (Climate Finance), the Bank set a target to allocate at least 40% of its approvals as climate finance by 2020, out of which 50% will be attributed to adaptation. The Bank's climate finance grew from 9% in 2016 to 35% in 2019 and 34% by 2020. The Bank could have achieved the 40% target by 2020, but the prioritization of COVID19 interventions.

It is important to note that the proportion of Bank's financing devoted to adaptation has jumped from 26% in 2016 to 69% in 2020, largely surpassing the global average which stands at 10%. The Bank is achieving its goal of parity between adaptation and mitigation finance, reaching 50%, 55% and 69% of climate finance being invested in adaptation actions in 2018, 2019 and 2020, respectively. The figure below shows

the steady increase of Bank's adaptation finance, moving from USD 500 million in 2012 to about 2 billion in 2019. The goal is to achieve a constant rise in both adaptation and mitigation finance (Figure 1 and figure 2).

While there has been progress with reference to Pillar 3 on climate finance, there have also been setbacks, most notably **the COVID-19 pandemic-influenced priorities in 2020**, reducing the proportion of finance tagged as being climate finance. With **climate finance at 34%**, there is a long way to go to fulfil the Paris Agreement goal of having all climate finance aligned with climate-resilient low-carbon development. Given the need for adaptation and climate-resilient development, the AfDB had the goal of parity between adaptation finance and mitigation finance. The AfDB surpassed this with **adaptation finance accounting for 63% of climate finance in 2020, up from 36% in 2016**. While including climate change in the design of projects and operations helps, there are challenges when it comes to monitoring adaptation and mitigation outcomes and the extent to which climate finance influences climate change and

Figure 2: Timeline with summary of select CCAP2 related events and indicators



development outcomes in Africa, especially given the scale of challenges faced both in terms of the required resources and ambition levels.

With regards to Pillar 4 on enabling environment, climate change complicates AfDB processes and the work of staff. For example, while climate change is included in the design of most operations, operational decisions may or may not include climate change as a consideration. And while the Climate Change and Green Growth Department (PECG) can provide advice and guidance, other staff from across AfDB are involved in making decisions with a bearing on operations and finance. As such, internal capacity is important, an aspect which successive evaluations and reports have identified as being key alongside stakeholder capacity, for example, in regional member countries (RMCs). The capacity of partners to apply for funds, deliver projects, and prepare financial reports is essential as well.

With the above evaluation in mind, the following **recommendations** are made:

- **Climate change should be elevated within the AfDB, fulfilling the AfDB's Charter when it comes to sustainable development.** Given the need for all finance to be eventually aligned with climate-resilient low-carbon development, and the fact that climate change complicates processes in the AfDB, a question to consider going forward is whether the AfDB should become the African Sustainable Development Bank, where climate change and sustainable development becomes a core part of every staff member's work. This is consistent with the AfDB's updated Charter which includes contributing to "...the sustainable economic development and social progress of its regional members individually and jointly" (Article 1).
- **The AfDB should establish a specialized unit on the quantification of climate resilience benefits and GHG emissions related to AfDB activities.** Successive reports have highlighted the need for improved monitoring, evaluating, reporting, and learning systems. This is especially important when

considering the complexity of understanding and reporting adaptation and mitigation contributions of projects. However, it is challenging to quantify GHG emissions and climate resilience for individual projects. It is far more challenging to quantify resilience and emissions for the many types of projects and activities that AfDB supports. This requires specialized expertise. This unit would be a go-to resource for project developers, project managers, and others needing advice, tools, and estimates of GHG emissions and climate resilience levels. Enhancing AfDB's capacity in this area will also strengthen the AfDB position when negotiating international reporting standards with other multilateral development banks, and ensuring these standards are practical and meet African reporting needs.

- **The AfDB should consider high-risk high-reward business models, akin to venture capital, with the aim of generating climate-resilient low-carbon development at scale.** Given that radical changes and ambition are needed if the world is to fulfil the Paris Agreement, what risk is the AfDB willing to take to find new business models and ways of achieving climate-resilient low-carbon development? Are new business models required that take on high risk and high reward, akin to venture capital? These are important strategic questions that the AfDB needs to consider. Focusing on low-risk climate-resilient low-carbon development projects will not generate that change needed at scale to limit climate change and its impacts across RMCs.
- **Climate change, finance, and project management-related capacity development and mobilization in RMCs should become a continuous process involving training partners.** This includes going beyond periodic training in the workplace to continuous training upstream, so people enter workplaces better equipped to apply for and use funds while also effectively managing projects. This may involve working with partners including universities and other education providers, as well as having online training materials available internally and externally.



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Chapter 1: Introduction to the Second Climate Change Action Plan

Introduction

Surveys show climate action is a low priority in Africa (Custer *et al.* 2018). Meanwhile the Intergovernmental Panel on Climate Change (IPCC) assessments show climate change impacts on people, property, and livelihoods have only recently become detectable, but we are at an inflection point where the risk of impacts will soon be moderate to high. In short, the climate crisis is a “crisis of response” that risks becoming a “crisis of impacts” (Webb 2021). So how do we limit the risk of climate change while fulfilling immediate development priorities?

The African Development Bank Group (AfDB) has taken on this challenge. Article 1 of the updated AfDB Charter states that the AfDB should “contribute to the sustainable economic development and social progress of its regional members individually and jointly” (see Annex 1 for more information on the Charter and climate change). Climate change poses a strategic risk to development and social progress. Therefore, the AfDB has implemented its First and Second Climate Change Action Plans (CCAP1 and CCAP2) and is in the process of establishing its Third Climate Change Action Plan (CCAP3). CCAP1 addressed the period 2011–2015 and CCAP2 addresses the period 2016–2021.¹ CCAP2 builds on CCAP1, providing a strategic framework for climate action, while also highlighting opportunities for collaboration with development partners. Meanwhile the CCAP3 will build on the experiences from CCAP1 and CCAP2.

CCAP2 is an integral part of the AfDB, addressing African and global development agendas. For example, CCAP2 is aligned with the Bank’s “High 5s Agenda” (H5s) and Green Growth Framework (2014), regional member countries’ (RMCs) Nationally Determined Contributions (NDCs) towards the global response to climate change, the African Union Agenda 2063, the United Nations Agenda 2030 and the Sustainable Development Goals (SDGs), and of course fulfilling the Paris Agreement and the United Nations Framework Convention on Climate Change.

The AfDB has a special role, helping fulfil the Paris Agreement’s aim to limit global warming to well below 2°C and “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.” Under CCAP2, the AfDB has committed to:

1. Allocating 40% of project approvals to climate finance by 2020, with equal proportions for adaptation and mitigation;
2. Mainstreaming climate change and green growth into all Bank investments by 2020; and
3. Securing significantly increased access to climate finance for low-income African countries with a target of USD 25 billion by 2025 and positioning Africa’s financial sector at the forefront of financing innovations.

This Report looks at whether the AfDB has achieved these and other targets from the CCAP2. The Report includes an evaluation framework and an assessment of the CCAP2 against this framework and other available evidence, while also drawing lessons for the future. However, before evaluating CCAP2, it is important to look at the AfDB’s role in Africa and climate change, as well as CCAP2’s vision, activities, and scope.

Vision and areas of activity under CCAP2

From page 2 of CCAP2: **“The Strategic Vision of the Bank’s Second Climate Change Action Plan (CCAP2) foresees an African continent that is less vulnerable to climate change and develops in a low-carbon manner.”**

According to CCAP2, the vision is to be achieved by:

- Supporting the implementation of the NDCs in Africa by helping African countries define and achieve their

¹ CCAP2 was extended from 2020 to 2021 due to the COVID-19 pandemic.

commitments to adaptation and mitigation whilst also fulfilling their development objectives; and

- Scaling up levels of climate finance accessed and channelled to African countries from both public and private sources.

CCAP2's implementation was also supported by the new Development and Business Delivery Model (DBDM). Through the deployment of resources under the DBDM:

- The Bank would ensure that all future projects indicate whether and how they address adaptation and mitigation;
- Provide for regular monitoring and tracking of climate—as well as development-related benefits; and
- Ensure the AfDB's overall progress in advancing Africa's climate change agenda.

The activities under the CCAP2 are organized along four main pillars:

1. Adaptation and climate-resilient development;
2. Mitigation and low-carbon development;
3. Financial resource mobilization; and
4. Enabling environment, including cross-cutting issues.

Cross-cutting issues addressed under enabling environment include: policies and institutional reforms, capacity development, technology development and transfer, and creation of partnerships and networks.

Climate-resilient and low-carbon development are linked to the AfDB's High 5s. Through the implementation of the CCAP2 and the mainstreaming of climate change and green growth into the individual High 5 strategies, CCAP2 is expected to deliver the following:

- Light up and Power Africa investments would account for 22% of climate finance per year by 2020;
- Feed Africa investments would contribute 6% of climate finance per year by 2020;
- Industrialize Africa would contribute 3% of climate finance per year by 2020;
- Integrate Africa would contribute 1% of climate finance per year by 2020; and

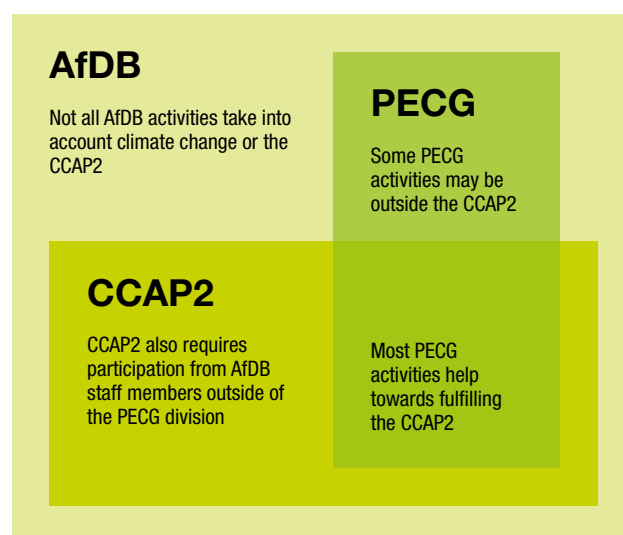
- Improve the Quality of Life for People of Africa would contribute 8% of climate finance per year by 2020.

As such, CCAP2 has a clear vision, processes, and expectations against which it is possible to evaluate progress.

Scope of evaluation

This completion report addresses the AfDB as a whole, as it is the AfDB that is responsible for delivery of the CCAP2. However, the Climate Change and Green Growth Department (PECG) is critical to the delivery of the CCAP2, especially when it comes to providing advice and guidance on projects being considered, knowledge generation, or even answering queries from other divisions or from stakeholders outside the AfDB. (Figure 3)

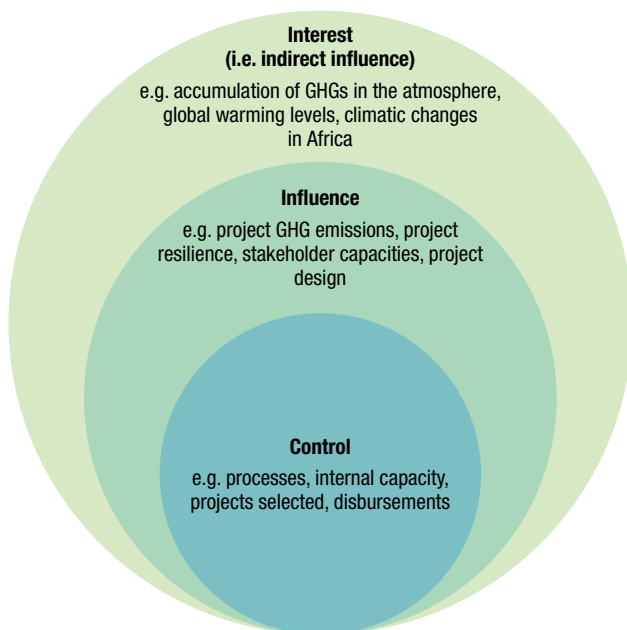
Figure 3: Relationship between the African Development Bank Group (AfDB), the Second Climate Change Action Plan (CCAP2) and the Climate Change and Green Growth Department (PECG)



Outline of evaluation

The evaluation addresses CCAP2's four pillars and the AfDB's Results Measurement Framework (RMF) levels 1 to 4. Level 1 addresses the question of what development progress is Africa making. These are interests on which the AfDB only has an indirect influence. Level 2 addresses AfDB development impacts and the influence of the AfDB on climate change and development in Africa. Level 3 addresses operational effectiveness and Level 4 addresses institutional efficiency, including issues of internal capacity. The AfDB has "control" over Levels 3 and 4 as these levels involve processes, internal capacity, and the projects selected and supported by the AfDB (Figure 4).

Figure 4: Levels of AfDB control, influence, and interest when it comes to processes, projects, and climate change





Chapter 2: Adaptation and climate-resilient development

Introduction

Africans have contributed the least to atmospheric concentrations of greenhouse gases (GHGs) and climate change but will be impacted more than most from other parts of the world. Hence adaptation is very important. The purpose of adaptation is to enhance climate resilience, for example by limiting exposure to climate and related hazards or limiting vulnerability through improved development. Together,

adaptation and climate resilience make up Pillar 1 of CCAP2.

Box 1 is an excerpt from the CCAP2 highlighting the AfDB's approach towards implementing and fulfilling Pillar 1 on adaptation and climate resilience. This includes economic diversification and sectoral planning, for example, related to agriculture, water, health, and infrastructure. Benefits to people and quality of life and livelihoods are also recognized.

Box 1: Pillar 1 – Adaptation and climate resilience

The Bank will leverage resources to strengthen the adaptive capacities of countries by supporting the diversification of economies away from heavy dependence on climate-sensitive sectors and the creation of alternative livelihoods in grassroots communities. It will also contribute to sectoral planning and incorporation of adaptation and resilience in key sectors identified in African NDCs, such as water, agriculture, health, infrastructure, and energy; and link with the Global Sendai Framework to strengthen disaster risk management. The Bank recognizes hard adaptation measures which strengthen infrastructure to make it more resilient to changing climatic conditions, and soft measures which make households, communities, and economies economically stronger and better able to withstand climate-induced shocks.

Source: CCAP2

Table 2: Evaluation indicators for Pillar 1 – Adaptation and climate-resilient development

Theme	Results chain/expected result	Performance indicator (2015)	Baseline (2015)	Expected (2020 or 2025)
Reduced vulnerability to the adverse impacts of climate change and variability (adaptation)				
Adaptation	Climate resilience	Adaptation and development in Africa		
		Adaptation and development across Africa		
		Economic diversification (Index: 1 low-0 high)		
		Cost of trading across borders (\$)		
		Vulnerable sectors identified in NDC adaptation components		
Feed Africa	Improved land management and climate-resilient agricultural practices and technologies Other	Cereal yield (tonnes per hectare)	1.6	2.2
		Cereal yields for each AfDB region		
		People benefiting from improvement in agriculture		
		Land with improved water management		
		Rural population using improved farming technology		
		Agricultural inputs provided: fertiliser, seeds, etc.		
		Fertiliser consumption		
		Africa's net agricultural trade balance		

Theme	Results chain/expected result	Performance indicator (2015)	Baseline (2015)	Expected (2020 or 2025)
Improve the Quality of Life of Africans	Increased climate risk resilience to diseases and disasters among communities	Access to safely managed drinking water services	72	77.5
		Percentage of population using safely managed drinking water services across Africa		
		Access to safely managed sanitation facilities	39	41
		Percentage of population using safely managed sanitation services		
		People with new or improved access to water and sanitation		
		Resilience to water shocks (index)	3.5	3.8
Adaptation	Planning	Status of adaptation planning in Africa and around the world		

To the extent possible, data related to these themes has been collected and compiled, with the aim of making an evidence-based evaluation of climate change and development performance. Table 2 shows the performance indicators used to evaluate adaptation progress and climate-resilient development.

Readiness Index, and Vulnerability Index from Notre Dame University through the Climate Watch website. Based on these data, readiness levels have decreased over time (see light to dark bubbles), even while human development levels have increased. Levels of vulnerability have stayed the same as represented by the size of the bubbles.

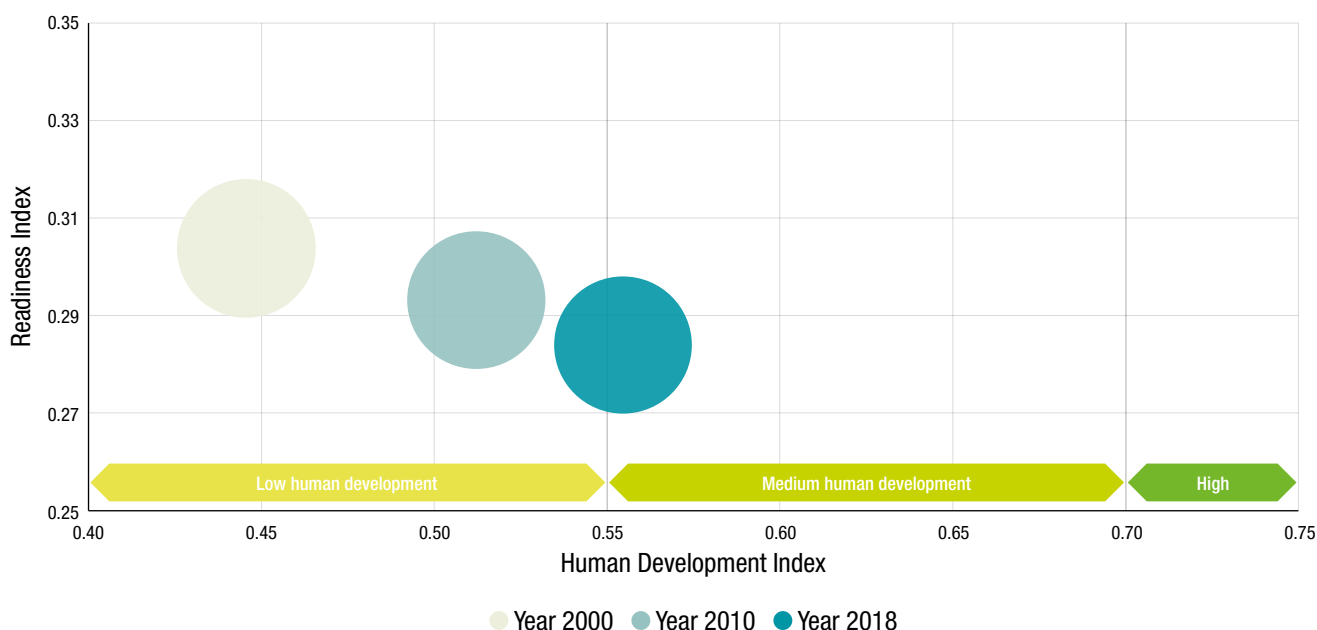
Adaptation and resilience across Africa

Figure 5 addresses adaptation and development, plotting data from the Human Development Index,

Figure 6 has the same axes as Figure 5, but plots RMC data for the year 2018. As such, Figure 6 highlights the spread of readiness levels relative to human development. Readiness generally increases with level of human development, while vulnerability levels generally decrease with human development (i.e. the bubbles generally get small with higher levels of human development).

Figure 5: Climate change readiness, human development levels, and vulnerability (bubble size)

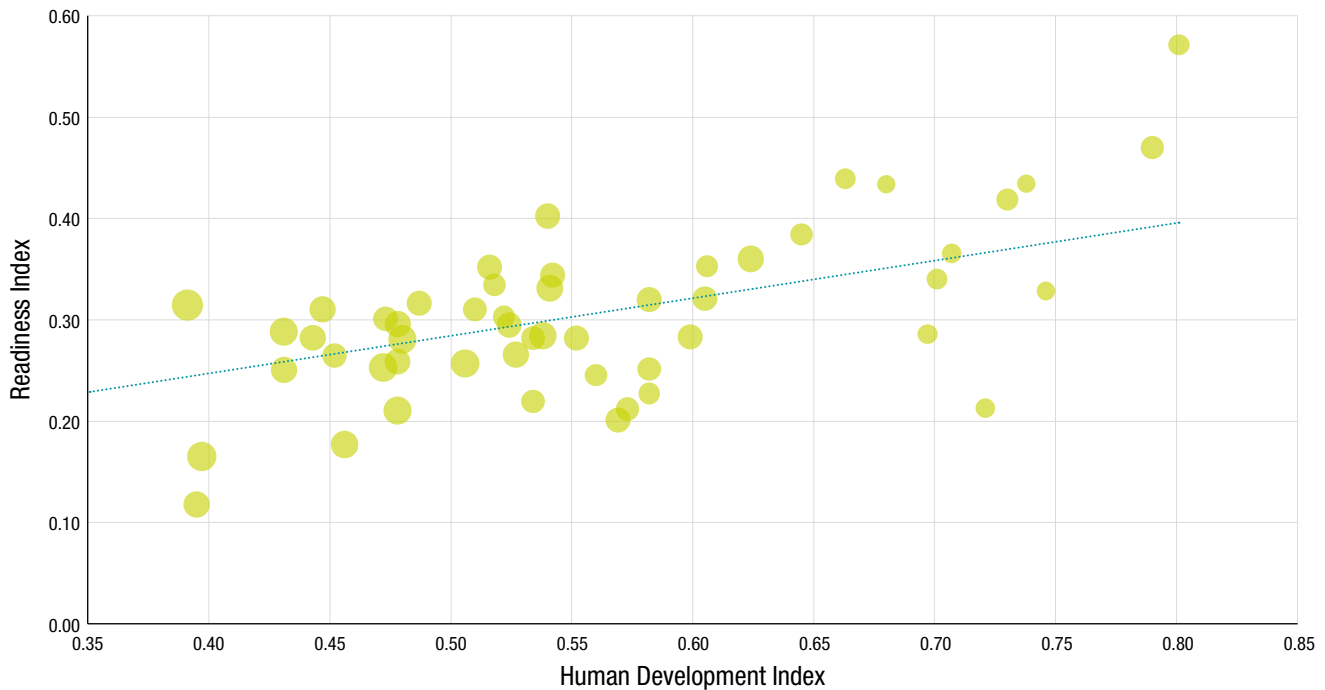
Adaptation and development in Africa



Source: UNDP HDI, Climate Watch

Figure 6: Readiness Index values, higher Human Development Index values, and levels of vulnerability (bubble sizes)

Adaptation and development across Africa



Source: UNDP HDI, Climate Watch

Figure 7: Economic diversification relative to targets

(Index: 1 low–0 high)



Source: ADER

While Figure 6 shows readiness increases with levels of human development, Figure 7 presents economic diversification levels, which has the co-benefit of enhancing economic resilience. Unfortunately, levels of economic diversification appear to be missing targets.

In addition to economic diversification, trade can create resilience; for example, if local harvests fail, food can be imported from elsewhere. Likewise, ease of trade helps enable supply chains to adapt in case of climatic or other disruptions. Unfortunately, the cost of trading across borders is not meeting cost reduction targets (Figure 8).

Vulnerable sectors

Figure 8: Cost of trading across borders relative to targets

(\$)

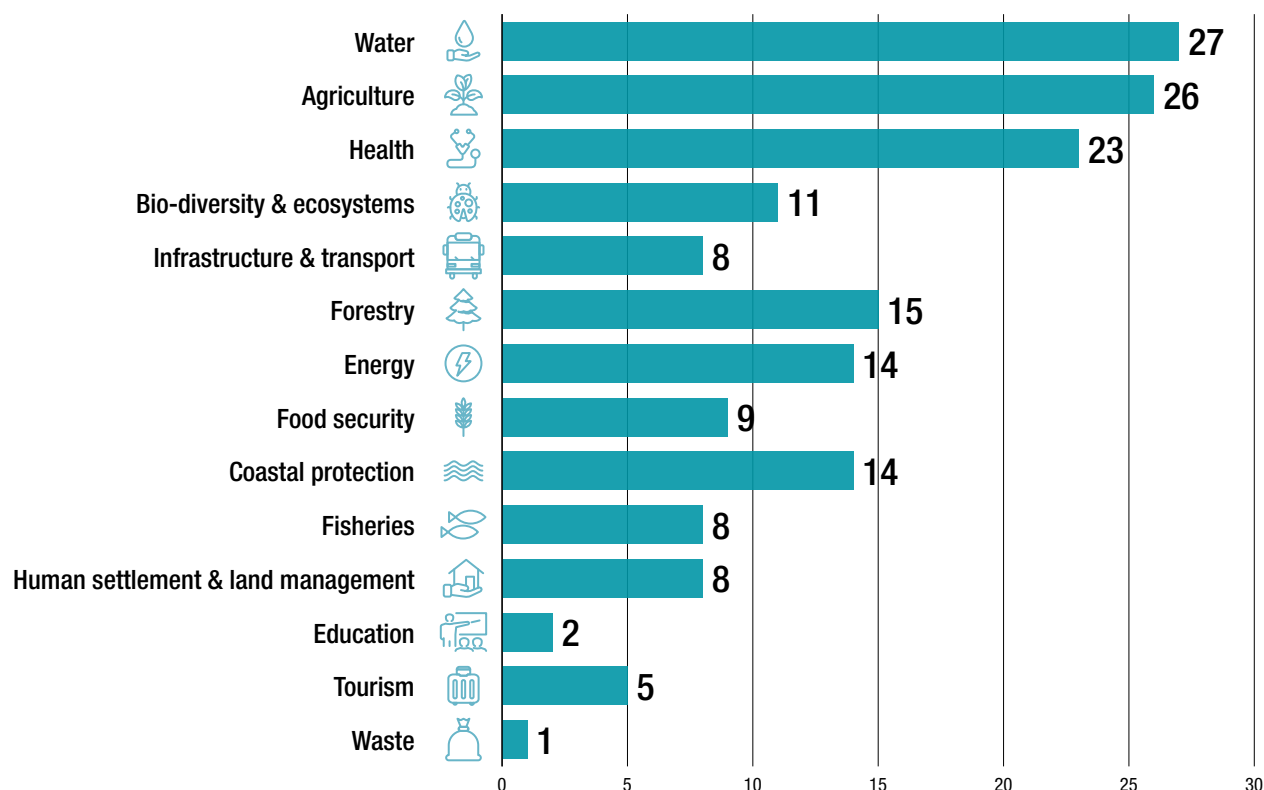


Source: ADER

Many African countries address adaptation in their NDCs, reflecting concerns around climate change impacts and risks, and the need to sustain and progress development. The AfDB's NDC Hub has prepared the Analysis of Adaptation Components of Africa's NDCs. This includes vulnerable sectors identified in NDCs (Figure 9). When faced with the need to act on climate change, it may be tempting to try and identify priority sectors for intervention. However, Figure 9 shows adaptation efforts need to address a range of sectors. So, while water and agriculture appear in many RMC NDCs, so do

Figure 9: Vulnerable sectors identified in NDC adaptation components

(Number of countries)



Source: AfDB Analysis of Adaptation Components of Africa's Nationally Determined Contributions

forestry, energy, coastal protection, biodiversity and ecosystems, and other sectors. Adaptation support must be tailored to the needs of RMCs.

Given the range of sectors that may need to be addressed when supporting adaptation within a country, or across countries, it is important to have processes for identifying needs as well as reliable information on which to make decisions. Findings from the NDC adaptation review conducted by the AfDB highlighted the need for information, processes, capacity, and networks which are able to address multiple sectors.

Feed Africa

The CCAP2 has the target of Africa having a cereal yield of 2.2 tonnes per hectare by 2020 and the AfDB has the target of Africa reaching 2.8 tonnes per hectare in 2025. From Figure 10, little progress appears to have been made towards achieving these ambitious targets.

From Figure 11, there are fluctuations across each of the AfDB regions. Of the AfDB regions, North Africa

Figure 10: Africa's cereal yield relative to targets

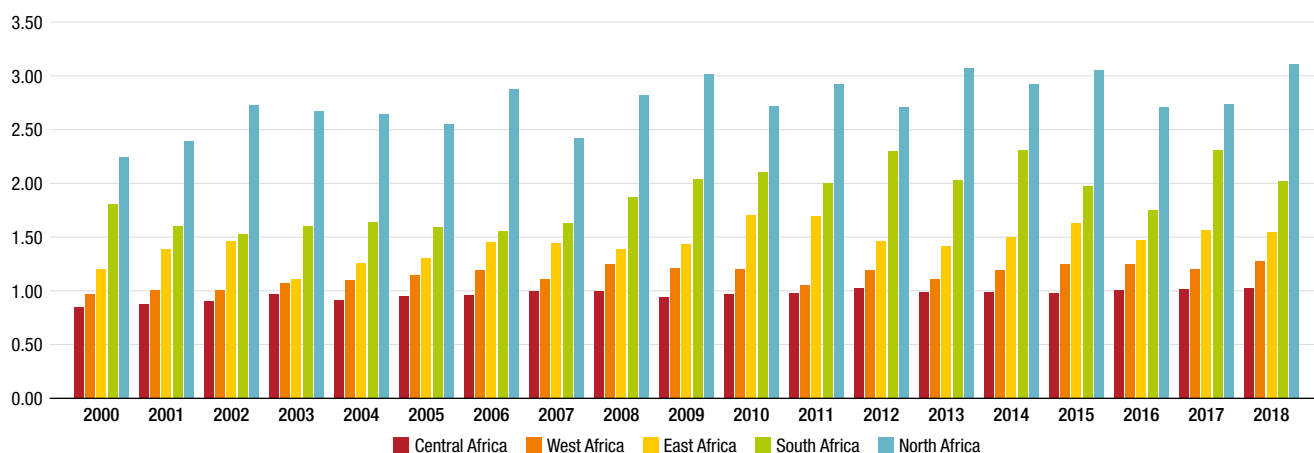
Cereal yield (ton/hectare)



Source: ADER

has the highest cereal yield at around 3 tonnes per hectare (Figure 11). Southern Africa fluctuates around the CCAP2 target of 2.2 tonnes per hectare. Other regions have yields of between 1 and 2 tonnes per hectare. With regards to resilience of cereal yields, there is evidence that climate change has adversely impacted yields in West Africa (Sultan *et al.* 2019). It is unclear if other regions' cereal yields have been impacted.

Enhancing agricultural practices, including the use of inputs that reduce vulnerability to climate change, can

Figure 11: Cereal yields for each AfDB region**Cereal yield (tonnes per hectare)**

Source: World Bank

Figure 12: People benefiting from improvements in agriculture relative to targets**(Millions)**

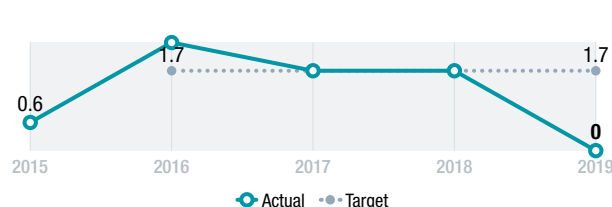
Source: ADER

Figure 14: Rural population using improved farming technology relative to targets**(Millions)**

Source: ADER

Figure 13: Land with improved water management relative to targets**(Thousand ha)**

Source: ADER

Figure 15: Agricultural inputs provided relative to targets**(Thousand tons)**

Source: ADER

help enhance climate resilience, although there is the risk of maladaptation depending on local conditions. Hence the AfDB's contribution to agriculture has important implications for adaptation and climate resilience.

With regards to AfDB's contribution to agriculture, AfDB activities have reached millions of people, exceeding targets (Figure 12). Outcomes include improved water management, although years 2018

and 2019 fell well short of targets (Figure 13). The AfDB has supported improved farming technologies, but the population using these technologies is well short of targets (Figure 14). The AfDB is reaching targets with regards to the provision of agricultural inputs such as fertiliser, seeds, etc (Figure 15). It should be noted that while fertiliser application enhances yields, application rates are generally low across Africa (Figure 16). However, the timing of application is important, and over-application or

Figure 16: Fertiliser consumption relative to targets

(Kilograms per hectare of arable land)



Source: ADER

application at the wrong times of year can mean that fertiliser can contribute directly or indirectly to GHG emissions, for example in the form of nitrogen dioxide.

The impact of climate change on agriculture in Africa is clearly an important concern, but at the same time, Africa is a net food importer (Figure 17). As such, the food needs of Africa depend not only on local supply but also international supply chains. Africa is vulnerable to any disruptions to international food production, including climatic disruptions. Hence, the aim of reducing net food trade to zero and having food self-sufficiency is an important step towards climate resilience.

Improving the quality of life of Africans

CCAP2 includes the expected percentage of population using safely managed drinking water

Figure 17: Africa's net agricultural trade balance relative to targets

(\$ billion/year)



Source: ADER

Figure 18: Access to safely managed drinking water services relative to targets

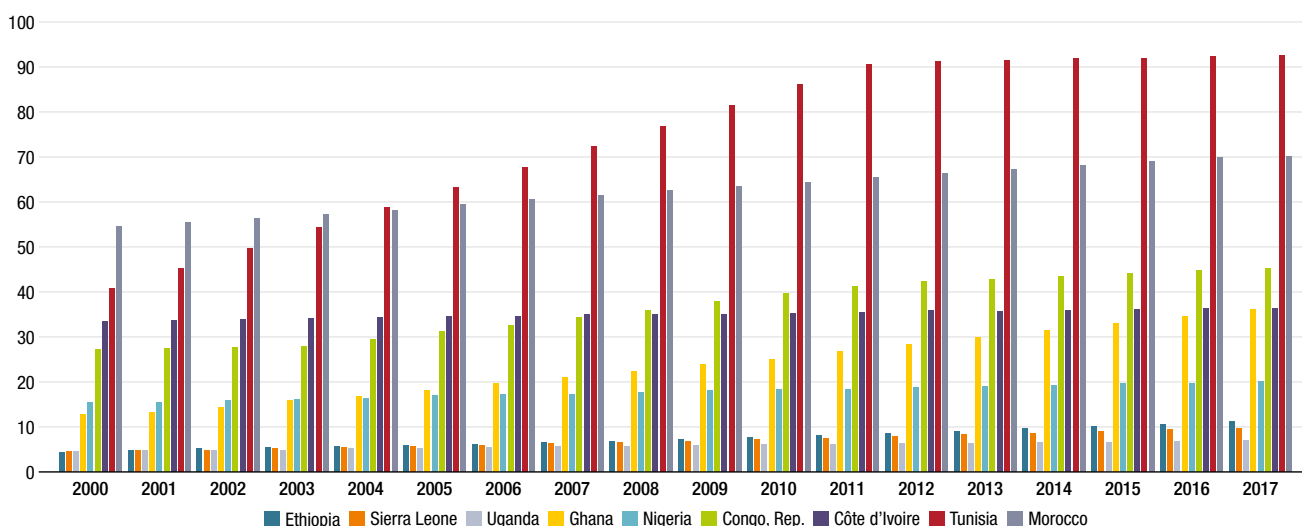
(% population)



Source: ADER

services as 77.5% by 2020 and the AfDB has a target of 83% in 2025. Africa has been close to meeting targets in the period 2016–2018 but has fallen away in 2019 based on the data available (Figure 18). At the level of RMCs, there is wide variation in the percentage of population using safely managed drinking water services, with some RMCs below 10% (Figure 19).

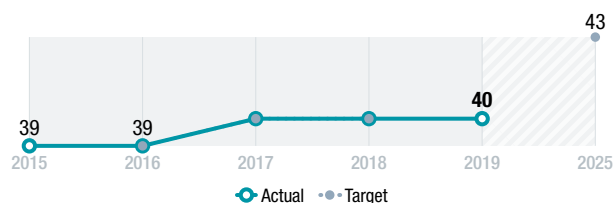
Figure 19: Percentage of population using safely managed drinking water services in select RMCs



Source: World Bank

Figure 20: Access to safely managed sanitation facilities relative to targets

(% population)



Source: ADER

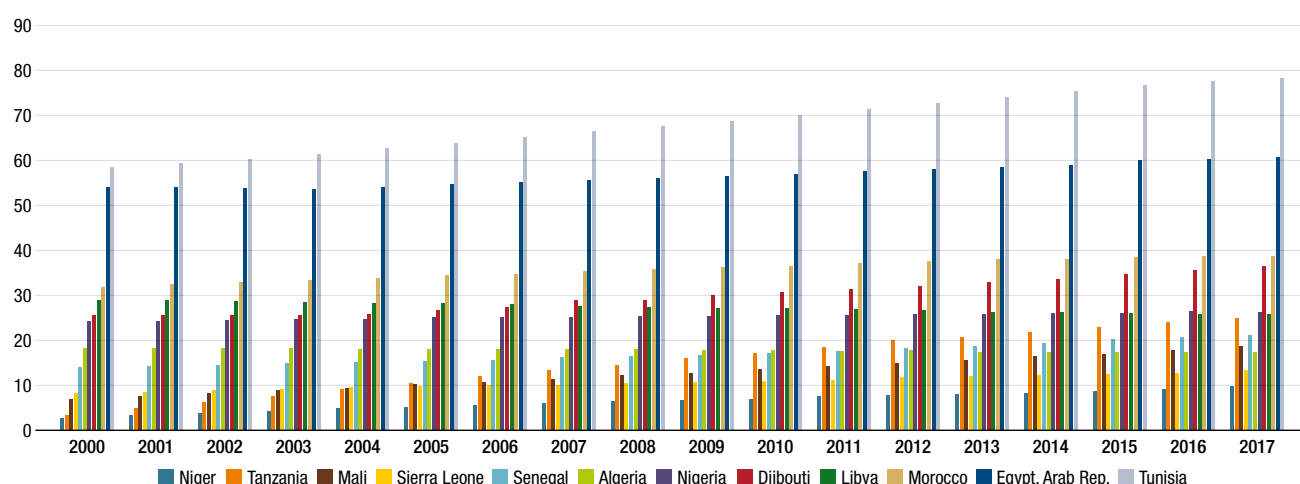
Figure 22: People with new or improved access to water and sanitation relative to targets

(Millions)



Source: ADER

Figure 21: Percentage of population using safely managed sanitation services in RMCs for which data is available



Source: World Bank

CCAP2 includes the expected percentage of population using safely managed sanitation facilities as 41% by 2020 and the AfDB has a target of 83% in 2025. Africa is generally meeting AfDB sanitation targets (Figure 20). At the level of RMCs, there is wide variation in the percentage of population using safely managed sanitation services, with some RMCs below 10% and even 5% (Figure 21).

With regards to AfDB's contribution to new and improved access to water and sanitation, the AfDB has exceeded its target of 3.6 million people in 2019, instead reaching 10.1 million people. While progress on water and sanitation across Africa is mixed, the AfDB is achieving its Africa-wide targets.

Water resilience

Climate change includes changes in precipitation as well as evapo-transpiration and, as such, resilience to water shocks is an important part of climate resilience. Using the resilience to water shocks index, Africa has been exceeding AfDB targets (Figure 23).

A practical example of enhanced climate resilience related to water is the Muvumba Multipurpose Water Resources Development Program from Rwanda, supported in the AfDB (Box 2).

Figure 23: Resilience to water shocks relative to targets

(Index from 0 (low) upwards)



Source: ADER

Box 2: Rwanda – Muvumba Multipurpose Water Resources Development Program

Rwanda's water resources are highly sensitive to climate variability and change and to environmental pressures given the highly seasonal and often unpredictable rainfall. Inadequate water storage already causes large and avoidable economic losses from droughts and constrains long-term growth. The insufficient water storage infrastructure base has resulted in sub-optimal utilization of water resources and foregone multiple benefits. Improved access to safely managed water, sanitation, and hygiene (WASH) services are an essential part of preventing and protecting human health during infectious disease outbreaks, including the current COVID-19 pandemic.

Moreover, due to the high dependency of the population on rain-fed agriculture, where more than 70% rely on subsistence farming, climate variability and change has also major impacts. Eastern and south-eastern parts of the country are most affected by seasonal droughts resulting in poor crop production. Endemic and unpredictable drought is the most catastrophic consequence of rainfall variability in the Eastern Province of Rwanda. In 2016, drought affected the Eastern Province (Kayanza, Kirehe, and Nyagatare districts), leaving 44,000 poor households (~225,000 people) food insecure. Seasonal droughts due to increasingly variable rainfall are expected to be prolonged, leading to reductions in streamflow which will cause problems in the Eastern province (Bugesera, Nyagatare, Gatsibo, Kayanza, Ngoma, and Kirehe), thereby putting additional constraints on safe and secure supply of water.

Against this background, the program strategy for managing rainfall variability includes the construction of river regulation and water storage infrastructure (adaptation) to smoothen intra-annual and spatial variations in rainfall. The objective of the program is to improve water, energy, food, and nutrition security by harnessing water resources for irrigation, domestic and livestock use, and hydropower generation, while ensuring sustainability of the resources and building resilience against climate change and variability. The first set of components under the program are: 1) Dam construction and hydropower plant installation; 2) Preparatory studies for downstream investments; and 3) Program management and institutional support.

Adaptation actions

Figure 24 shows most African countries have a national adaptation plan (NAP), law, or policy in place; however, this is a weak indicator. Having a plan, strategy, law, or policy is a step further than a statement of intent, but the design and application of these interventions are much more important.

Adaptation challenges and needs

The work done by the AfDB NDC Hub in its Analysis of Adaptation Components of Africa's NDCs provides a basis for understanding adaptation challenges and needs. For example, Table 3 addresses gaps and barriers identified in NDCs related to adaptation. Challenges and barriers include exogenous factors such as military and political crises, which when we

Figure 24: Status of adaptation planning in Africa and around the world

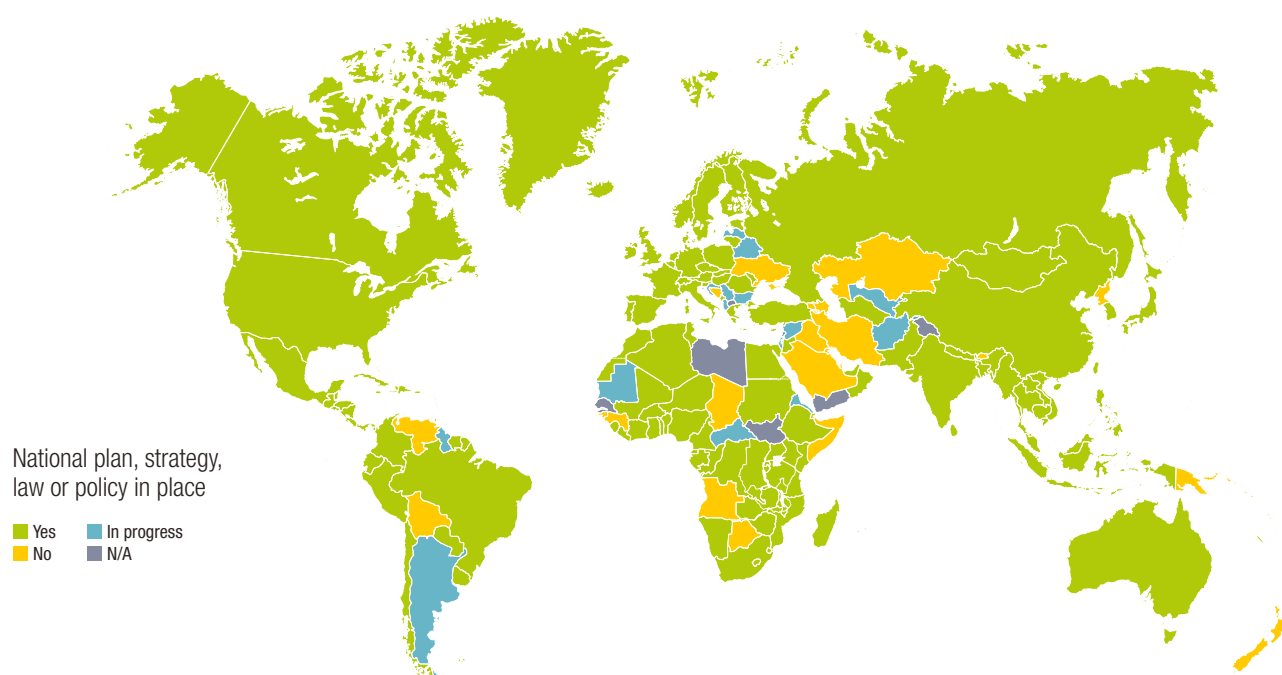


Table 3: Gaps and barriers to adaptation identified in NDCs

Country	Gaps and barriers to adaptation action, identified in NDCs
Central African Republic	Military and political crisis, lack of synergies between sectoral policies and institutions, illiteracy rate, absence of interregional socioeconomic equality, lack of financial resources, poor ability to absorb funds, extreme poverty
Chad	Poor understanding of the concept of climate change by the vast majority of society, illiteracy, lack of involvement from women, poor integration of climate change policies into national and sectorial policies, insufficient climate governance structure, poor livelihood capacity of communities, slow implementation of measures, failure to consider climate change in general state budget, insufficient international funding
Comoros	Shortcomings in institutional, political, strategic, and juridical levels
Côte d'Ivoire	Lack of policy integration of climate change into national and sectorial policies, low capacity of livelihoods (physical, national, social, institutional) in rural communities, limited understanding of the concept of climate change, illiteracy
Gabon	Need for undertaking conservation projects to implement the National Strategy for Coastal Adaptation
Guinea	Gap in financing, weak climate data and statistics, insufficient integration into national development planning and governmental institutions, non-respect for development plans of the territory
Lesotho	Specific barriers to adaptation are technological, economic/ financial, and institutional
Namibia	Inadequate human capacity, restricted access to technology, low public awareness, insufficient funding, lack of climate information and observation
Niger	Illiteracy, human resources, logistics, institutional conflicts
Nigeria	Food insecurity, poor access to energy, high unemployment, low economic development
São Tomé and Príncipe	Financial barriers, lack of skilled human resources, lack of access to modern technology
Seychelles	Barriers in the areas of capacity building, education, awareness, research and monitoring, technology, and legislation
Sierra Leone	Policy and regulatory weaknesses, difficulties in accessing commercial finance and technical capacity
Somalia	Major obstacles in reference to renewable energy are political, financial, and
institutional	
South Africa	Needs time to finance its efforts in NDCs
Uganda	Constraints due to its national circumstance as an LDC

Source: AfDB 2019

have 54 RMCs (i.e. over a quarter of all UN member states), will be an issue at some stage. Institutions are a key issue, including policies and the organizational capacity needed to support policies and adaptation interventions. Knowledge is another challenge, for example, on the issue of climate change or the interventions that are possible. The need for finance is another recurring theme. Political will is also mentioned.

In short, political will is needed along with institutions. Meanwhile, finance and other resources are needed for these institutions to have the capacity and means to develop policies and deliver interventions

effectively. Lastly, there is a need to ensure immediate development needs are met while also ensuring these interventions are truly climate resilient in the long term.

The Analysis of Adaptation Components of Africa's NDCs also found that a quarter of RMCs need support developing NDC implementation plans; while the vast majority of RMCs need support in developing information systems for monitoring, evaluation and reporting, building institutional structures and coordination mechanisms given the cross-cutting nature of adaptation, as well as support in mobilizing resources for NDC implementation.



Chapter 3: Mitigation and low-carbon development

Introduction

The industrial revolution marks the beginning of anthropogenic climate change. Today industrialization, related technologies, and land use changes drive GHG emissions and climate change. However, African countries are only at the beginning of their industrialization when it comes to manufacturing and agriculture as well as modern information services. Past development pathways and technologies are untenable given related GHG emissions. New pathways, technologies, and

business models are needed, so we can have low emissions development, fulfilling Pillar 2 of CCAP2.

Box 3 is an excerpt from the CCAP2 highlighting AfDB's approach towards implementing Pillar 2 on mitigation and low-carbon development. CCAP2 highlights the need to decouple economic growth from GHG emissions, so that our growth pathway is one of low-carbon development. While energy related emissions are relatively low across Africa, industrialization requires energy to grow and households need energy to improve quality. The choices made to Light Up and Power Africa

Box 3: Pillar 2 – Mitigation and low-carbon development

Most African countries have relatively low levels of GHG emissions from fossil fuels, while those from land use, land use change, and forestry dominate emission inventories. However, Africa still needs to decouple growth from emissions. Development and transfer of appropriate technologies will play an important role in harnessing opportunities for low-carbon development. The Bank will work with RMCs to invest in clean energy, sustainable management of natural resources, green infrastructure, and development and deployment of appropriate technologies.

Source: CCAP2

Table 4: Evaluation indicators for Pillar 2 on mitigation and low-carbon development

Theme	Results chains/Expected result	Performance indicator	Baseline (2015)	Expected (2020 or 2025)
African economies transitioning to low-carbon growth (mitigation)				
Mitigation	Low-carbon development	GHG emissions and human development in Africa		
		GHG emissions and development across Africa		
		African GHG emissions by sector		
		African GHG emissions targets		
		Number of African NDCs addressing SDG goals		
		Number of African NDCs addressing SDG targets		
Light up and power Africa	Increased use of renewable energy and clean technology Increased amount of low-carbon energy generated and fed into national grids Energy efficiency	Share of population with access to clean cooking solutions	32	63
		Percentage of population by AfDB region with access to clean fuels and technologies for cooking		
		Installed renewable capacity (GW)		
		New renewable power capacity installed (MW)		
		New or improved power transmission lines (km)		
		New or improved distribution lines (km)		
		Electricity losses through transmission, distribution, and collection (%)		
		Emissions reduction in energy (thousand tons CO ₂)		
Integrate Africa	Other	Transport roads constructed, rehabilitated, or maintained (km)		

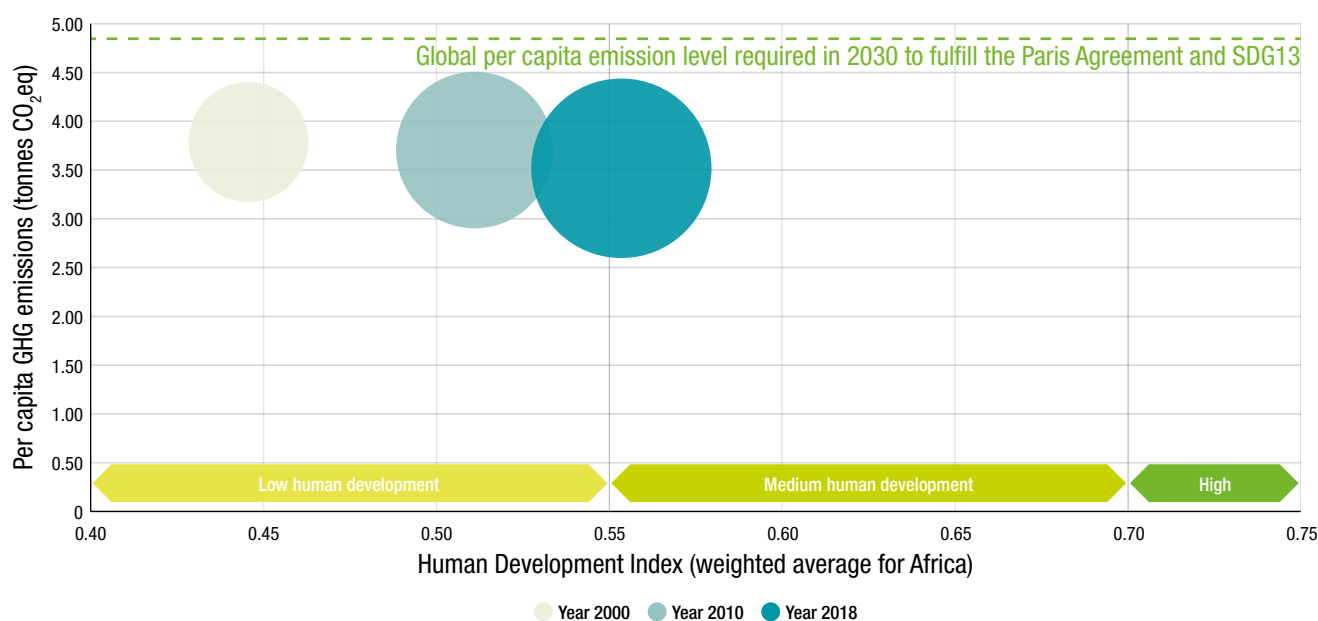
will have a strong bearing on whether we have low-carbon development. Likewise approaches related to the integration of Africa can also have a bearing on whether we have high- or low-carbon development, for example, when it comes to transport, including the transportation of natural resources. With these factors in mind, Table 3 presents the indicators used to evaluate Pillar 2 regarding mitigation and low-carbon development.

GHG emissions and development

The mitigation of GHG emissions is a core part of the global response to climate change. Current progress mitigating GHG emissions are measured through GHG emissions inventories, which are prepared by many countries. When inventories are not available

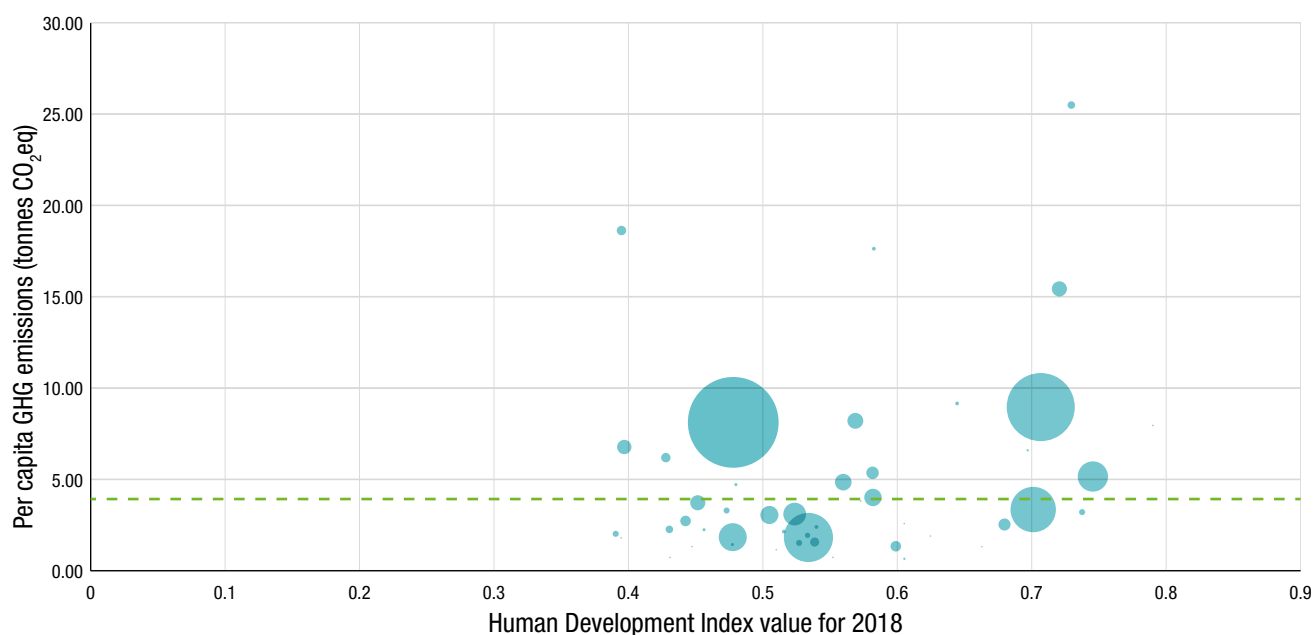
Figure 25: Plotting GHG emissions and development progress

(Weighted average for Africa)

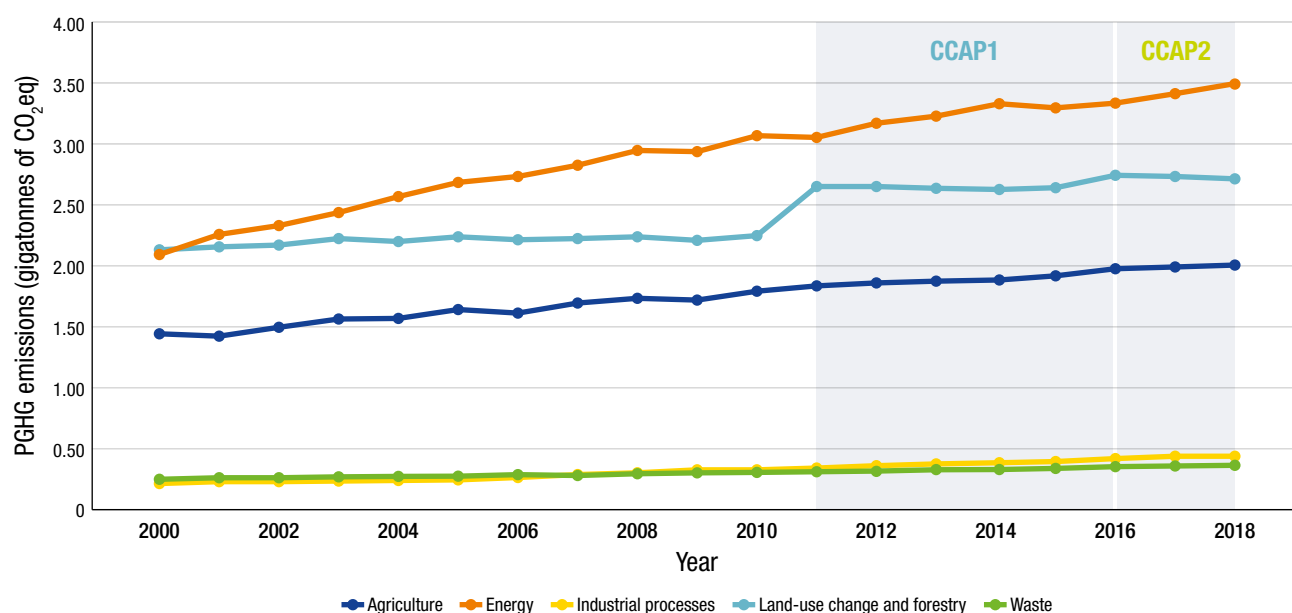


Source: UNDP HDI, Climate Watch

Figure 26: GHG emissions and development across Africa



Source: UNDP HDI, Climate Watch

Figure 27: African GHG emissions by sector

Source: Climate Watch data

for a country, data is estimated by international organizations and research organizations. As such, emissions estimates are available for most African countries and include energy-related emissions, industrial emissions, transport-related emissions, as well as AFOLU.

Figure 25 shows per capita GHG emissions have been falling while human development levels have generally been increasing across Africa. However, the size of the bubbles in Figure 25 show total GHG emissions have increased from 2000 through to 2018. Regardless, per capita GHG emissions for Africa as a whole, are lower than global per capita levels required in 2030 to fulfil SDG 13 and be on track to fulfilling the Paris Agreement. At the same time, there is a need to fulfil other SDGs and increase levels of human development.

Figure 26 has the same axes as Figure 25 but presents information for RMCs, highlighting the range of per capita GHG emissions and development

levels across Africa. Some countries have per capita emissions greater than the level required to fulfil SDG 13 in 2030, while others are well below this benchmark.

Figure 27 shows time series data for Africa's GHG emissions, highlighting which sectors the majority of GHG emissions are coming from. Energy accounts for the largest single share of GHG emissions (orange line), followed by land use change and forestry (light blue) and agriculture (dark blue). However, collectively AFOLU makes up the majority of GHG emissions. Industrial processes and waste each make up a small proportion of Africa's GHG emissions. Importantly, time series data shows a trend of increasing GHG emissions over time, including over CCAP1 and CCAP2. However, in good news, land use changes-related emissions dropped at the start of the CCAP2 period.

Nationally Determined Contributions (NDCs)

Fifty-three African countries have submitted Indicative Nationally Determined Contributions (INDCs) or NDCs. Only Libya has not submitted any document, while South Sudan has only submitted its INDC. While NDCs are “nationally determined,” in many cases they have been prepared with international support and the use of consultants. Regardless, NDCs are signed off and submitted by RMCs to the United Nations Framework Convention on Climate Change (UNFCCC). The analysis of NDCs below assumes NDCs are representative of African countries and their national interests.

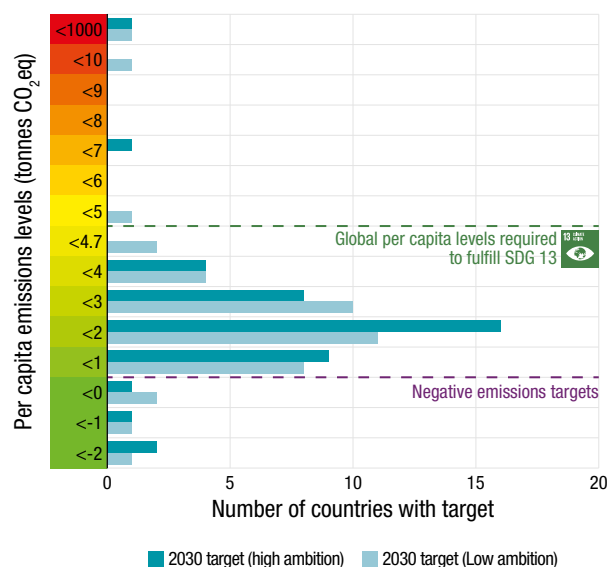
For mitigation, key metrics include unconditional and conditional mitigation targets. Unconditional mitigation targets are these the country commits to regardless of what other countries do. Conditional targets generally rely on support from other countries, for example through provision of finance and clean technology by developed countries.

Mitigation targets are presented for 2030 in Figure 28 in terms of per capita GHG emissions levels.

Thus, based on “Pledge Pipeline” data compiled by the United Nations Environment Programme (Fenhann 2021), there are 42 quantifiable high ambition mitigation targets for the year 2030 from African countries and another 41 low ambition mitigation targets (including conditional NDCs). To allow meaningful comparison, these mitigation targets have been converted into per capita emissions figures using United Nations Population Department medium population projections for the year 2030. This allows us to compare African mitigation targets with global per capita emissions level required to have a 50% chance of limiting global warming to below 2°C from pre-industrial times (Fenhann 2021).

Figure 28 presents per capita GHG emissions targets in terms of tonnes of CO₂ equivalent emissions per person. For the world to have a 50% chance of limiting global warming to below 2°C, global per capita emissions need to be around 4.7 tonnes of CO₂eq per person in year 2030. The majority of African countries have GHG emissions targets for year 2030 below this level. Four countries even have negative GHG emissions targets. Note: negative emissions are important, as the removal of atmospheric GHG is necessary in most scenarios that limit global warming below 2°C and all scenarios that limit global warming to 1.5°C (UNEP GAP Report, IPCC 2018).

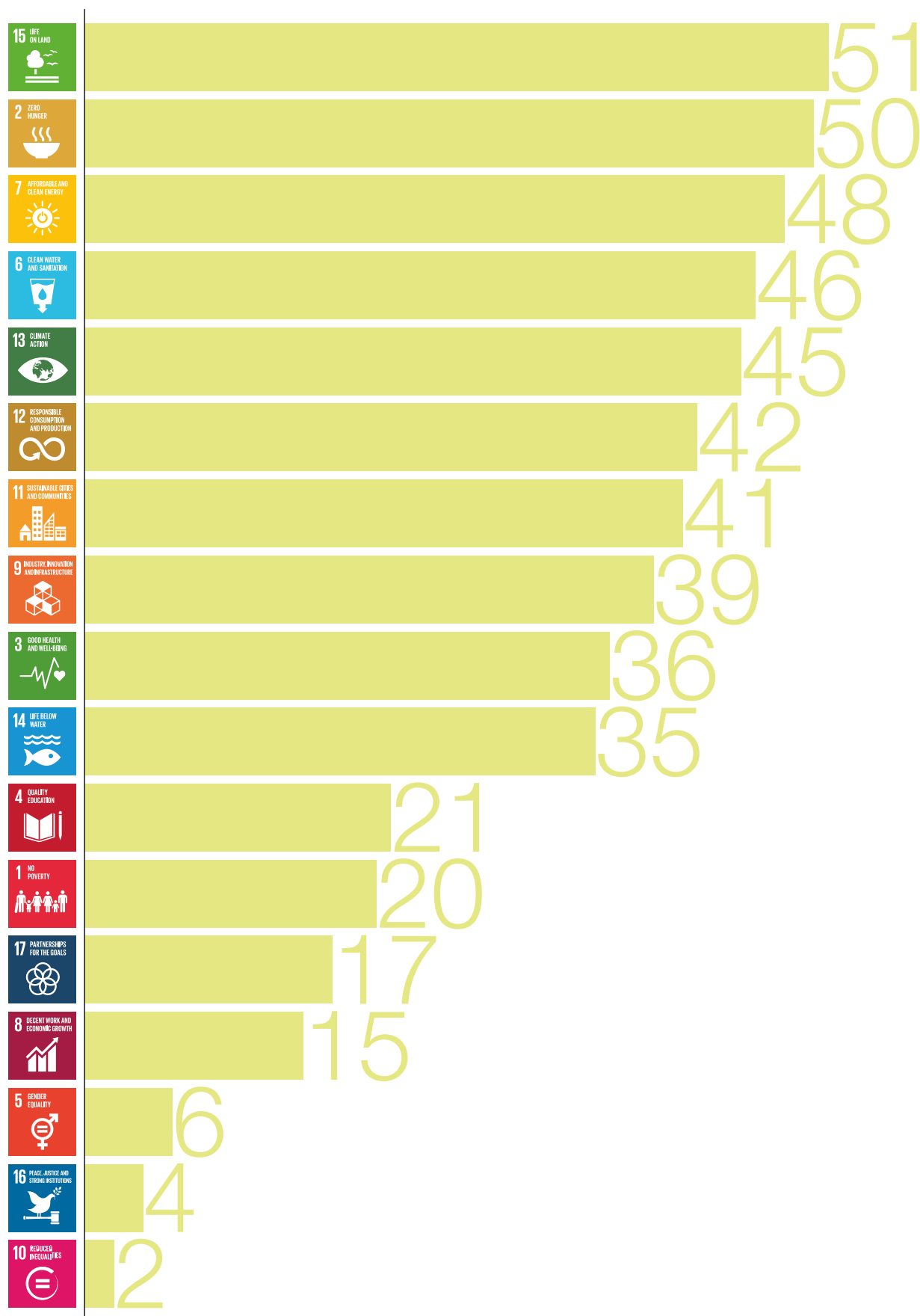
Figure 28: African GHG emissions targets relative to global levels of emissions required to fulfil the Paris Agreement and SDG13



Source: Climate Watch

In many cases, high ambition targets are from conditional NDCs and require international support if these are to be fulfilled. Meanwhile, many lower ambition targets are unconditional NDCs that will be made by the country using its own resources. With regards to the finance required to fulfil conditional NDCs, see Chapter 4. In many cases billions of US dollars are required.

Like with adaptation (Figure 9 in Chapter 2), when faced with the need to act on climate change, it may be tempting to try and identify priority sectors for mitigation interventions. However, Figure 29 and Figure 30 show mitigation efforts needed to address a range of cross-cutting issues and sectors, although based on Figure 27 shows AFOLU and energy-related activities are where the greatest potential for reductions exists. Figure 29 shows that climate change is related to each of the SDGs, with some SDGs relevant to more countries and their NDCs than others. Meanwhile, Figure 30 shows the targets and actions that can be taken to address climate change and other issues vary greatly. Understanding country context is very important, whilst the identification of priority interventions should only serve as a guide to climate actions.

Figure 29: The number of African NDCs addressing each SDG

Source: Climate Watch

Figure 30: The 25 most common SDG targets addressed in African NDCs

Lighting up and powering Africa

Lighting Up and Powering Africa comprises a full range of elements, including cooking. Clean cooking helps mitigate GHG emissions with the co-benefit of improving people's quality of life by reducing indoor pollution. The percentage of population across Africa with access to clean cooking fuels and technologies for cooking varies over the period 2015–2019. Based on current trends, it appears not to be on track for the CCAP2 target of 60% in 2020 nor the AfDB-wide target of 97% in 2025 (Figure 31). Across Africa, there are wide regional variations in the percentage of population with access to clean cooking fuels and technologies (Figure 32), with North Africa having over 90% access while East Africa, West Africa, and Central Africa have less than 10% access.

Electricity is another important part of modern life, including electricity for lighting, communication, as well as more energy intensive applications such as refrigeration, air conditioning and heating, or the running of machines and industrial processes. Given that energy infrastructure is long lasting, installation

of new electricity generation capacity either locks in, or locks out, GHG emissions. Hence the installation of renewable energy capacity across Africa is an important part of mitigation and low-carbon development. As noted in chapter 3, the installation of high carbon electricity generation technologies (e.g. coal, oil, or gas power plants) is a transition risk with the danger of becoming stranded assets. Fortunately, the installation of renewable energy electricity generation capacity is increasing but has failed to meet AfDB's targets (Figure 33) even with renewable energy becoming ever cheaper to install.

Figure 33: Installed renewable energy capacity relative to targets

(GW)



Source: ADER

Figure 31: Share of population with access to clean cooking solutions including targets

(% population)



Source: ADER

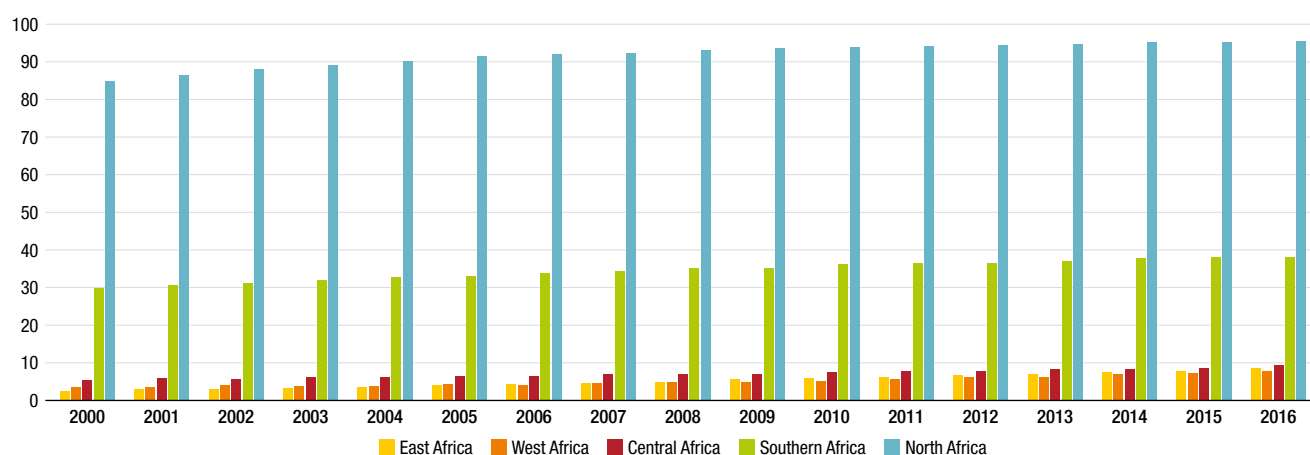
Figure 34: New renewable power capacity installed relative to targets

(MW)



Source: ADER

Figure 32: Percentage of population by AfDB region with access to clean fuels and technologies for cooking



Source: World Bank

Figure 35: New of improved power transmission lines relative to targets

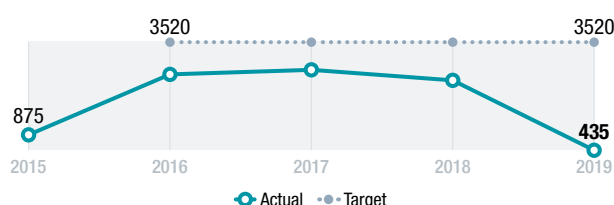
(Km)



Source: ADER

Figure 36: New or improved power distribution lines relative to targets

(Km)



Source: ADER

The AfDB is directly supporting the installation of new renewable electricity generation capacity (Figure 34). While these new installations are only a fraction of renewable energy capacity installed, they help bring renewable energy to new areas and help RMCs get experience installing and managing renewable energy technologies. However, AfDB's contribution to renewable energy capacity is notably short of target.

Energy efficiency is another important area where GHG emissions can be mitigated. This includes

Figure 37: Percentage of electricity lost through transmission, distribution and collection relative to targets



Source: ADER

Figure 38: Greenhouse gas emissions reduction from energy relative to targets

(Thousand tons CO₂)



Source: ADER

energy efficiency at the household level, in industrial activities, agriculture, as well as when it comes to the transmission and distribution of electricity. Hence the installation of new or improved transmission lines (Figure 35) and distribution lines (Figure 36) are important. The AfDB has contributed to the installation of hundreds of kilometers of lines, but the AfDB has not yet met its targets for both transmission lines (Figure 35) and distribution lines (Figure 36). Likewise, when it comes to electricity losses through transmission, distribution, and collection, Africa is far

Box 4: Egypt – Electricity and Green Growth Support Program (EGGSP)

The main goal of the program is to promote a sustainable, competitive, and diversified electricity sector for ensuring security of supply and supporting climate change mitigation and green growth. The expected outcomes of the program are: i) rationalization of the electricity tariff; ii) enhanced financial sustainability of the electricity sector; iii) improved corporate governance and competitiveness of key electricity sector institutions; iv) enhanced security of energy supply through promotion of renewable energy and energy efficiency for fostering climate change mitigation and green growth; and v) stronger engagement of the private sector for better service delivery.

The EGGSP aims to support the government in restructuring the electricity sector to further enhance its financial sustainability and improve its governance support policy actions. This can further stimulate the market for small-scale solar photovoltaics (PV) and elevating energy efficiency. The revision widens the market of the net metering scheme by allowing a new business model in which developers of small-scale PV plants do not necessarily have to be i) the energy consumers; ii) approval Sustainable Energy Action Plan, including the second National Energy Efficiency Action Plan; iii) formation of the Steering Committee for Energy Efficiency to promoting and coordinating EE at the national level; and iv) approval 2019 energy efficiency action plans.

The program aims to:

- Promoting small-scale solar PV through increasing the incentives for small-scale solar PV (below 20 MW);
- Elevating energy efficiency as an integral part of the country's sustainable development agenda;
- Accelerating the implementation of Demand Side Management programs.

An action plan for sustainable energy has already been adopted and institutionalized Electricity distribution companies develop EE action plans in line with the Electricity Law of 2015.

below AfDB targets (Figure 37) with inefficient losses. The AfDB has fallen well short of its own targets for emissions reductions in energy (Figure 38).

As can be seen from the data above there are many considerations when it comes to electrifying and lighting up Africa. Reflecting this is the design of the Electricity and Green Growth Support Program (EGGSP) in Egypt (Box 4).

Integrating Africa

A lot of energy is used in transport, much of which is currently reliant on refined petroleum products, diesel, or gasoline. While there are some electric rail systems, electrification of road transport is yet to take off across Africa. As such, roads constructed, rehabilitated, or maintained can induce road demand and transport-related GHG emissions. However, as noted earlier in the Chapter, Africa has low per capita GHG emissions. Furthermore, transport is essential to support the

Figure 39: Transport-roads constructed, rehabilitated, or maintained



Source: ADER

movement of goods, services, and people; and as such is a very important part of development and access to public health and trade. Hence, while the AfDB has missed its roads targets (Figure 39), the extent to which roads can be coupled with low-carbon transport options will be an important strategic consideration for the AfDB going forward.



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Chapter 4: Climate finance

Introduction

The Paris Agreement has the aim of “making finance flows consistent with a pathway towards low GHG emissions and climate-resilient development” (Article 2.1.c). This is not just climate finance, but all financial flows. The activities, technologies, and practices supported by the AfDB and other financial institutions will have bearing on whether low-carbon development is achieved especially when it comes to industrialization, food and agriculture, infrastructure, integration, as well as lighting up and powering Africa. As such, mobilizing financial resources to finance climate action constitutes Pillar 3 of CCAP2.

Box 5 is an excerpt from CCAP2 highlighting AfDB's approach towards implementing and fulfilling Pillar 3 on climate finance. It focuses on mobilizing finance to address climate change, including innovations such as mobilising more private finance, to support climate

change ambitions. The extent to which climate finance is able to meet climate ambitions is important, and indicators used to evaluate climate finance reflect both the ambition in CCAP2 and the need for finance (Table 5).

AfDB funds

The AfDB has 8 internal funds that it manages (Table 6) and 4 external funds that RMCs can apply for through the AfDB (Table 7). Each fund has a specific purpose and process for funds to be accessed (see descriptions in Table 6 and Table 7).

In addition to these funds, the AfDB has a set of initiatives designed to help RMCs mobilize finance for climate projects. These initiatives include: the Africa NDC Hub, which helps RMCs develop and

Box 5: Pillar 3 – Mobilizing financial resources to finance climate action and the CCAP2

Under the CCAP2, the Bank has committed to allocate 40% of approvals per year as climate finance by 2020. In addition, the Bank will mobilize climate finance from external sources. The Bank will also scale up adaptation finance from 29% in 2015 to reach parity with mitigation finance; and will prioritize mobilization of adaptation finance from climate funds. In line with the High 5s goal to provide universal energy access to the continent's people, the highest investment scale-up will be in clean energy technologies.

The majority of Bank-sourced climate finance comes from the African Development Bank (ADB) and African Development Fund (ADF) financing windows, external climate funds for which the Bank is an implementing entity, and from internal trust funds hosted at the Bank. In light of its ambitious target, the Bank will scale up climate finance from current sources. However, past experience and current trends indicate that the anticipated level of scale-up will require going beyond traditional funding mechanisms to embrace innovative means of mobilizing finance. As private financial flows have risen from 63% of total external resources in 2002–2006 to over 70% in 2010–2014 given attractive regional growth, the Bank will invest its resources strategically to attract and leverage increasing private sector investment.

Source: CCAP2

Table 5: Evaluation indicators for Pillar 3 on mobilizing financial resources to finance climate action and the CCAP2

Theme	Results chains/Expected result	Performance indicator	Baseline (2015)	Expected (2020 or 2025)
Climate finance	Increased mobilization of climate finance	Climate-related Bank commitments	15	40
	Increased balance of climate finance	Proportion of mitigation and adaptation finance		50:50
Access	Access to finance	Access to finance (% of population)		
Sources		External climate finance flows		
		Percentage of GDP that is adaptation finance to come from domestic sources		
Needs	Finance needed	Finance required to fulfil NDCs		
		Cost of adaptation by country		

Table 6: AfDB internal funds

Name	Description
Internal funds	
Africa Climate Change Fund (ACCF)	A multi-donor fund managed by the Bank with contributions to date from Germany, Italy, and Flanders, the ACCF supports African countries to scale up their access to climate finance and to enable a transition towards low-carbon climate-resilient development in line with their NDCs.
African Climate Technology Center (ACTC)	ACTC is a project financed by the Global Environment Facility (GEF) to support sub-Saharan African countries in scaling up deployment of low-carbon and climate-resilient technologies for climate change mitigation and adaptation. This is delivered by: (i) Enhancing networking and knowledge dissemination with respect to climate technology transfer and financing; (ii) Enabling the scaling-up of technology transfer through policy, institutional and organizational reforms of the country, and regional enabling environments; and (iii) Integrating climate change technologies into investment programs and projects.
Africa Water Facility (AWF)	The AWF is an initiative of the African Ministers' Council on Water (AMCOW) hosted by the AfDB, established in 2004, to help African countries achieve the objectives of the Africa Water Vision 2025.
Agriculture Fast Track Fund (AFTF)	The AFTF is a multi-donor trust fund managed by the AfDB with funding support from the United States Agency for International Development (USAID), the Danish International Development Agency (DANIDA), and Swedish International Development Cooperation Agency (SIDA). The goal of the AFTF is to unlock financing for agriculture infrastructure projects by defraying the initial preparation costs that investment sponsors are unable to shoulder alone.
ClimDev Special Fund (CDSF)	The CDSF is a multi-donor trust fund established to support African countries, institutions, and communities to build resilience to the impacts of climate change and climate variability with three areas of focus: (i) Generating wide-scale dissemination and use of reliable and high-quality climate information for development in Africa; (ii) Enhancing the capacity of policymakers and policy support institutions to generate quality analysis and evidence on climate change and its implications for Africa for use in development planning; and (iii) Implementing pilot adaptation practices that demonstrate the value of mainstreaming climate information in development planning, and creating awareness to inform decision-making.
Rural Water Supply and Sanitation Initiative (RWSSI)	RWSSI is an Africa-wide initiative hosted by the AfDB, and is focused on the regional response to Africa's rural water supply and sanitation crisis. The initiative is funded through contributions from the Bank, bilateral and multilateral agencies, African governments and communities, and the RWSSI Trust Fund. The overall objective is to accelerate access to drinking water supply and sanitation in rural Africa in order to attain the SDGs and the African Water Vision targets.
Sustainable Energy Fund for Africa (SEFA)	The Bank-hosted multi-donor fund with funding contributions to date from Denmark, United States of America, United Kingdom, and Italy promotes renewable energy and energy efficiency through private sector-driven small-to-medium-sized projects necessary to stimulate the continent's transition to more inclusive and green growth.
Urban Municipal Development Fund (UMDF)	Launched in April 2019, the UMDF is a multi-donor trust fund with contributions from Nordic Development Fund (NDF), Walloon Export and Foreign Investment Agency (AWEX), and State Secretariat for Economic Affairs (SECO). The Fund is designed to support African cities and municipalities to improve their resilience and better manage urban growth through planning, governance, and quality of basic services. The UMDF seeks to enhance technical assistance, capacity building in the field of urban planning, project preparation, and governance to strengthen the viability and competitiveness of African cities to reach sustainable economic and social development.

Source: AfDB Climate Finance Matters 2019

Table 7: AfDB external funds

Name	Description
External funds	
Adaptation Fund (AF)	The Bank is an accredited entity to the AF to help increase African countries' capacity to adapt to the negative impacts of climate change and decrease their level of vulnerability to these effects.
Climate Investment Fund (CIF)	Established in 2008, the USD 8.3 billion CIF provides financial support to middle-income and low-income countries in low-carbon technologies and climate-resilient development. The CIF provides new and additional financing to complement existing bilateral and multilateral financing mechanisms in order to demonstrate and deploy transformational actions to mitigate and adapt to climate change.
Global Environment Facility (GEF)	The GEF is a multi-donor trust fund which finances actions to address critical threats to the global environment. It provides grants and some concessional funding to cover the "incremental" or additional costs associated with transforming a project with national benefits into one with global environmental benefits.
Green Climate Fund (GCF)	The GCF was established in 2010 as an operating entity of the financial mechanism of the United Nations Framework Convention on Climate Change (UNFCCC). It became operational in 2015. The main objective of the GCF is to promote a paradigm shift towards low-emission and climate-resilient development pathways in developing countries. The Bank is an accredited entity of the GCF through which the Fund disburses its finances to recipient countries. Funding decisions are guided by six investment criteria reflecting the key GCF features.

Source: AfDB Climate Finance Matters 2019

implement NDCs; the African Financial Alliance on Climate Change (AFAC), which raises awareness in the financial sector of the need for climate-resilient low-carbon investments; and the Adaptation Benefit Mechanism (ABM), which promotes investments in adaptation by the private sector.

AfDB's climate finance

Given that all finance eventually needs to align with low-carbon climate-resilient development, the AfDB's goal of having 40% of all projects tagged as being climate finance by 2020 is a very important step towards fulfilling the Paris Agreement. In fact, the AfDB had been meeting or exceeding the target until the COVID-19 pandemic impacted the AfDB and its priorities in 2020. The percentage of projects tagged as being climate finance peaked at 35% in 2019 before dropping to 34% in 2020, missing the 40% target (Figure 40).

The AfDB has also achieved the target of parity between adaptation and mitigation finance, which is a rare phenomenon. In fact, the AfDB exceeded parity, with adaptation finance accounting for 63% of climate

Figure 40: Climate-related Bank commitments relative to targets



Source: ADER

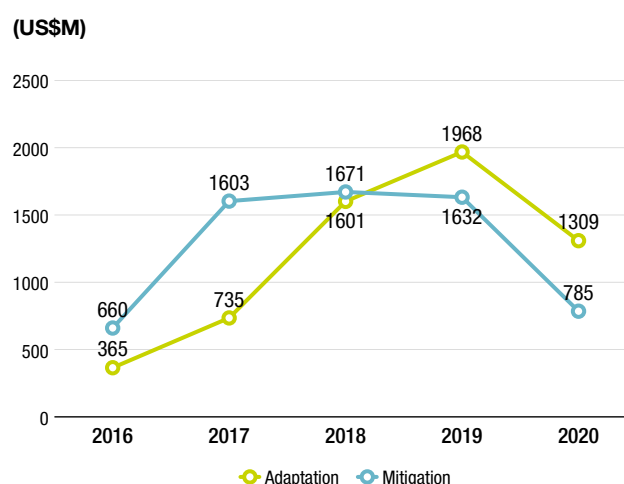
Table 8: Proportion of mitigation and adaptation finance

Type of project	2017	2018	2019	2020
Mitigation	67	51	56	37
Adaptation	33	49	44	63

Source: AfDB

finance in 2020 (Table 8, Figure 41). Investment in agriculture, water, sanitation, and the environment are the major drivers of adaptation finance.

Figure 41: Mitigation and adaptation finance



Source: AfDB

With regards to adaptation investments, the AfDB is developing the ABM (Box 6).

Box 6: Adaptation Benefits Mechanism

Under a mandate to develop new and innovative climate finance models, PECC1 is developing the Adaptation Benefits Mechanism (ABM). The ABM is a non-market mechanism that certifies adaptation benefits using similar modalities and procedures as the Clean Development Mechanism of the Kyoto Protocol, but with some important differences. Certified Adaptation Benefits (CABs) are non-fungible and non-tradable, and can be purchased and surrendered by countries, companies, or entities that have made a commitment to finance climate change adaptation. Additional payments from purchasers of CABs, who will sign a CAB Purchase Agreement, will make adaptation projects bankable. CABs are project- and technology-specific and the price for a CAB from a specific project depends on: a) the magnitude of the financial gap that is stopping the project from moving forward; and b) the number of CABs that can be generated. This pricing mechanism ensures the concept of minimum concessionality, i.e., that the project developers get enough finance to make the project viable. After the finance has been delivered, no further ABM funds are necessary.

With support from the CIF, the Bank's admin budget, the ACCF, the GEF-funded African Climate Technology and Finance Center and Network (ACTFCN), and in-kind or low-cost contributions from some members and their employers, PECC1 hosts the ABM Secretariat and the ABM Executive Committee. The Bank has recently formed a Roster of Experts to work on ABM Methodology approval and two projects are now being piloted to address climate-resilient cocoa production in Cote d'Ivoire and temporary flood defences in Lagos.

The development of the ABM has been made possible because PECC1 has a mandate to explore new financing mechanisms. The ABM is now a core element of the Innovative Financial Initiatives pillar of the African Adaptation Acceleration Programme, a partnership between AfDB and the Global Centre on Adaptation (GCA) to mobilize USD 25 billion for adaptation in Africa by 2025.

Finance needed

While it is difficult to estimate the total financial needs for development to be climate resilient and low carbon, NDCs include unconditional and conditional finance estimates (Table 9). As mentioned before, unconditional finance is the finance pledged by countries themselves towards adaptation or mitigation. Conditional finance is the finance needed from outside the country, for conditional NDCs to

be acted upon and implemented (hence they are conditional on finance or other forms of support). From Table 9, even if African countries are making significant domestic contributions to the global response, it is going to take a lot more finance for RMCs to fulfil both conditional and unconditional parts of their NDCs, although long-term finance of USD 100 billion per year under the Copenhagen Accord could cover most of what is required if it were forthcoming.

Table 9: Finance required to fulfil NDCs

Country	Finance required	
	Unconditional part of the NDC	Conditional part of the NDC
Benin	\$2.13524 billion	\$3.90709 billion
Burkina Faso ¹	\$1.084919161 billion	\$756.03441 million
Central African Republic	\$0.226 billion	\$2.022 billion
Chad ²	\$0.523302394 billion	\$6.540166749 billion
Djibouti	70% of total costs	\$1.65 billion
Eritrea	\$0.393 billion	\$0.693 billion
Ethiopia ³
Ghana ⁴
Guinea	..	\$6.5 billion
Guinea-Bissau	..	\$200 million by 2020 \$500 million between 2020 and 2030
Kenya ⁵
Lesotho ⁶	\$1.2 billion	\$0.6 billion
Madagascar	4% from national financial sources	..
Mali	\$5.202 billion	\$34.68 billion
Mauritania	\$1.1 Billion	\$8.2 billion
Morocco	\$26 billion	\$24 billion
Niger	\$0.830 billion	\$6.230 billion
Sao Tome and Principe ⁷	..	\$59 million
Senegal	\$1.8 billion	\$5 billion
Seychelles	..	\$0.309 billion
Sudan ⁸
Tunisia	Around 10% of the total mitigation investment needs: \$1.75 billion	Around 90% of the total mitigation investment need: \$15.75 billion
Zambia	..	\$35 billion
Minimum finance required	\$42.2 billion	\$152.1 billion
Other conditions		
1 Conditionality definition Unconditional: Financing that has been acquired or is being acquired Conditional: The mitigation projects that have been developed and/or are being developed, but without any acquired financing		
2 Programs similar to CDM and REDD+ for carbon market mechanisms		
3 An ambitious multilateral agreement		
4 Intends to generate compliance grade emission reductions units (market-based) from actions in the waste and energy sectors and REDD+.		
5 “In the event that Kenya's enhanced NDC Target is exceeded, Kenya intends to use the both market and non-market provisions mechanisms provisions of Article 6 of the Paris Agreement, based on domestic legislation developed.”		
6 Accessing new sources of finance and increased support compared to what was received in previous years to be mobilized through new financial mechanisms such as the Green Climate Fund		
7 Establishing strong incentives to harness the power of private sector through market mechanisms Develop programs based on the use of Emission Reduction Certificates (ERCs) generated by CDM projects and programs		
8 The full implementation of developed countries' commitments regarding international support Fulfilment of the 2°C goal		

Table 10: Annual cost of Adaptation by country

No.	Country	Annual adaptation cost (million USD)	No.	Country	Annual adaptation cost (million USD)
1	Benin	55.946	16	Mauritius	40
2	Burkina Faso	39.008	17	Morocco	350
3	Cameroon	18.150	18	Namibia	226
4	CAR	15.539	19	Niger	16.070
5	Chad	141.6	20	Seychelles	2.950
6	Comoros	3	21	Sierra Leone	9
7	Djibouti	8.330	22	Somalia	1.325
8	Egypt	730.4	23	Tanzania	121.5
9	Ghana	127.9	24	Togo	15.4
10	Guinea	6.7	25	Sudan	12
11	Guinea Bissau	420	26	Uganda	24
12	Kenya	400	27	Zambia	200
13	Madagascar	287.130	28	Zimbabwe	350
14	Mali	136.860			
15	Mauritania	93.774			
			Total cost		3.853 billion

Source: AfDB Analysis for Adaptation Components of Africa's Nationally Determined Contributions (NDCs)

Table 11: Percentage of GDP that is adaptation finance to come from domestic sources

Country	NDC finance from domestic sources (US\$/annum until 2030)	GDP (2017, US\$)	Adaptation share of GDP (%)
Benin	14.4 million	9.3 billion	6.5
CAR	1.9 million	1.9 billion	1.0
Chad	27.9 million	9.9 billion	3.5
Comoros	300 million	0.6 billion	2.2
Ghana	42.1 million	47.3 billion	1.1
Madagascar	11.4 million	11.5 billion	1.0
Niger	3.5 million	8.1 billion	2.4
Senegal	18.3 million	16.4 billion	8.9
Zimbabwe	87.2 million	17.9 billion	2.0
Total	506.6 million		

Source: AfDB Analysis for Adaptation Components of Africa's Nationally Determined Contributions (NDCs)

Table 9 provides total finance needed to support NDCs, but the AfDB has worked out the annual cost of adaptation required by RMCs to fulfil the adaptation component of their NDCs. The results are presented in Table 10, and totals to a little over USD 3 per person in Africa each year, with a total of USD 3.853 billion per annum.

While the AfDB and other financial institutions each have a role, and bring finance to projects that would not otherwise be able to go ahead, it is important to note RMCs invest their own tax revenues into

addressing climate change. Furthermore, individuals and groups from within RMCs also make investments that contribute to climate resilience and low-carbon development. Table 11 highlights the percentage of GDP that is adaptation finance coming from domestic sources for select RMCs.

Mobilising private sector investment in climate-resilient low-carbon development is an important role for the AfDB. This includes the Private Sector Investment Initiative for African NDCs (Box 7).

Box 7: Private Sector Investment Initiative for African NDCs: A Case Study

The climate actions put forward by African countries in their Nationally Determined Contributions (NDCs) will require USD 3 trillion of investments by 2030. African national governments alone cannot meet this requirement given their development challenges. Mobilizing resources from the private sector to finance climate action is necessary to close the climate financing gap. In Africa, 75% of the finance required to fund climate actions outlined in African NDCs is expected to come from the private sector through green investments. However, private sector participation in climate action on the continent is lagging. Recognizing the need to support private sector participation in NDC implementation through green investments, the African Development Bank Group (AfDB) launched the *Private Sector Investment Initiative for African NDCs*. The Fund for African Private Sector Assistance (FAPA) funded this initiative as one of the critical interventions under the Africa NDC Hub – a resource pool for African countries to fund interventions to fulfil obligations related to the Paris Agreement. The *Private Sector Investment Initiative for African NDCs* had several crucial outputs.

Under the initiative, the Bank developed two climate change mainstreaming web applications for the private sector. The first is the *Climate Risk Screening and Opportunity Toolkit*, a web-based application that enables financial institutions and the private sector, particularly small- and medium-sized enterprises (SMEs), to screen their businesses and investments for climate risks and identify climate investment opportunities. It ensures that the private sector builds climate-resilient businesses and mobilizes its resources towards NDC-aligned investment opportunities. The second is the Business Carbon Reporting Tool. This tool enables the private sector to track and report carbon emissions in its business and investment operations – an increasingly important reporting requirement to mobilize climate finance. The Business Carbon Reporting Tool also helps the private sector to think through emission reduction strategies for their business operations.

In addition to specialized capacity building conducted for over 400 participants from over 40 financial institutions and other private sector players under the initiative, the Bank is launching a new on-demand massive open online course (MOOC) program called the *Sustainability Initiative*. The Sustainability Initiative is an online learning management platform being developed under the Initiative to host free and certified specialized training on climate change, climate finance, and business development. The platform will bridge the knowledge and skills gap required for climate change innovation and investments by the private sector in Africa.

Finally, the Bank developed six knowledge products under the Initiative – six scoping reports that identified the challenges and opportunities for private sector participation in NDC implementation in Africa. These six reports included an Africa-wide report and five country-specific reports for Mozambique, Morocco, Egypt, Nigeria, and South Africa.

Sources of finance

A key part of Pillar 3 is the mobilization of finance including external sources of climate finance. Table 12 shows external climate finance flows from dedicated climate change funds and other funds.

The USD 682 million external finance mobilized in 2019 compares with internal finance of USD 3.6 billion (i.e. Bank approvals attributed to adaptation and mitigation). Internal finance dropped to USD 2.2 billion in 2020.

Table 12: 2019 external climate finance flows (dedicated climate change funds and other funds)

Source of finance	Adaptation finance	Mitigation finance	Dedicated climate funds	External sources	Total external climate finance
Africa Climate Change Fund	12		12		12
Africa Growing Together Fund	94	49		143	143
Climate Investment Fund		57	57		57
EU Africa Investment Facility	3			3	3
EU Africa Investment Platform	32	53		86	86
EU-Africa Infrastructure Trust Fund	2	11		13	13
European Union—European Fund for Sustainable Development		55		55	55
Global Environment Facility	54		54		54
Multi-Donor Trust Fund for Zimbabwe	4			4	4
Private Sector Credit Enhancement Facility		9		9	9
Rural Water Supply and Sanitation Initiative	5			5	5
Special Relief Fund	6			6	6
Transition Support Facility	141	54		195	195
European Commission	11	6		16	16
Sustainable Energy fund for Africa		4	4		4
Green Climate Fund		20	20		20
Grand total	364	318	147	535	682

Source: AfDB 2020

Box 8: Private Sector Investment Initiative for African NDCs: Next Steps

The key outcome of the Initiative is the origination a USD 500 million *Financial Sector Green Facility for SMEs*. The facility has been programmed in the Bank's 2022 pipeline and is expected to be co-financed by the GCF. It will target youth-led SMEs with particular attention to young women-led SMEs. Critically, the facility will not only scale up access to climate finance for women through targeted lending, but it will also increase women's control of sustainable economic assets and income on the continent. The facility is one of the key interventions to support youth-led climate innovation under the Africa Adaptation Acceleration Program (AAP) – the recently launched joint work program of the Bank and the GCA that aims to scale up adaptation finance and actions in Africa. The facility has three components, as shown in Annex 1: Credit Line, Technical Assistance, and Capacity Building.

Component 1 – Credit Line: This component will be extended to SMEs to improve their access to climate finance through financial intermediaries. The Bank will finance the credit line with additional co-financing from the GCF. The credit line will target projects with strong adaptation and mitigation component outcomes.

Component 2 – Technical Assistance: This component is a grant facility to finance technical studies, consulting services, guidance manuals, toolkit development, and other non-training technical support required by partner financial intermediaries and SMEs to develop and finance bankable NDC-aligned adaptation and mitigation projects.

Component 3 – Capacity Building: The capacity building component is a grant facility to build the skills and specialist knowledge of African financial institutions and SMEs to mainstream climate change into their financing and business development operations through specialized in-person and online training.

While the Bank has previously extended sectoral credit lines for green projects, this credit line facility will be the Bank's first climate-smart credit line, specifically designed to target NDC-aligned adaptation and mitigation investments by the private sector, particularly SMEs, across all industries. The credit facility is being designed using the Bank's newly developed *Guidance Paper for Mainstreaming Climate Change into Lines of Credit*. The guidance paper will inform the development of the loan agreement with partner financial institutions, ensuring that partner financial intermediaries screen all underlying investments for climate risks and encourage their SME clients to mainstream climate actions in their projects. The guidance paper also includes adaptation and mitigation finance taxonomies and frameworks to target climate action. This innovative approach takes the lending operations of the Bank and its partner financial intermediaries a step closer towards Paris Alignment.

This credit facility is in line with the “billions to trillions” paradigm adopted by the multilateral development finance institutions within the Addis Ababa Agenda for Action framework. The credit line is expected to crowd in 3–4 times its value in additional private sector financing.

Volumes of funding are important, but CCAP2 noted AfDB's intention of “supporting investment activities that promote women's economic activities” as well as

“empower women”. The Private Sector Investment Initiative for African NDCs includes steps that will help get funds to women and other groups (Box 8).



Chapter 5: Enabling environment

Introduction

Climate change can impact many aspects of life, society, economy, and ecosystems. Likewise, socio-economic behaviors generate GHG emissions while also influencing vulnerability and exposure to climate change-related hazards. Given these complex interactions and the wide range of issues that need to be considered when designing and delivering climate-resilient low-carbon operations and projects, it helps if policies and processes are aligned with climate change goals, guidance is available, and capacity is in place. Collectively, these components create an enabling environment, addressing cross-cutting issues. This *enabling environment* forms Pillar 4 of CCAP2.

From Box 9, CCAP2 highlights that “effective adaptation and mitigation actions cannot be undertaken without an enabling environment.” An enabling environment has three parts, including: the AfDB and its capacity; RMCs, their policy environments, and capacities; and other stakeholders including civil society and the private sector. Coordination is important as are partnerships and governance arrangements involving these stakeholders. Other key themes to emerge from the thematic analysis of CCAP-related evaluations and annual reports include AfDB processes, monitoring, evaluation, reporting and learning, knowledge generation, communication, and NDCs (Table 13).

Box 9: Pillar 4 – Enabling environment and cross-cutting issues

Effective adaptation and mitigation actions cannot be undertaken without an enabling environment, which includes adequate institutional capacity in which climate-related investments can be effectively designed and implemented. The policy environment in RMCs have to be enabling whereby risks are identified and managed, providing predictability and stability to potential investors. Meanwhile, national stakeholders have to be engaged, empowered, and assume ownership of their development agendas over the long term.

The Bank has significant experience in supporting the development of enabling environments stemming from its long-term consultative engagement with country-level stakeholders in designing processes of Country Strategy Papers (CSPs) and Regional Integration Strategy Papers (RISPs). Several of the Bank's funding instruments, including some of its trust funds, have specific goals of creating enabling environments in order to clear the way for investments in technologies that lead to low-carbon and climate-resilient development pathways. SEFA financing for standardized Power Purchase Agreements, resource mapping, feasibility studies, power master plans, renewable energy tariff policies, and environmental and technical regulations targeting grid and off-grid renewable energy (green mini-grids) installations, for example, all mitigate investor risks in emerging markets.

Source: CCAP2

Table 13: Evaluation indicators for Pillar 4 – Enabling environment and cross-cutting issues

Theme	Results chains/Expected result	Performance indicator	Baseline (2015)	Expected (2020 or 2025)
Quantitative indicators				
Alignment	New operations design	New operations with climate-informed design		
Thematic analysis of CCAP-related evaluations and annual reports				
		Mainstreaming climate change at the AfDB	Identification of themes including related issues and options	
	Capacity	AfDB capacity		
		RMC capacity		
	Stakeholder engagement	Partnerships and governance		
	Project management	Processes		
		Monitoring, evaluation, reporting, and learning		
	Knowledge and communications	Knowledge services		
		Knowledge generation		
		Communication		
		NDCs		

Mainstreaming climate change at the AfDB

One of the indicators from the CCAP2 Indicative Results Framework was “% of Bank’s Policies integrating climate change.” It is unclear exactly what percentage of the AfDB’s policies integrate climate change, but there has been progress mainstreaming climate change into AfDB projects and operations. For example, the “Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB’s Interventions” noted “...as CSPs, RISPs, TYS, CCAP, and RMF have been updated and revised periodically, there is a clear progression in acknowledging and explicitly mentioning GG-CC as one of the important cross-cutting issues to be addressed...”.

Climate change needs to be a consideration in project design and implementation. While operations need to address climate change at the design stage of projects and operations, climate change also needs to be a consideration in all decisions to ensure climate ambitions are delivered. For this to be effective, AfDB staff need to have an awareness of climate change adaptation and mitigation, especially task managers.

PECG is an essential part of the CCAP, but at the same time it is important to ensure PECG has adequate capacity to support CCAP delivery and

support other parts of the AfDB with guidance and advice as required. This includes provision of guidance documents and tools.

When it comes to the Africa Water Facility (AWF), climate change mainstreaming has been successful apparently due to the tightly coupled relationship between water and climate. In such a tightly coupled system, it is difficult to ignore climate change, especially when dealing with transnational water flows. Other areas are more challenging to mainstream climate change, especially where linkages may not be as direct.

It was noted in the CCAP2 extension request that “consistent leadership by the Bank’s management on CCGG agenda constitutes a great success factor.” However, it was also noted that “increased communication from top management is important to ensure staff buy-in and effective CCGG mainstreaming into the Bank’s operations.”

Hence, mainstreaming requires more than just tools, but also requires capacity and institution-wide buy-in and understanding. To improve coordination between PECG staff and sector experts, a protocol has been developed to be implemented and tested in North Africa Regional Development and Business Delivery Office (RDGN) and, if succeeded, to be expanded into other regions (Box 10). There is a question as to whether PECG should be higher in the

Box 10: RDGN – PECG Protocol

RDGN’s PECG team realized in 2018 that its mission in the region could be delivered much more effectively if properly structured around a detailed set of procedures that clarified goals, tasks, responsibilities, and timelines. Activities were being carried out in an ad hoc manner and the team was not always incorporated adequately in either the country dialogues nor the project cycle of the Bank’s operations. Hence, climate change and green growth considerations were often not properly taken into account.

It was decided to design and test a pilot protocol in RDGN with the following key questions in mind: (i) How can we ensure that all country strategy papers and operations include reasonable climate change and green growth considerations from the very start? and (ii) How can we improve the efficiency and effectiveness of the climate finance resource mobilization process?

The protocol has two key objectives: (i) Ensure that all possible synergies among the key processes in PECG’s mandate (i.e. mainstreaming, climate finance tracking, and resource mobilization) are optimized; and, while doing so, that (ii) all climate change and green growth targets of the Bank can be efficiently met in RDGN. The idea is to fine tune its design through lessons learnt during its piloting in RDGN so that it can then be applied to other regions.

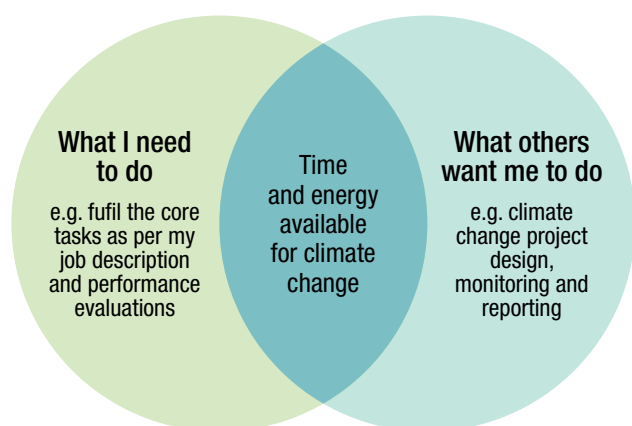
The implementation of the protocol is the responsibility of the Climate Change and Green Growth focal point in Tunis with full support of the RDGN Climate Change Support Team (CCST). This is important so as to sensitize all the right stakeholders and set out the expectations from both sides (PECG focal point and the RDGN team).

This protocol indicates—both at the strategic and operational levels and using the DAM format¹—the **steps and principles to be followed** by the different actors involved in mainstreaming climate change and green growth, including developing a climate finance proposal and how they interact. In this sense, the responsibilities are assigned with PECG’s activities in mind, as they fit into both country dialogue and project cycle processes, for the following stages:

- Mainstreaming Climate Change and Green Growth Considerations into the Programming of Country Operations;
- Mainstreaming Climate Change and Green Growth Considerations into the Annual Programming for Bank Group Operations (SO & NSO);
- Client Relations and Communications (SO & NSO);
- Mainstreaming Climate Change and Green Growth Considerations into Project and Program Development and Lending (SO & NSO);
- Implementation Support & Monitoring.

1. Delegation of Authority Matrix 2018 (current version). Since this is a living document, once new official versions of the DAM are approved it will be updated as needed. Senior Vice-Presidency will review once each new and approved Delegation of Authority Matrix becomes available.

Figure 42: The challenge of mainstreaming climate change for staff outside of PEGC



AfDB hierarchy, or to which extent training AfDB staff can help fulfil the CCAP. The AfDB could consider becoming the African Sustainable Development Bank, with such a clear focus on climate change, green growth, and sustainable development, that staff would evaluate these aspects as core considerations.

AfDB mainstreaming include issues of capacity, partnerships, processes, knowledge, and communication, which are addressed in the sections below.

The creation of the enabling environment to support the mainstreaming could include for example the policy reforms, institutional set ups, capacity building, communication and partnerships – support (2) resource mobilizations such as incentives, capacity building – technical assistance etc.

AfDB capacity

The CCAP2 Indicative Results Framework includes the indicator: “Number of Bank staff trained on climate changes issues.” While it is unclear how many Bank staff have been trained in total since 2016, Box 11 and Box 12 highlight over a dozen capacity-building activities in two years.

From the thematic analysis of CCAP-related evaluations and annual reports, to support the mainstreaming of climate change into projects, the AfDB needs adequate internal capacity—not only in PEGC but across AfDB and its operations. From evaluations related to CCAP1, training programs were identified as being important. Evaluations related to CCAP2 indicate there is widespread awareness of adaptation and mitigation, although a review from 2021 indicates more needs to be done clarifying what constitutes green growth, and the relationship between climate change and green growth. With the rise of finance related to Environmental, Social, and Governance (ESG) particularly in the private sector, it

Box 11: Example of capacity-building activities from 2018

The Africa Climate Change Fund (ACCF) co-organized a 3-day training in partnership with the Global Water Partnership, the Africa Water Facility (AWF), the Development Bank of Southern Africa (DBSA) and the Green Climate Fund (GCF) to build the capacity of climate change focal points and water sector stakeholders in African countries on direct access to GCF. The workshop, which was held in Pretoria, South Africa, in September 2018, trained 100 participants on how to develop proposals for the GCF and provided a platform for stakeholders to discuss project concept notes with the GCF and the Bank. It also provided a set of training materials that could be used for future training events.

The Bank, in partnership with the International Trade Centre, conducted a **climate finance training that attracted 40 participants in Liberia** (8–9 November 2018) and 30 participants from Abuja and Lagos (19 November 2018). The essence was to raise awareness regarding the critical need for sustainable finance for bank lending and SME development. At the end of the program, participants were provided with a tool to develop individualized Five-Point Action Plans that will guide them in developing and enhancing their activities within their respective institutions.

A Regional Workshop on “**The Role of African Parliamentarians in the Implementation of the Paris Agreement: Challenges and Prospects**” was organized in Abuja in November 2018. The attendees included about 180 private sector experts, over 50 Bank staff and consultants, and over 50 government officials and ECOWAS parliamentarians on climate finance strategies, GCF operations, and on the implementation of NDCs in Africa.

The PEGC delivered **training programs for RDGN** (Tunis, February 2018), **RDGC** (Douala, March 2018), and **RDGW** (Abidjan, October 2018). Over 100 Bank Country Managers, Country Programme Officers, and Task Managers were trained on the importance of mainstreaming climate change, climate finance, and green growth into the Bank’s planning activities and projects. As part of its capacity-building program, PEGC has also developed an executive and professional training program for RMC officials to strengthen their capacities in the implementation of the NDCs. However, resources are being sought to start implementing this program.

A regional training workshop on Developing Concept Notes for the Green Climate Fund was organized in October 2018 in Tunis jointly by the AfDB and UNFCCC’s Climate Technology Centre and Network (CTCN) to build capacity of the national experts from North African countries through hands-on training. The training program combined theory and practice to facilitate proposal development and ensure access to climate finance from the GCF. Over 25 participants were in attendance, including national climate change and development experts, National Designated Authorities (NDAs), and UNFCCC focal points from Tunisia, Morocco, Egypt, and Algeria.

Source: AfDB 2019

Box 12: Example of capacity building activities from 2019

GHG Accounting Training: PCEG organized training on GHG accounting for Bank climate change officers and operational staff from 18–20 September 2019 in Abidjan, Côte d'Ivoire. The aim of the training was to capacitate staff to better advise RMCs on climate change mitigation and on the selection of technologies to meet their long-term commitments under the Paris Agreement.

Climate Finance Training: This seminar on 28 and 29 October, organized in collaboration with the Frankfurt School, aimed to raise staff awareness of the significance of climate finance and how to implement the mainstreaming of climate finance throughout the Bank's operations, in alignment with CCAP2.

Gender and Climate Change Workshop: On 30 October, PCEG held a Gender and Climate Change Workshop as part of the AfDB/CIF Inclusive Climate Action Initiative. Organized in collaboration with the Bank's Department of Gender, Women and Civil Society (AHGC) and the International Union for Conservation of Nature (IUCN), the discussions strengthened understanding among Bank staff of the linkages between gender and climate change.

GCF Operational Procedures Handbook workshop: The overarching objective of this session, held on 31 October and co-organized with Atkins, a leading project management consultancy firm, was to present the *African Development Bank-Green Climate Fund Operational Procedures Handbook* to Bank operational staff, provide guidance on its use, and solicit feedback on its applicability. The training session provided a discussion platform on existing experiences in accessing GCF resources, as well as opportunities for increased alignment of both institutions going forward.

First meeting of the Community of Practice for Direct Access Entities to Climate Finance: At the initiative of the ACCF, the AF, and the GCF, over 30 representatives of Direct Access Entities and National Implementing Entities of the GCF and the AF, including 15 representatives from Africa and others from Asia and South America, met in Durban on 5–7 June 2019. The aim of the meeting was to establish a Community of Practice for Direct Access Entities to build the capacity of the community's members to efficiently access, receive, and utilize funding from AF and GCF.

2019 African Youth Agripreneurs Forum in South Africa: One of ACCF's current strategic priorities is youth empowerment in climate-resilient sectors. The Fund collaborated with the Bank's Youth Entrepreneurship and Innovation Multi-Donor Trust Fund, the Korea-Africa Economic Cooperation Trust Fund, and other partners to convene the African Youth Agripreneurs Forum (AYAF), themed 'Climate Smart Agriculture: Business and Employment Opportunities for Africa's Youth,' in Cape Town, South Africa. The event brought together many young entrepreneurs in the agri-tech space and provided them with a platform to brainstorm with experts, business leaders, investors, and policymakers on challenges and opportunities for youth employment in the sector.

CDSF at the Post-SAWIDRA Workshop: PCEG's ClimDev-Africa Special Fund participated in the Post-SAWIDRA Workshop, held from 11–13 December 2019 at the headquarters of the European Organization for the Exploitation of Meteorological Satellites, in Darmstadt, Germany. The workshop provided an opportunity for the CDSF to share its experiences with the preparation, appraisal, and management of the Satellite and Weather Information for Disaster Resilience in Africa (SAWIDRA) Program. Representatives of the Fund also participated in the development of a concept note and road map for post-SAWIDRA activities as well as a brainstorm on a strategy to mobilize the resources required for the second phase.

Source: AfDB 2020

could be timely to unpack these issues and develop training materials for staff. Staff recruited for their climate change related experiences and skills also need training in Bank-related processes including underlying reasons for these processes and systems.

The CCAP2 Indicative Results Framework included the indicator: "Number of climate experts based at Regional Hubs." Regional and country offices have a special role. Having decentralized climate change knowledge and mainstreaming leads to better results according the 2021 IDEV evaluation of PCEG activities. The evaluation found having climate change experts in regional and country offices helps, for example, when working with RMCs on climate change-related knowledge products, Country Strategy Paper (CSP) preparation, and project development. Linking climate change and green growth with RMC context is important, enhancing understanding between the Bank and stakeholders. A lesson from the IDEV evaluation is that the Bank needs consistent understanding of climate change and green growth across all areas of work to deliver effectively. Specialized staff are needed, in addition to all other staff having some understanding of climate change so they know what questions to ask.

The Africa Climate Change Fund Annual Report 2019 noted that capacity needs can change, for example, if a fund is scaled up. It can be challenging attempting

to keep fund overheads down, while at the same time securing new funds to manage and monitor.

RMC capacity

Successive CCAP-related evaluations have highlighted the need for climate change capacity in partner organizations, for example, in RMC institutions or civil society and private sector organizations applying for funds. RMCs and stakeholders within RMCs need a certain level of capacity to apply for AfDB support, prepare project proposals, deliver projects, and report results in ways required by the AfDB. RMCs also need institutions including policies to guide their climate responses. Even when projects proposals are successful, many grant recipients do not know how to report on their projects to the Bank, indicated by, for example, mixing technical and financial evaluations.

Training only contributes to capacity for as long as people stay with their organizations. As such, continuous training programs are required, including courses offered each year for professional (in job) training. It is also possible to work with universities to include climate change in various disciplines, for example, in commerce, law, public policy, town planning, and engineering courses. It should also be noted that the processes of candidate selection

for training can take some time and this needs to be factored into capacity-building exercises. In addition to continuous training, improved tools and processes help newcomers quickly learn and become effective in their work.

Institutional capacity is essential to support adaptation; networks can help in this regard. Research organizations can also help. Local staff, consultants, and researchers should be included in all activities as part of contracts to do work.

Partnerships and governance

CCAP-related evaluations show it is important to work closely with partners. At the same time, expectations of each partner need to be clear, including, for example, clear targets and related indicators. An evaluation of the AWF found that stakeholder advocacy can also be an important contributor to project success. Meanwhile, stakeholders that can also provide strategic guidance and select representatives should be involved in project oversight and governance, especially where there are high-level bodies such as ministerial councils in the sector. In the case of the AWF, it was suggested that the AMCOW should be able to advise the Governing Council.

Processes

Design of bidding and evaluation processes is important as this affects project selection. For example, the Multi-Donor Agriculture Fast Track Fund Annual Report from 2016 noted that “strict adherence to use of competition in the grant bidding and evaluation process could result to rejection of projects with prospects for impacts on smallholders, women, and the youth (persons from 15–35 years).” Application processes and evaluation criteria have a strong bearing on projects selected. As such, care needs to be taken in the design of the processes and criteria, ensuring projects that fulfil relevant objectives are in fact supported. Inclusion needs to be considered alongside transparency and the quality of proposals and applications.

Projects are more likely to be successful if most stakeholders benefit from the project. Being clear about stakeholder benefits in project design could help increase the number of stakeholders benefitting. Having staff in country offices to communicate and engage with project developers, for instance, while the proposal is being developed is a recurring theme in evaluations and reports. Decentralization should be coupled with robust monitoring and evaluation, and collaboration with partners.

At the same time, AfDB processes would be faster if beneficiaries were able to successfully implement some of the basic items. For example, the multi-donor AFTF’s Annual Report from 2017 noted that “grantees will help to facilitate the disbursement process if they take their time to review all documents originating from the Consultants — including ascertaining correctness of the Bank details and ensuring that value-added tax (VAT) is not included in the Invoice — before submitting payment requests to the Bank.” It also noted that procurement plans need to be followed by Grantees. At the same time, there may be a question of rigidity to AfDB processes and expectations.

The CDSF Annual Report from 2017 highlighted that it would be ideal if beneficiaries could also expedite their processes. Some stakeholder organizations appear unnecessarily bureaucratic.

To help stakeholders prepare proposals and applications, the IDEV evaluation of PECO noted that “further consideration could be given to PECO establishing a special fund/facility that is resourced internally to support early-stage studies, technical assistance and/or business development for projects with the potential to attract external climate finance.”. Specialized procurement can complicate climate change-related projects, such as via the procurement and verification of specialized meteorological instrumentation and systems, or other scientific equipment related to climate change or the monitoring of related physical hazards.

Ideally, AfDB project processes can be streamlined with improved communication between AfDB staff from different parts of the organization, including country offices. Successive evaluations highlight coordination is important within the AfDB. The Africa Climate Change Fund Annual Report in 2019 noted that streamlining is complicated, especially when it comes to issues of process and accountability. However, the AWF evaluation included recommendations consisting of improving “i) the core processes and procedures on project assessment, planning, preparation, and appraisal in relation to cost and time; ii) procurement and administrative arrangements to minimize and/or avoid procedural delays; and iii) mechanisms to strengthen its capacity and that of Executing Agencies for efficient implementation.”

Travel policies can have a bearing on project delivery including meetings. The CDSF Annual Report noted that “the CDSF Coordination Unit regularly experiences problems attending both scheduled and unscheduled meetings/forums with partners, especially since all staff in the Department have to abide to the maximum of 3 missions cap per quarter. Discussions are underway with senior management in the Department to seek for a flexible mission

programme for CDSF Staff.” However, times have changed with COVID-19, and it is likely that web-based meetings have become more viable both technologically and with abundant experience. However, travel is necessary to fulfil the AWF evaluation’s recommendation that “to follow water developments going on in countries with more regular monitoring and site visits to projects.” A reasonable number of project managers are needed if this is to be viable.

Monitoring, Evaluation, Reporting and Learning (MERL)

The AfDB will need to work on its internal reporting systems so that it can ensure Measurement, Reporting, and Verification (MRV) standards and international reporting systems such as those that will be used for the *Joint Report on Multilateral Development Banks’ Climate Finance* are consistent. If the Bank does not have its own systems working, it will negotiate reporting standards from a position of weakness and will likely end up having to use systems not specifically designed for African countries or their contexts.

Annual reports are an important part of learning, as is stakeholder feedback. The AfDB needs to regularly report on its internal and external finance-related activities, feeding into learning and adjustments to the delivery of finance and other CCAP-related activities. Currently, annual reports are published intermittently.

The IDEV evaluation of PECG noted the need to “put in place adequate mechanisms to monitor and track GG-CC [green growth and climate change] results throughout the project cycle, to (i) promote continued attention for GG-CC during project implementation, (ii) enable the Bank to address potential barriers to the uptake and effectiveness of GG-CC mainstreaming, and (iii) improve reporting on the results achieved. To this end, the Bank could consider establishing and maintain a database of Bank projects that mainstream GG-CC into their designs. Such a database, with a tracking system with measurable output, outcome, and impact indicators to track climate change and green growth activities (at both the Bank and project-level), could be used as an evidence-base for the measurement and reporting of progress throughout the project cycle. This promotes project implementation in line with their GG-CC-mainstreamed designs and enables the Bank to course-correct to address potential challenges to GG-CC mainstreaming as necessary.”

Databases need classifications such as by project types. Classifications can help identify relevant projects with lessons, issues, and options that can be shared. Outcomes will be of special interest to potential and existing funders.

For specific operations and individual projects, baseline appraisals are important. Other evaluations highlight the need for a field presence, helping with project supervision, monitoring, and reporting. Continuous improvement is essential, including how to improve MERL, the use of this information at all levels, and especially in decision making.

Knowledge services

The CCAP2 Indicative Results Framework include the results chain “Increased knowledge services” with indicators consisting of the number of Economic and Sector Works (ESWs) and climate-related publications; the percentage of new operations with climate-informed design; and operations with satisfactory environmental and social risk mitigation measures.

Figure 43: New operations with climate-informed design relative to targets

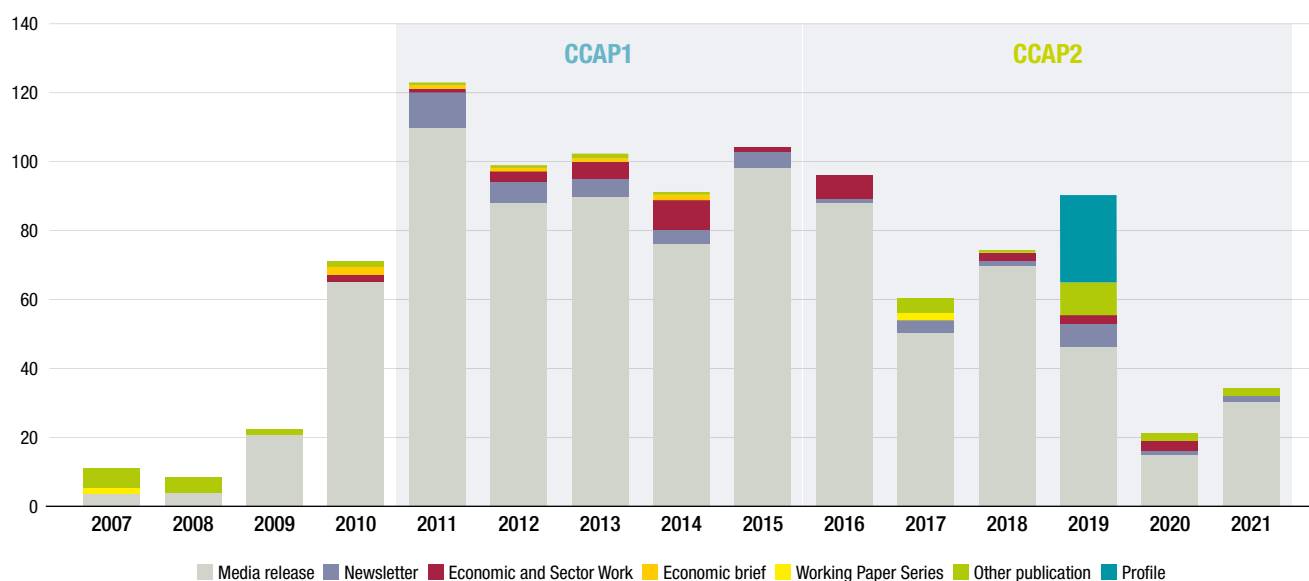


Source: ADER

With regards to these indicators, new operations with climate-informed design mostly exceeded targets (Figure 43). For example, in 2019, 90% of new operations had climate-informed design, exceeding the target of 83%. The AfDB-wide target for 2025 is to have at least 95% of projects with climate-informed design.

Knowledge generation

High quality data and information need to not only monitor progress but to support decision-making at all stages of the project or operations cycle. For resilience-related projects, this can include vulnerability

Figure 44: Knowledge generation and related publications addressing climate change**Knowledge generation**

Source: AfDB

maps and data collections, adaptation scenario development, socioeconomic vulnerability analyses, as well as taking ecosystem-based adaptation approaches.

All projects should include a budget for knowledge generation, starting with MERL, but also including funds for other aspects of knowledge generation, such as research, innovation, or meta-studies.

The CCAP2 Indicative Results Framework includes the indicator “Number of ESWs and climate-related publications” with the target of having this number increasing. ESWs refers to analyses at the economic or sectoral level. Figure 44 presents ESWs and climate-related publications, including media releases. It shows that there were generally more ESWs and media releases in the CCAP1 period than in the CCAP2 period. Media releases drop in 2020 presumably due to COVID-19 affecting the priorities and media activities of the AfDB. Notably, a set of climate profiles were published in 2019.¹

Communication

It was noted in the Multi-Donor AFTF Annual Report 2016 that there are numerous projects, making it challenging to publicize all projects launched. The need to target stakeholder audiences was also noted in the AWF evaluation, and an AFT evaluation noted

that apart from just social media, traditional media platforms such as radio, television, and newspapers also need to be used. Communication needs to cover the range of social media platforms and can be enhanced by using each of these platforms. It would also be useful to monitor the type of stakeholders that use each platform to facilitate targeted messaging and communications through these platforms accordingly.

A key audience for AfDB communications is high-level decision makers, including politicians, academic researchers, and other development partners and actors. This includes targeting donors to raise and mobilize funds, as well as others to create partnerships and engagement on key issues.

From the thematic analysis of CCAP-related evaluations and annual reports, a communication strategy and set of policies are needed, with the aim of increasing the number of people knowing about AfDB climate finance and information, and increasing the pool of people and organizations capable of accessing climate finance and knowledge products.

It is important to make sure potential beneficiaries are aware of possible sources of finance. At the same time, making more potential beneficiaries aware may increase the workload of AfDB staff processing project applications. The design of information-sharing platforms will be important along with ensuring sufficient information is available for stakeholders

¹ Note: It is possible that the data used to prepare Figure 44 may have missed some publications.

when it comes to terms and conditions related to each source of finance.

Expectations need to be communicated to recipients of finance, including when they will be expected to report on progress and update the AfDB and related stakeholders. It is important to manage expectations of fund recipients. For example, the Multi-Donor AFTF Annual Report noted that some recipients saw the grant as an entitlement, forgetting the need to fulfil the grants goal.

Communication is a two-way activity. More stakeholder feedback on the AfDB's climate change activities is needed through workshops or other means. It is also possible to use events as an opportunity to showcase AfDB work, engage stakeholders, and form partnerships. Multiple key actors can attend these events, making participating in these events an efficient mission for engagement, both formal and informal.

NDCs

The CCAP2 Indicative Results Framework includes the indicator: "Status of operational partnerships under the NDC Partnership Hub." While the exact number of partnerships under the NDC Partnership Hub is unclear, the thematic analysis identified pathways forward with implications for NDCs. For example, Africa has many challenges and as such it is difficult reconciling climate change with immediate development challenges. However, this is ever less true, for example, renewable energy technologies are not only competitive and scalable but, in many places, the cheapest way to electrify Africa. These fundamental shifts in technology make adopting these technologies not only viable but the best option in many cases. These and other opportunities need to be explored more in NDCs. As such, RMC NDCs need to be broken down into a series of development priorities and projects that can be implemented.



Chapter 6: Challenges and lessons

Introduction

As already mentioned throughout the document, climate change complicates everything. The impacts of climate change are not just climatic, but include changes to hydrological systems, ecosystems, as well as human and managed systems. Impacts on people, property, and livelihoods are only just emerging and this may explain why climate change is not a high priority for many leaders or people across Africa. Immediate development needs are pressing, but at the same time, the impacts of climate change are set to grow according to successive IPCC assessments and an ever-growing body of research.

In the previous chapters, progress implementing CCAP2 has been evaluated and challenges identified. This chapter summarizes the challenges and lessons, starting with the current situation; followed by addressing each CCAP2 Pillars successively. The chapter finishes with other challenges and lessons learned while preparing this evaluation.

Current situation

The evaluation of the current situation shows there has been atmospheric warming over continental Africa, but changes are not even across the continent. There is evidence of climate change impacts, for instance, affecting South African farmers and Sahel fruit trees. Unfortunately, the risk of impacts is set to grow due to the rapid accumulation of GHGs in the atmosphere and the lack of ambition when it comes to global mitigation efforts in NDCs. With regards to Africa, the IPCC found nine key physical risks, consisting of: (i) shifts in biome distribution; (ii) compound stress on water resources; (iii) degradation of coral reefs; (iv) reduced crop productivity; (v) adverse effects on livestock; (vi) changes in incidence and geographic range of diseases; (vii) undernutrition; (viii) increased migration; and (ix) sea level rise and extreme events. In addition to these physical risks, there are transition risks such as with technologies related to the production, refinement, or combustion of fuels may become stranded assets. These challenges speak to RMF Level 1 and the question of Africa's progress, climate change risks, and challenges.

Climate change is cross-cutting, creating challenges to the fulfilment of the SDGs, the AfDB's High 5s

as well as regional development ambitions such as Agenda 2063. The cross-cutting nature of climate change is evident in African NDCs. African NDCs address the full range of SDGs and many of the SDG targets as well. Likewise, the AfDB's own analysis of adaptation needs shows climate change to be cross cutting. While some SDGs and sets of needs are more common than others, and may constitute a focal point for action, all climate change projects need to be grounded in the local context. In some cases, there may be unexpected relationships between climate change and development.

Pillar 1 on adaptation and climate-resilient development

With regards to Pillar 1 and enhancing the climate resilience of development, human development levels have increased across Africa but climate readiness levels appear to have dropped, even as vulnerability levels have remained static. Across Africa there are a range of human development levels, climate readiness, and vulnerability levels. However, readiness is generally higher for more developed countries, and vulnerability levels are generally lower with increased development. Economic diversification can also enhance the resilience of countries to climate change and other disruptions, and RMCs have been meeting AfDB economic diversification targets. Integration and cross-border trade can also increase resilience such as when there are food shortages, but the cost of trade remains stubbornly higher than AfDB targets.

Feeding Africa and food security is an important part of Pillar 1 and climate resilience. Unfortunately, cereal yields are lower than AfDB targets for Africa, and there is a wide variation in cereal yields across the continent. Increased control of inputs and growing environments can enhance climate resilience. However, targets from improved farming technology and land with improved water management and fertiliser consumption are not being met. Meanwhile, Africa remains a net food importer. Self-sufficiency would reduce reliance on food imports and limit the risk of climate change impacts elsewhere in the world affecting African food supply chains and prices.

Improving the quality of life for Africans including through safely managed water supply and sanitation is

an important goal of the AfDB. Safely managed water supply and sanitation also enhances resilience to climate change including related waterborne diseases. Access to safely managed drinking water services is missing AfDB targets but access to safely managed sanitation is meeting AfDB targets. However, the need for safely managed water supply and sanitation remains great for many countries across Africa. Importantly the AfDB is vastly exceeding its own targets contributing to the number of people with improved access to water and sanitation services. In other good news, resilience to water shocks is also exceeding AfDB targets.

There is evidence of adaptation planning in Africa, indicated by national plans, strategies, laws, or policies, but not in every RMC. At the same time, such planning is only part of a wider set of adaptation considerations and actions. Unfortunately, there are many challenges reflecting the diversity of situations faced by RMCs. Challenges and barriers include exogenous factors such as military and political crises, which when we have 54 RMCs (i.e. over a quarter of all UN member states), will be an issue at some stage. Institutions are a key issue, including policies and the organizational capacity needed to support policies and adaptation interventions. Knowledge is another challenge, for example, on the issue of climate change or the interventions that are possible. The need for finance is another recurring theme. Political will is also a challenge.

Pillar 2 on mitigation and low-carbon development

Pillar 2 of the CCAP2 is mitigation and low-carbon development. Existing development models in Africa and from across the world involve industrialization and GHG emissions. The challenge is to progress development objectives while limiting per capita GHG emissions growth, and ultimately achieving low-carbon development.

When it comes to GHG emissions and development, total GHG emissions have grown as human development levels have increased, but per capita GHG emissions remain low and below the global per capita GHG emissions needed in 2030 to limit climate change. Meanwhile, human development and per capita GHG emissions levels vary across Africa.

At the aggregate level, GHG emissions are growing from energy, AFOLU activities, as well as industrial processes and water. However, at the beginning of the CCAP2 period, land use change emissions appear to have dropped. Despite this, AFOLU still accounts for a majority of Africa's GHG emissions.

Fifty-three of the AfDB's 54 RMCs have submitted NDCs or INDCs. Most of these NDCs include targets that, if converted into per capita terms, are well below the global per capita level required in 2030 to be on path towards fulfilling the Paris Agreement. However, the extent to which these targets are viable or likely to be achieved remains to be seen. The most ambitious targets are conditional, requiring finance from abroad.

Energy is an important area for mitigation and low-carbon development, hence lighting up and powering Africa is central to Pillar 2. While energy-related emissions are relatively low across Africa, industrialization requires energy to grow and households need energy to improve quality of life. The choices made to light up and power Africa will have a strong bearing on whether we have low-carbon development.

With regards to progress against targets, the share of population with access to clean cooking solutions falls well short of AfDB targets. This means there is pressure for biomass and changing land use, while also generating emissions and creating indoor air pollution. Some areas of Africa have high percentages of the population with clean fuels and technologies for cooking; East Africa, West Africa, and Central Africa have very low rates of clean cooking.

Electrification is an important part of improving people's lives and the modern life. Unfortunately, installed renewable capacity is falling short of AfDB targets and the AfDB's own contribution is well below its own targets. In many RMCs, electricity transmission and distribution systems face high losses. Hence, energy efficiency is an important part of limiting GHG emissions, simply by getting more of the electricity generated to users. Unfortunately, AfDB targets for new and improved transmission and distribution lines have not been met. Meanwhile, the percentage of electricity being lost remains stubbornly high relative to targets, and targeted GHG emissions reduction from energy have failed to eventuate.

Transport is an important part of integrating Africa, but at the same time, there is the possibility of induced transport demand and increased GHG emissions from road transport. Hence, while the AfDB's transport targets for roads constructed, rehabilitated, or maintained was not reached, the challenge is how to achieve these targets while also finding ways to limit GHG emissions of road users. The electrification of road transport is something that should be considered in addition to rail, especially as price parity for battery electric vehicles is reached with internal combustion engine vehicles. Renewable energy powered vehicles can also reduce demand for fuels and lower strain on foreign currency reserves needed to pay for regular fuel imports.

Pillar 3 on mobilising climate finance

Having all finance, regardless of source and aligned with climate-resilient low-carbon development, is essential to achieving such development. The technologies and practices supported by investments today will either lock in or lock out GHG emissions for a long time to come. As such, increasing the percentage of all finance that supports climate-resilient low-carbon development is essential. Prior to the COVID-19 pandemic, the AfDB was reaching its targets, with a peak of 35% of all projects accessing climate finance in 2019. The year 2020 saw a drop off, with 32% of projects tagged as being climate finance. Another area of progress is the inclusion of climate change considerations at the design phase of projects.

A significant percentage of climate finance around the world has focused on mitigation. However, given concerns around the impacts of climate change in Africa, the AfDB had the target of parity between mitigation and adaptation finance. The AfDB has surpassed this target in 2020 with 63% of finance labelled for adaptation, up from 36% in 2016. However, it should be noted that having a 50:50 balance of adaptation and mitigation finance is somewhat arbitrary, as it does not necessarily align with RMCs' needs. A 50:50 ratio is only optimal if the finance needed to ensure resilience is the same as the finance needed to ensure low-carbon development for a given year.

It is important to note that there are many possible sources of climate finance. This includes taxes,

international levies, capital markets, corporations, as well as households (Figure 45). The AfDB, as a multilateral development bank, is one of many possible managers of this capital. Meanwhile, the AfDB and other managers of capital have a range of financial instruments that can be deployed to support project owners.

Finance for projects that support climate-resilient and low-carbon development can be counted as climate finance. Other finance may be benign without a direct influence on GHG emissions or climate resilience. Together with adaptation and mitigation finance, benign finance can be included as climate-compatible finance (Figure 46). Meanwhile some finance may increase GHG emissions or increase climate change

Figure 46: Climate-compatible finance categories

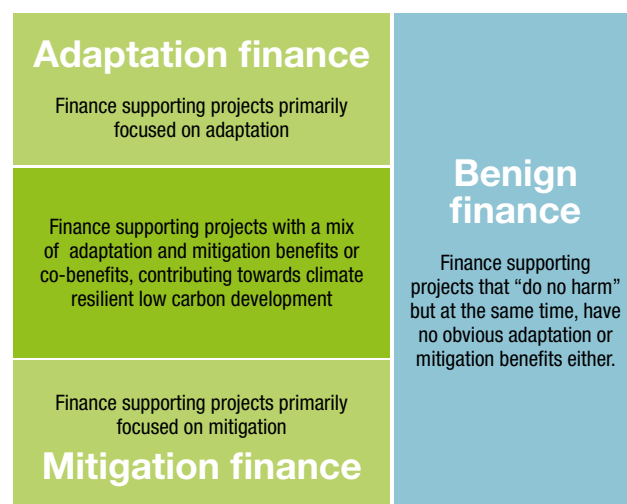
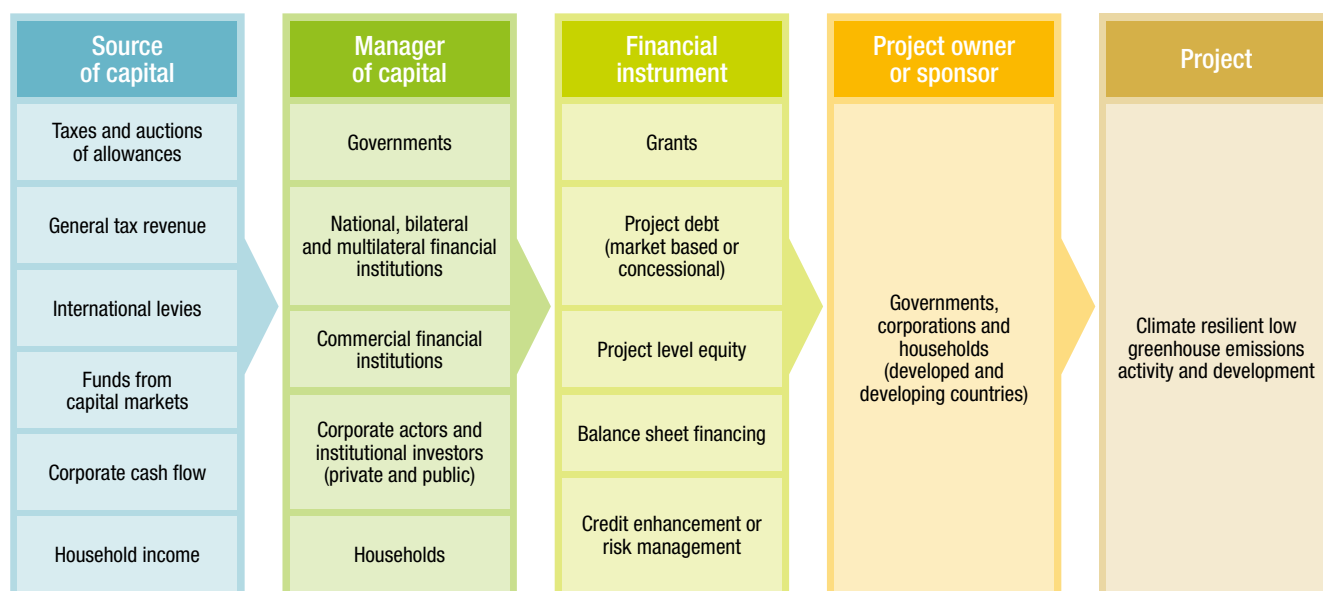


Figure 45: Overview of climate finance sources, managers, instruments, and projects



Source: Modified from IPCC 2014c

vulnerability and is clearly incompatible with the Paris Agreement. As such, project options are very important, and ideally all reasonable responses to climate change should be considered when developing projects.

The extent to which climate finance meets climate finance needs is an important question. One way of estimating climate finance needs is to look at NDCs submitted by RMCs. However, the extent to which these estimated finance needs are evidence based is difficult to assess. Given uncertainties around climate change impacts to come, and the risk of impacts, it is debatable whether realistic economic estimates can be made. That said, the estimated financial needs are considerable in aggregate, but are modest at a per capita level at just over USD 100 per person all up, or USD 3 per person per year for adaptation costs.

However, the challenge of mobilizing finance remains, including the long-term finance under the Copenhagen Accord. At USD 100 billion per year, this would go a long way, but this was not a pledge from governments, and could include finance leveraged from the private sector. As such, long term finance and other sources of climate finance are disappointingly difficult to monitor and verify. Ideally, the AfDB will be involved in setting financial MRV standards. This requires the AfDB to have effective MERL systems in place, so it can speak to its own practices, and hence, from an evidence-based position of authority on the global stage.

The AfDB is only one of many financial institutions and sources of finance to support climate resilient low-carbon development. Other actors include the governments of RMCs, private sector investors and banks, as well as other multilateral development banks and funds. The AfDB needs to consider its climate change strategy, policies, and actions taking into account these other actors, how they work together and influence each other, and how they contribute to the fulfilment of the Paris Agreement and RMC development agendas.

Pillar 4 on creating an enabling environment

An important part of mobilizing and delivering climate finance, as well as climate-related knowledge and operations, is an enabling environment. In the context of climate change, this includes: mainstreaming climate change at the AfDB; enhancing AfDB as well as RMC capacity; having partnerships and good governance arrangements; effective and efficient internal processes; regular MERL exercises; knowledge services and generation to support the

AfDB and stakeholders in decision-making; effective internal and external communications; and supporting NDCs. These are key themes to come out of a thematic analysis of CCAP-related evaluations and annual reports.

Mainstreaming climate change remains a challenge, not least because it is yet another priority that people in the AfDB need to factor into their considerable workload. To date, there has been success including climate change considerations at the design phase of projects, but operational decisions influence the extent to which designs are implemented, including adaptation and mitigation elements of projects. While these considerations are a core focus of staff in the PECO, they are not so for many staff outside of PECO who are involved in projects. Continued internal capacity development and mainstreaming into processes may help, but so would making climate change a core concern of all staff, by increasing the focus of the AfDB on “sustainable economic development and social progress” as per the Charter. For example, it could be possible to change the name of the AfDB to the “African Sustainable Development Bank.” This would change climate change and green growth considerations from being an “add on” to becoming a part of every department’s core considerations.

With regards to AfDB capacity, having staff in country offices to work with RMCs on project proposals and applications has been shown to be effective. At the same time, staff need tools and guidance as well as information on adaptation and mitigation to support them in their work and decision making. Given the breadth of climate change issues, no single person can address all issues based on their own knowledge.

In addition to AfDB capacity, RMC and client capacity is important. This includes the capacity of governments, businesses, and civil society to prepare project proposals, apply for funding, and deliver projects along with monitoring and reporting. Complicating matters, capacity depends on people as well as processes in institutions. In many cases people move on to other institutions. In short, a continuous supply of capacity is needed, so each institution has people coming on board with more, rather than less, knowledge. Capacity development should not be a one-off exercise, and may be more effective upstream, for example, in universities and other tertiary organizations, rather than training of staff in the workplace. In some cases, it may be possible to mobilize capacity as well, including between institutions, recent graduates, and even knowledgeable members of the diaspora.

At the level of project and operational processes, there are many challenges. For example, the design of bidding and evaluation processes related to funds

influences the projects considered, and may limit the diversity of stakeholders able to make successful bids. Careful consideration needs to be made around diversity and inclusivity.

The extent to which processes are rigid and robust versus flexible and inclusive is important. At the same time, setting expectations with stakeholders is very important. Each project is a form of capacity development with lessons to be learned by both the AfDB and the stakeholders, some of whom may never have been involved in such projects before.

In some cases, beneficiaries have been found to have slow or bureaucratic processes. In other cases, they have provided the wrong information or not accounted for expenditures in the ways required. All of these issues take time to resolve. The extent to which guidance and training can be given to potential applications and beneficiaries in advance of being part of a project is something the AfDB may need to explore.

Another complicating factor in meteorological, hydrological, or other projects assessing hazards is the need for the procurement of specialized equipment. In many cases, there are a limited number of providers and AfDB staff lack the knowledge to assess procurement requests or the quality of equipment being purchased.

Streamlining processes related to climate change and projects in general is a common theme from CCAP related evaluations and annual reports. Streamlining needs to be part of a continuous process, taking into account context, changing technologies, and practices available.

To help with continuous and periodic streamlining, it is important to understand what is working and what

is not working so well. Monitoring and evaluation are very important in this regard, as is reporting and learning from results. Unfortunately, CCAP-related reporting appears to be intermittent. For example, annual reports are only available for 2018 and 2019. Likewise, annual reports for internal funds also seem to be somewhat intermittent. However, the evaluations that have taken place are valuable and have helped greatly with the evaluation of the AfDB's enabling environment. At the same time, increased frequency of reporting will be welcome.

A recent IDEV evaluation of PECO noted the need for improved reporting of results and a database of Bank projects and mainstreaming activities. Likewise for the CCAP, the AfDB should consider how reporting is done and the extent to which AfDB staff and other interested stakeholders can engage with the data, including moving beyond PDF reports in isolation to including data as downloadable files for further analysis by interested organizations and individuals such as from research organizations. This can help with learning and widen the pool of people able to assess AfDB activities and share lessons learned. The database could also include performance indicators in a downloadable format (e.g. CSV) or presented as a dashboard.

Given the need for capacity development, knowledge services and generation are important. Importantly, the AfDB exceeded its own target for new operations with climate-informed design. At the same time, more evidence-based knowledge needs to be generated and shared with AfDB staff and external stakeholders. This includes knowledge on climate change and related issues as well as knowledge and information on AfDB-related processes and practices. Given the breadth of RMCs the AfDB has, and the range of projects being supported, there are many lessons to be learned.

Table 14: Commercial viability of climate action in relation to RMC ambition levels

Ambition levels	Non-commercial climate action options available	Commercial climate action options available
High ambition	<p>Climate action cannot be ignored</p> <p>Climate action could include governments providing unilateral, bilateral, or multilateral investments, grants, and subsidies.</p> <p>Responses could also include coordinated policy interventions.</p> <p>Business and social leaders might also undertake research and development of long shot technologies or practices.</p>	<p>The climate action is an opportunity</p> <p>Commercial climate action opportunities create strategic interests in expanding markets, gaining market share, establishing industries, and generating employment and profits.</p> <p>Business competition drives innovation in new technologies and practices, accelerated with subsidies and other forms of government support.</p> <p>Climate actions meet the needs of society.</p>
Low ambition	<p>Climate action deferred</p> <p>Limited cooperation on research and development of technology and practices.</p> <p>Information sharing on research, and limited experimentation with technologies, markets, and policies.</p>	<p>Climate action is politically or socially unattractive</p> <p>Commercial climate action opportunities are forfeited for political or social reasons.</p> <p>Business competition drives innovation and the development of technologies and practices with little or no government support.</p>

Source: Adapted from Webb 2021

With regards to knowledge products and publications, CCAP2 appears to have not quite been as productive as CCAP1. The AfDB could consider increasing engagement with universities and others to undertake analyses and prepare ESWs, economic briefs, working papers, profiles, and other publications.

Internal communication is another area of improvement highlighted in successive evaluations and reports. This includes communication with AfDB staff on issues related to climate change and as part of AfDB processes.

Lastly, the AfDB will need to continue supporting RMCs with their NDCs. To a large extent, climate change adaptation and mitigation has been framed as a cost and challenge; but at the same time, technologies have changed and prices fallen, making some mitigation technologies the best option regardless of climate change. It will be important for the AfDB to keep up to date with rapidly changing technologies and other options. In some cases, it may be RMC ambition levels that inhibit climate action rather than commercial viability (Table 14).

Other challenges and lessons

Africa is a tough operating environment with many challenges, but at the same time, these challenges, if overcome, mean the AfDB can make meaningful changes to people's lives across Africa. Given that people generally do not see climate change as a priority, the AfDB is in a position of leadership, addressing climate change concerns in advance. In fact, the whole point of the AfDB's CCAP2 is to make sure people are not negatively impacted by physical climate change. A key challenge is also making sure people are not negatively impacted by climate change transition risks (i.e., the response to climate change).

When considering low-carbon development, it is important to be aware of the breadth of project options that the AfDB can engage in, including any missed opportunities under the CCAP2. Fortunately, IPCC assessments address options for limiting climate change and its impacts. The feasibility of mitigation options are also important considerations. These include economic, technological, institutional, sociocultural, environmental/ecological, and geophysical considerations. These same issues need to be considered when thinking about adaptation options.

The AfDB is primarily focused on mobilizing and disbursing finance. However, the capacity of RMCs and other stakeholders to develop projects is limited in many cases. This puts the AfDB in the position

of having to support stakeholders at each stage of project development.

Given the goal of having climate-resilient low-emissions development and green economies, and the limited options for reducing GHG emissions in some sectors, the question of how to experiment and create new options becomes important, as well as testing new technologies and practices with the aim of demonstrating viability. The problem with these approaches is risk. It is unclear whether the AfDB has considered engaging in new technologies and practices or whether the AfDB has the capacity to deal with high-risk high-reward investments that as a portfolio could yield solutions that can be scaled.

In some cases, it is arguable that the AfDB has missed climate change and development targets due to high ambition levels, raising the question: to what extent do ambitious targets help? Ambitious targets can spur action, but presumably more risks need to be taken if transformative changes are to result (following the principle of risk and reward). The AfDB provides grants and loans but does not appear to have a venture capital-type arm or high-risk high-reward model that can be applied to climate finance. That said, grants can help as they do not need to be paid back, but targeting is still required on ambitious projects while allowing for a percentage of projects to fail.

The AfDB is better designed to support top-down large-scale climate initiatives than it is to support bottom-up small-scale initiatives or even bottom-up large scale initiatives. For example, the AfDB needs identifiable project owners to work with, typically in the form of a government or legally recognized enterprise with a track record that can be assessed. Grassroots organizations or wider social movements may lack legal status or a track record. Meanwhile, the transaction costs (e.g., in terms of administration, paperwork, and time required to process documents) are similar for small- or large-scale projects. Hence, to reduce the transition costs as a proportion of total project costs, there is a bias towards pursuing large-scale projects involving the disbursement of large volumes of finance.

With regards to whether the AfDB's activities can help address climate change, for example finance-related activities, knowledge generation, or project design activities, the answer is yes; but at the same time, the AfDB is not the only actor, and nor are finance, knowledge generation, or projects sufficient without wider engagement of other actors in Africa and mitigation efforts by actors outside of Africa.

Key challenges in collecting and compiling indicators include a lack of data for many indicators, and secondly, where data is available it is lacking for 2020, a key year to assessing progress. In many cases, data

series, other than the indicators reported as part of ADER, ended halfway through the period, for example in 2017 or 2018. This is because of the time required to collect and compile data nationally and then internationally.

Complicating matters further, measuring GHG emissions and emissions reductions, is complex, and assessing adaptation and resilience is equally if not more complex. Measuring mitigation and adaptation is challenging enough for organizations that have a single economic activity, but given the breadth of activities and projects the AfDB supports, measuring mitigation and adaptation across the portfolio of AfDB projects and activities is incredibly challenging.

A process of continuous improvement is required, including a mix of simple and complex assessment tools that can be applied, according to what is practical and needed.

Lastly, not all challenges can be addressed directly by the AfDB. Some challenges are areas of interest, such as climate change and global warming levels (Figure 4). The AfDB can influence GHG emissions and project design, for example, with RMCs and other partners. However, the Bank has greatest control with its own processes, levels of capacity, and the projects it engages with. As such, many of the recommendations made in the next chapter address the enabling environment and RMF Levels 3 and 4.



Chapter 7: Conclusion

The CCAP2 is really a strategic approach. The “Action Plan” encompasses such a large set of considerations, that in reality it is not a plan of action, but rather a statement of actions that the AfDB would either attend to internally or support RMCs with. Hence, while there are actions the AfDB can take to enhance the enabling environment and mobilize more climate finance, even these actions are strategic in nature, serving as preconditions for fulfilment of Pillars 1 and 2 on adaptation and mitigation across Africa.

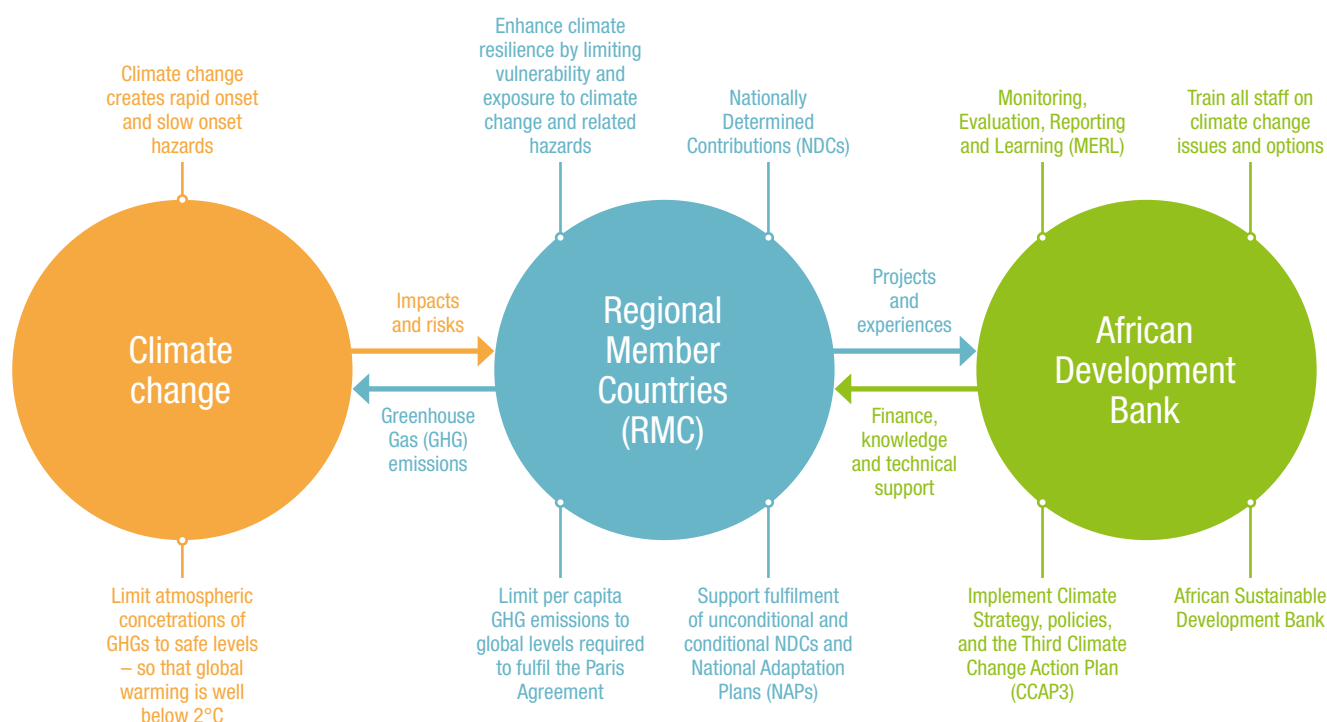
Climate change complicates everything. However, it is possible to unpack climate change into the challenges it creates and to organize recommendations around these challenges. Figure 47 highlights key challenges and elements of AfDB’s work with RMCs. Climate change creates both rapid- and slow-onset hazards to RMCs and their development. The AfDB supports RMCs to reduce these hazards through projects reducing exposure and vulnerability to them. RMCs set out their climate change and development ambitions in NDCs and the AfDB supports RMCs in delivering their NDCs alongside other development ambitions. As such, the AfDB has a wide range of projects and

experiences to draw upon and learn from through MERL exercises. Based on these experiences, the AfDB can train its own staff as well as stakeholders from RMCs, including government, business, and civil society stakeholders as well as even students destined to form the next generation of officials, entrepreneurs, and activists.

A key question for the AfDB to consider is how far it wants to go making climate change, green growth, and sustainable development key foci. For example, is the AfDB willing to become the “African Sustainable Development Bank”? Regardless of the lessons from the evaluation or recommendations which are implemented, it is important for the AfDB to have a clear strategy, understanding of its own “theories of change,” and how its activities influence climate change and development. Aligning policy with its climate change strategy will help along with developing another CCAP and setting of targets. The AfDB should continue to focus on metrics already reported and to evaluate its progress through a climate change lens.

Fundamentally, the AfDB needs to align all its finance with climate-resilient low-carbon development. This

Figure 47: Areas of focus for future AfDB climate strategies, policies and action plans



does not mean all finance needs to be climate finance, but rather all finance needs to be climate-compatible (i.e., doing no harm). Finance should also be targeted towards supporting the implementation of NDCs, adaptation plans, and other climate change-related ambitions of RMCs and stakeholders. In doing so, the AfDB will help limit per capita emissions growth and

ultimately support fulfilment of the Paris Agreement's purpose and the UNFCCC objective. These include limiting GHG emissions and the accumulation of GHGs in the atmosphere to levels that allow ecosystems to adapt naturally, not threatening food production, and allowing economic development to proceed in a sustainable manner.



May-19

17:00

Chapter 8: Recommendations

The AfDB's CCAP2 and related activities have generated a wealth of experiences, challenges, and lessons. This chapter synthesizes challenges and lessons into a series of recommendations. While previous sections and chapters have been organized according to the CCAP pillars, the recommendations below are organized thematically, in consideration that the evaluation does not pre-suppose future action plans, climate strategies, or policies will necessarily follow current CCAP pillars.

From the evaluation of CCAP2, a series of recommendations are made. These recommendations address: the climate change pillars; the need for evidence-driven policies, strategies, and plans; atmospheric GHG removals; the RMF levels addressed by action plans and strategies; the need for theories of change; considering new financial approaches; guidance documents and tools; monitoring, evaluation, and reporting; annual reports; internal capacity; external capacity; knowledge generation and sharing; communication; limiting climate change physical risks; limiting transitions risks; and increased focus on sustainable development, green growth included.

Climate change pillars

It is recommended that the current CCAP pillars be retained as they match AfDB's RMF levels well while also providing a comprehensive framework for organizing climate change activities and reporting.

Evidence-driven policies, strategies, and plans

When considering climate-resilient and low-carbon development, it is important to be aware of the breadth of project options that the AfDB can engage in, including any missed opportunities under the CCAP2. Fortunately, the IPCC assessments and related literature such as Project Drawdown address adaptation and mitigation options. Future CCAPs should periodically and comprehensively refer to IPCC assessments and related literature that provide comprehensive lists for adaptation, mitigation, and related approaches and activities. This can help with the identification of priority areas.

Special attention should be paid to the potential of climate actions for development benefits while enhancing climate resilience and limiting atmospheric concentrations of GHGs. The recent publication of the Sixth Assessment Report provides an opportunity to identify new adaptation and mitigation opportunities for RMCs, private sector investors, and civil society.

Atmospheric carbon dioxide removals

Given that atmospheric carbon dioxide removals appear increasingly necessary to fulfil the Paris Agreement, the AfDB should explore opportunities with RMCs and others, including land use-related options as well as technology-based options for removals.

RMF levels addressed by action plans and strategies

Future action plans should focus on RMF Levels 3 and 4 as these are within the control of the AfDB (see Figure 4), while a climate change strategy should focus on RMF Level 2 while also addressing RMF Level 1. Level 1 addresses the ultimate outcomes that the AfDB is striving for (i.e., climate-resilient low-carbon development). Level 2 engages projects and activities that the AfDB can directly influence.

Consider new financial approaches and models

Given the scale of climate change challenges – for instance, when it comes to limiting GHG emissions while growing economic activities or enhancing climate resilience – there is a question as to whether incremental change is sufficient or whether greater risks need to be taken in pursuit of greater change, such as adopting a venture capital approach. The GCF is helping drive the transformation required, but are there other opportunities and models that can be applied either within the AfDB or with support from the AfDB? Having a clear theory of change around how success might be scaled up is very important if such an approach is to be taken.

Support early-stage activities

A special fund should be established that is resourced internally to support early-stage studies, technical assistance, and/or business development for projects with the potential to attract external climate finance.

Guidance and tools

Tools should be developed to help identify climate change-related adaptation and mitigation opportunities related to projects, such as total cost-benefit analyses and other methods that draw upon evidence-based research and related evaluations. IPCC assessments include many tables that address climate-resilient low-carbon development options that can be adapted into tools. These tools can be used internally and shared with RMCs, stakeholders, and other parties interested in climate change and development.

Monitoring, evaluation, and reporting

The AfDB needs to further develop its in-house capacity for monitoring, evaluating, and reporting, including GHG emissions related to each of its projects. This includes updating GHG emissions accounting systems.

Monitoring land use changes associated with AfDB projects can help with GHG emissions accounting. This will require project proposals to indicate the areas they will be active in, and locations where projects are delivered. For some projects, these locations will be obvious, for example, with reference to infrastructure. In other cases, it may be more complex; for example, voluntary participation by farmers in an agricultural project may make identifying specific farms challenging.

If projects are impacted by climate change, then they should report resilience and adaptation activities; and if a project directly creates GHG emissions, they should report GHG emissions and mitigation efforts. Reporting should be made to the extent that is possible. Where there is limited confidence in the GHG emissions or adaptation elements of a project, this should be indicated using a simple system, e.g., stating high confidence, moderate confidence, or low confidence.

By having our own monitoring and reporting in order, the AfDB will be able to negotiate international monitoring and reporting standards with other multilateral development banks based on experience of what works across Africa.

Annual reports

Annual reports should be published annually.

Internal capacity

A common theme in evaluations of funds and activities related to CCAP2 is the need for staff within the AfDB to be aware of climate change mitigation, low-carbon development, adaptation, and climate resilience in both design and operational stages of projects. This means enhancing the capacity of staff. This is especially important for task managers, just as much for task managers to have time available to address adaptation and mitigation.

External capacity

Another common theme is the need for climate change-related capacity as well as general project-related capacity in RMCs and the parties that engage with the AfDB. Much like the need for internal capacity, parties engaging with the AfDB need to have an evidence-based understanding of climate change mitigation and adaptation, and practical ideas on how these issues can be incorporated into their own activities, policies, as well as AfDB-related projects or activities.

External capacity development should be designed as a continuous program at a scale capable of reaching everyone that wants to learn about climate-resilient low-carbon development as well as green growth in general; how to access AfDB funds; prepare project proposals; plan and deliver projects while also monitoring, evaluating, and reporting on the project; its finances and related costs; and outputs and outcomes.

With regards to project capacity, this includes the capacity to prepare project proposals, bid for funds, manage projects, monitor and report finances, manage procurement processes, as well as monitor, evaluate, and report on progress. The AfDB should consider training programs and materials, including computer-based training, and working with stakeholders on project proposal development.

The AfDB should consider partnering with universities to train students in practical aspects of project finance, project management, and monitoring, evaluation, and reporting. The aim is to have people train as soon as possible, ensure students understand the quality of projects and project management required to access finance, and reduce the in-process training required.

The AfDB is strategically placed to develop a wide ever-growing African pool of capable people and reliable project delivery partners.

Knowledge generation and sharing

The AfDB has an extensive portfolio of projects and as such a vast treasure trove of knowledge. It is recommended that the AfDB continue to study past projects and related practices, forming an evidence base for training as well as further improvements in processes based on lessons learned.

The AfDB's PECG in partnership with the United Nations Economic Commission for Africa (UNECA) and the African Union should review and summarize the findings of the IPCC's Sixth Assessment Report, what they mean for Africa, and publish a series of summaries. The AfDB should also consider developing guidance tools for RMCs and other stakeholders to use and linking users with IPCC findings relevant to them, such as when it comes to adaptation or mitigation options.

Communication

Communicating these knowledge products is important to maximize the impact of lessons learned. The next iteration of the CCAP should include a communications strategy and information-sharing platforms. Likewise, communications should also address rules and procedures, making sure stakeholders are aware of AfDB expectations when it comes to funding and project delivery. Communication

can include online learning tools and collaboration with educational institutions. A communications strategy should also include how the AfDB can collect feedback and communications from stakeholders.

The AfDB needs to continue its outreach activities, with regular media releases, publications, and other knowledge products using a variety of media targeted towards governments, businesses, and civil society and research audiences. A new and updated communications strategy should accompany the next climate change action plan and strategy.

Limit climate change and related physical risks

All projects should be screened in terms of climate change and related physical hazards. Wherever possible, exposure to climate change and related hazards should be reduced (e.g., choosing a different location) and vulnerability reduced (e.g., using improved construction standards).

Limit transition risks and the possibility of “stranded assets”

To ensure low-carbon development, the design life of projects is important. Projects for infrastructure or systems with a long design life should have very low GHG emissions, to avoid lock-in or the assets related to the project becoming stranded later. This will limit transition risks.

Increased focus on sustainable development?

Strategic decisions need to be made regarding the extent to which the AfDB wants to focus its activities on sustainable development and, in doing so, include considering climate change implications in all decisions made by AfDB staff. Going full “sustainability,” such as through becoming the “African Sustainable Development Bank,” will help transition staff into considering climate change considerations in their decisions. This would include updating job descriptions and performance evaluation metrics. Alternatively, climate will likely remain just another aspect to consider for an already occupied staff working on sometimes challenging conditions.



Glossary

Adaptation: The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. *Source: IPCC 2014.*

Climate change: A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer (IPCC 2014). Hence, climate change is apparent in long-term average weather data.

Climate finance: Local, national, or transnational financing—drawn from public, private, and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change. *Source: UNFCCC 2021.*

Box 13: Climate finance

There is no agreed-upon definition of climate finance. However, the term ‘climate finance’ is applied both to the financial resources devoted to addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change.

The literature includes several concepts in these categories, among which the most commonly used include the following:

- **Incremental costs:** The cost of capital of the incremental investment and the change of operating and maintenance costs for a mitigation or adaptation project in comparison to a reference project. It can be calculated as the difference of the net present values of two projects. See also Additionality.
- **Incremental investment:** The extra capital required for the initial investment towards a mitigation or adaptation project in comparison to a reference project. See also Additionality.
- **Total climate finance:** All financial flows whose expected effect is to reduce net greenhouse gas (GHG) emissions and/or to enhance resilience to the impacts of climate variability and the projected climate change. This covers private and public funds, domestic and international flows, and expenditures for mitigation and adaptation to current climate variability as well as future climate change.
- **Total climate finance flowing to developing countries:** The amount of total climate finance invested in developing countries that comes from developed countries. This covers private and public funds.
- **Private climate finance flowing to developing countries:** Finance and investment by private actors in/from developed countries for mitigation and adaptation activities in developing countries.
- **Public climate finance flowing to developing countries:** Finance provided by developed countries’ governments and bilateral institutions as well as by multilateral institutions for mitigation and adaptation activities in developing countries. Most of the funds provided are concessional loans and grants.

However, it should be noted that the IPCC in its 5th Assessment Report stated there is no agreed-upon definition of climate finance but did unpack various types of finance related to climate change (see Box 13).

Evaluation framework: An organizational tool that links evaluation questions – such as whether goals, objectives, outcomes, or outputs have been achieved – with indicators, data sources, and data collection methods. *Source: Author.*

Indicators: Simplified information that is presented with the aim of synthesizing complex information (UN 2012). Indicators are a means of summarizing, simplifying, and communicating information to decision makers and other interested parties. They are used for making comparisons over time, within and between countries, economic activities, and groups of people, and for identifying factors that lead towards the fulfilment of plans, policies, and strategies. Importantly, indicators are normative with either positive or negative trends. Indicators can also reduce the volume of information used to make evaluations and recommendations (SNZ 2004). Other important characteristics of indicators are listed in Box 14.

Indicators can be quantitative or qualitative. Quantitative indicators have the advantage of being able to give a sense of scale to issues; however, qualitative indicators and information can provide valuable context and insights that quantitative indicators may miss. The evaluation draws on a mix of quantitative indicators and other qualitative information from evaluation reports based on activities related to the CCAP2.

Box 14: Indicator criteria

To the extent possible, indicators should also be:

- Valid and meaningful;
- Sensitive and specific to the underlying phenomenon;
- Grounded in research;
- Statistically sound;
- Intelligible and easily interpreted;
- Related to other indicators (if possible);
- Facilitate international comparison;
- Able to be disaggregated;
- Consistent over time;
- Timely;
- Linked with policy or emerging issues; and
- Compel, interest, and excite.

Source: SNZ 2004

Mitigation: A human intervention to reduce the sources or enhance the sinks of GHGs. The IPCC also assesses human interventions to reduce the sources of other substances which may contribute directly or indirectly to limiting climate change, including the reduction of particulate matter emissions that can directly alter the radiation balance (e.g., black carbon) or measures that control emissions of carbon monoxide, nitrogen oxides, volatile organic compounds, and other pollutants that can alter the concentration of tropospheric ozone which has an indirect effect on the climate. *Source: IPCC 2014b.*

Multi-donor trust fund: A type of pooled funding designed to receive contributions from donors to support specific national, regional, or global development results. *Source: UNDG 2015.*

Physical risk: Potential physical impact of climate change. *Source: Webb 2021 adapted from Carney 2015.*

Stranded assets: Stocks (i.e. items that hold value for periods greater than a year) that lose value or turn into liabilities before the end of their expected economic life. *Source: adapted from Paun et al. 2015.* Carbon Tracker, which introduced the concept of stranded assets in the context of climate change, states that “stranded assets are now generally accepted to be fossil fuel supply and generation resources which, at some time prior to the end of their economic life (as assumed at the investment decision point), are no longer able to earn an economic return (i.e. meet the company’s internal rate of return), as a result of changes associated with the transition to a low-carbon economy” (Carbon Tracker 2017).

Transition risk: Potential disruption due to adjustment towards a climate-resilient low-GHG emissions economy. *Source: Webb 2021 adapted from Carney 2015.*

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Annex 1: The African Development Bank Charter and climate change

So, what role should the AfDB have addressing climate change, taking into account the AfDB Charter and the characteristics of the climate change problem?

The AfDB Charter sets out in broad terms what AfDB can and should do. Article 1 of the updated Charter states that the AfDB should “contribute to the sustainable economic development and social progress of its regional members individually and jointly.” This reflects the need to consider development in terms of sustainability while focusing on benefiting African members of the AfDB (i.e., Regional Member Countries; RMCs).

Article 2 of the AfDB Charter sets out in greater detail the overarching types of activities the AfDB can engage in. This includes “using resources at its disposal for the financing of investment projects and programmes,” “mobilising... resources for the financing of... investment projects and programmes,” “promote investment” all with the purpose of enhancing “economic development or social progress of its regional members.” Finance can come from inside or outside Africa. In addition to finance, Bank functions include “to undertake, or participate in, the selection, study and preparation of projects, enterprises and activities contributing to

development.” Furthermore, the AfDB can “provide... technical assistance... needed in Africa for the study, preparation, financing, and execution of development projects or programmes.” The Bank can also undertake other unspecified activities that advance its purpose (i.e. Article 1). Article 2 of the Charter also states that the Bank can cooperate with other development institutions in Africa, as well as other international organizations and institutions “concerned with the development of Africa.”

To deliver the Charter, the AfDB is focused on the High 5s consisting of: Light up and power Africa; Feed Africa; Industrialize Africa; Integrate Africa; and Improve the quality of life for people of Africa. There is a clear strategic overlap between the AfDB's Charter, High 5s, and climate change. Mitigation efforts depend on technologies and practices used especially when it comes to energy, industrialization, land use, and food production. Meanwhile, climate change is anticipated to increasingly impact human and managed systems, including agriculture and infrastructure, as well as the health of people. As such, climate change is anticipated to impact the AfDB's Strategic High 5s while AfDB efforts to fulfil the High 5s will also have an influence on GHG emissions and climate resilience.

Annex 2: Climate change and development context

Introduction

The evaluation of climate change and development context in Africa starts with the level of atmospheric warming over the continent. The second indicator addresses the global emissions gap between the path we are on and the path we need to follow. The worse the gap, the greater the likelihood that climate change will be a hazard to regional member countries (RMCs). With regards to climate change being a hazard, it is also important to have indicators of risk.¹ Intergovernmental Panel on Climate Change (IPCC) assessments include maps of physical impacts and maps of physical risks,² and an analysis of the “risk of future impacts” at different levels of global warming.

In addition to physical risks, there are also transition risks.³ Physical and transition risks are increasingly being reported in climate-related financial disclosures.⁴ For transition risks, a key concern includes the potential for stranded assets.⁵ This includes fossil fuel reserves and related infrastructure as well as technologies that use fossil fuels to generate electricity.

Lastly, this chapter addresses adaptation and wider sustainable development-related goals. This includes Nationally Determined Contributions (NDCs) and related Sustainable Development Goals (SDGs).

Table 15: Climate change and development performance indicators

Theme	Results chains/Expected result	Performance indicator	Baseline (2015)	Expected (2020 or 2025)
Development progress in Africa: What development progress is Africa making?				
Global warming	Continental warming	Rates of global warming in Africa	Context and trends	
Current emissions pathway	Reducing the emissions gap	Latest UNEP global emissions gap analysis for 2C and 1.5C taking into account conditional and unconditional NDCs		
Physical impacts and risks	Risk of impacts	IPCC Reasons for Concern (RFCs)		
	Climate change impacts in Africa	IPCC assessment of impacts in Africa		
	Climate change risks in Africa	IPCC assessment of climate change risks to Africa		
Transition risk	Potential for stranded assets	Electricity generation capacity using fossil fuels		
	Potential for stranded assets	Oil, gas, and coal reserves		
NDCs and development	Strengthening the global response: Mitigation and adaptation	Number of African countries with INDCs or NDCs submitted		
	African economies transitioning to low-carbon growth (mitigation)	Unconditional and conditional emissions targets (from NDCs)		
	SDGs related to NDC	Frequency of SDG goals and targets related to NDCs at level of Africa		
Adaptation policy	National adaptation plan, strategy, law, or policy in place	Map of countries with a national adaptation plan, strategy, law, or policy in place		
Climate change and development	Resilience and physical risk	Climate risk index, vulnerability, and readiness		
	Human development	Human development index		
	Emissions and equity	Per capita emissions (compared to global average levels required to limit climate change)		

¹ Risk: The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values.

² Physical risk: Potential physical impacts of climate change.

³ Transition risk: Potential disruptions due to adjustments towards a climate-resilient low-GHG emissions economy.

⁴ Transition risks are increasingly being reported according to the recommendations from the Task Force on Climate-Related Financial Disclosures (TCFD)

⁵ Stranded assets: Stocks (i.e. things that hold value for periods greater than a year) that lose value or turn into liabilities before the end of their expected economic life.

Current situation

Atmospheric warming

The Paris Agreement includes the aim of limiting global warming to “well below” 2°C while “pursuing efforts” to limit global warming to 1.5°C from preindustrial times (UNFCCC 2015). Currently we have approximately 1°C of global warming. Meanwhile, in Africa we have had over 1°C of warming since the 1800s. Even though there are temperature variations over time, there is a clear trend towards warming. It is important to be aware that levels of atmospheric warming and other climatic changes differ across Africa and across seasons (Figure 48). This has implications for the distribution of impacts.

Concerns related to climate change go beyond warming of the atmosphere and include impacts on the physical systems, biological systems, as well as human and managed systems (i.e. people, property, and livelihoods). The IPCC has made assessments of climate change impacts, and found Africa is already

being impacted. Figure 49 shows that climatic changes have been observed in terms of warming, precipitation, and the frequency of hot, cold, and wet events. Due to these changes, there are impacts on physical and biological systems, as well as human and managed systems. This includes anything from South African farmers adapting to these changes to impacts on Sahel fruit trees. Climate change is also considered to have had a minor role impacting Great Lakes fisheries and Kenyan highland malaria occurrences.

It should be noted here that it takes a great deal of research and data to attribute climate change impacts. There are likely to be more impacts, but data may be lacking or research has not yet been undertaken.

Greenhouse gas emissions

With regards to current global greenhouse gas (GHG) emissions trends, the UNEP Emissions Gap Report (2020) shows current pledges by countries in the form of NDCs are inadequate to limit global

Figure 48: Regional warming for the 2006–2015 decade relative to 1850–1900

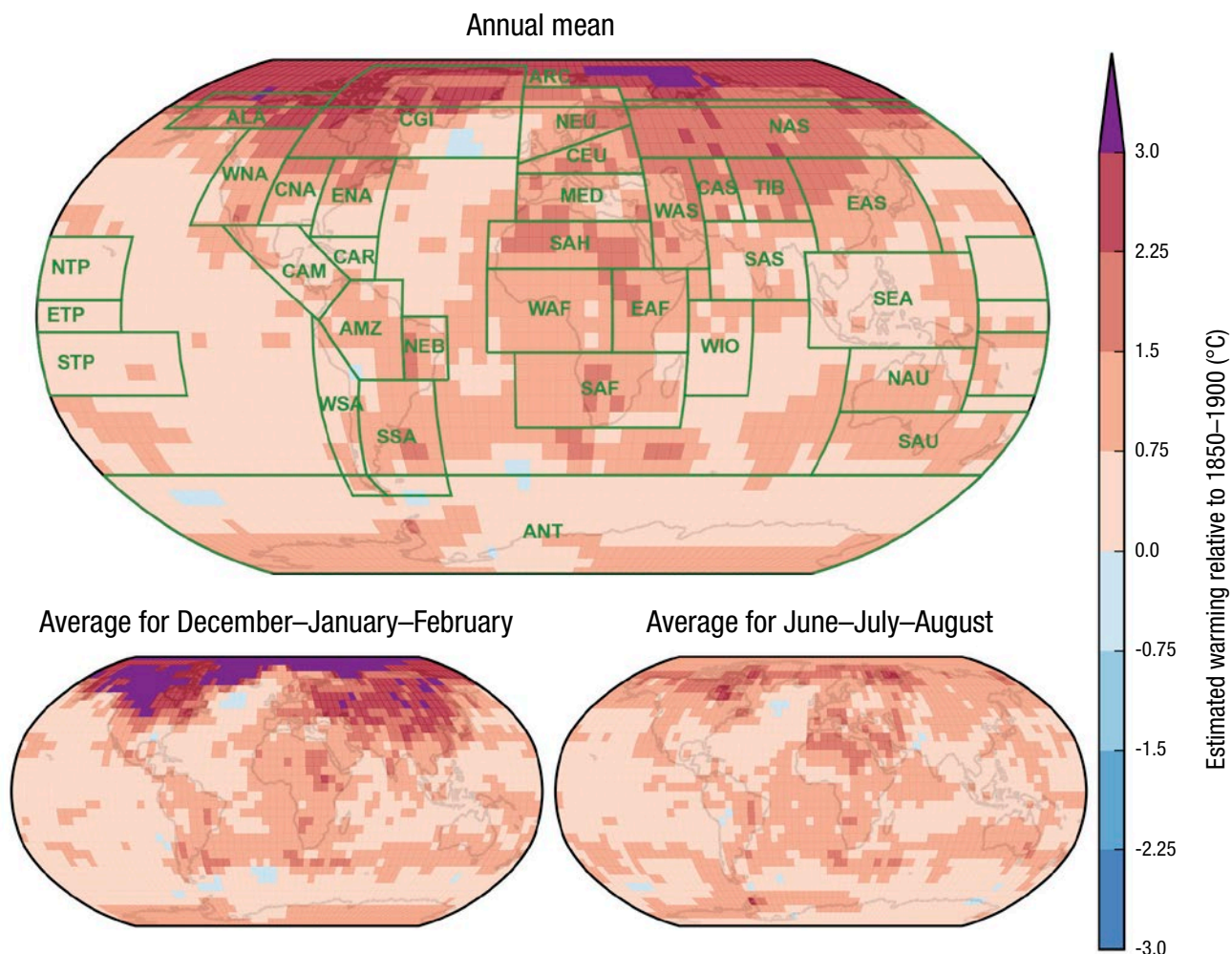
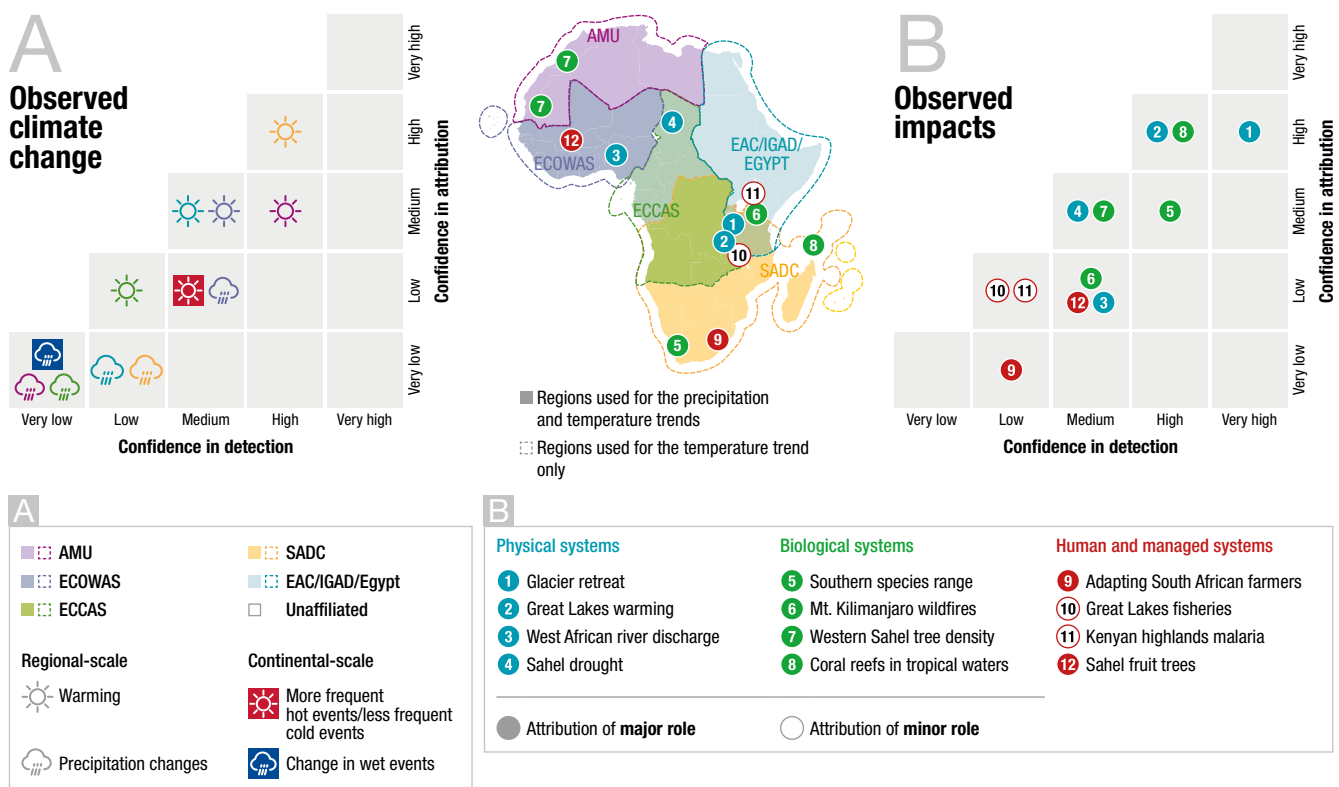


Figure 49: Observed climate changes and impacts across AfricaSource: Niang *et al.* 2014

warming to well below 2°C from preindustrial times. Hence, overshoot scenarios are a real possibility, meaning the accumulation of GHG emissions in the atmosphere driving global warming higher than 2°C. Furthermore, most GHG emissions scenarios that limit climate change to well below 2°C of warming include removing carbon dioxide directly from the atmosphere, and likewise, the IPCC identified atmospheric carbon dioxide removals by 2050 as being a key characteristic of 1.5°C pathways. Given the risk of there being global warming overshoot, this raises a question: How much physical risk is there to African development at 1.5°C and 2°C of global warming?

Climate change-related risks to development

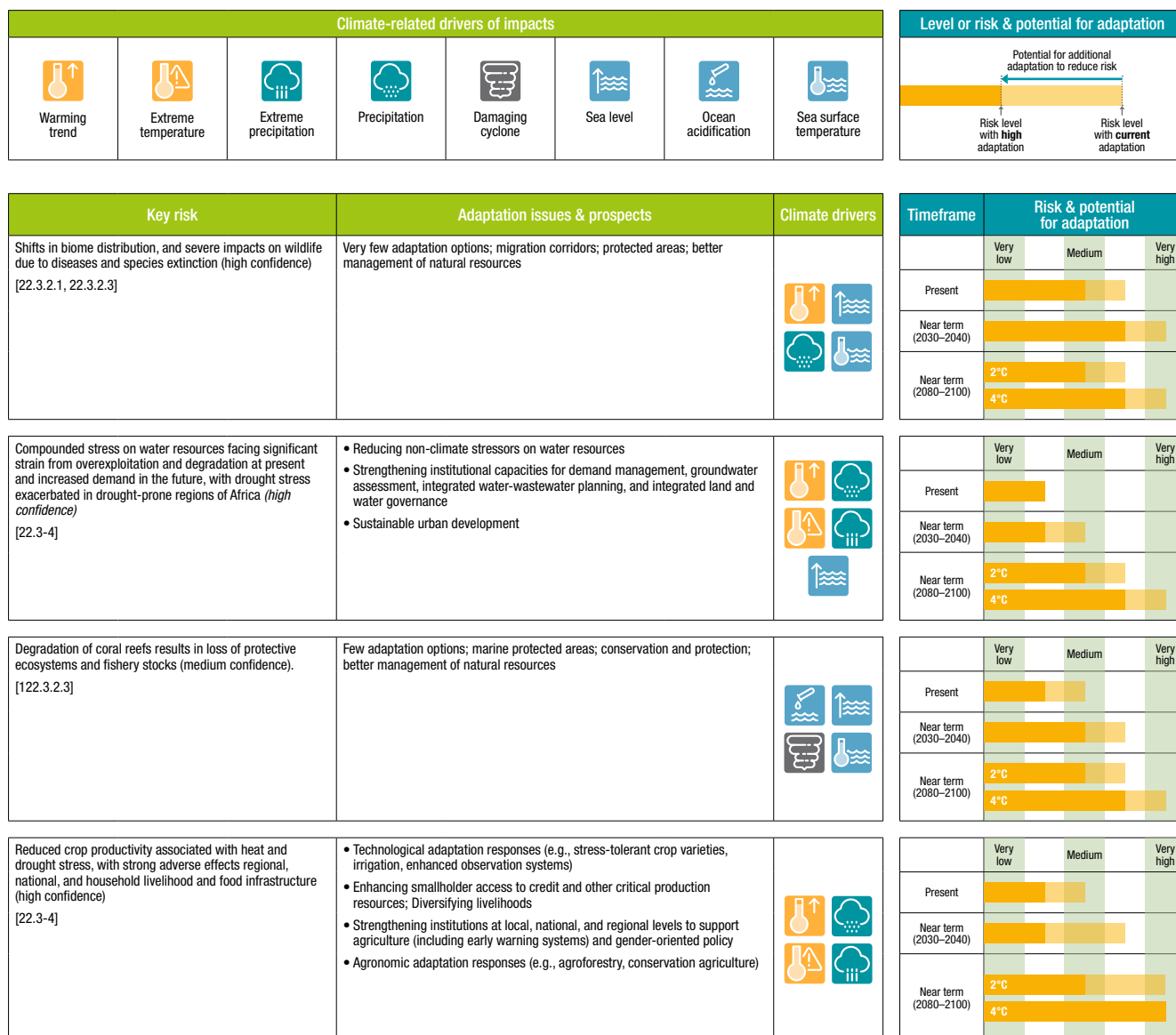
Climate change-related risks include physical risks and transition risks.⁶ Physical risks regard potential physical impacts of climate change while transition risks regard potential disruption due to adjustments towards a climate-resilient low-GHG emissions economy.

Physical risks to development

The IPCC highlighted five overarching “reasons for concern” when it comes to climate change, and estimated the risk of impacts on natural, managed, or human systems according to the level of global warming. Globally, we already have around 1°C of global warming. However, with 1.5°C of global warming the risk of impacts are generally moderate to high, and at 2°C the risk of impacts are moderate to very high.

The IPCC (2014) also included an assessment of physical risks within Africa in its Fifth Assessment Report (Figure 50). The IPCC found nine key physical risks within Africa, consisting of: shifts in biome distribution; compound stress on water resources; degradation of coral reefs; reduced crop productivity; adverse effects on livestock; changes in incidence and geographic range of diseases; undernutrition; increased migration; and sea level rise and extreme events. For each of these physical risks, the IPCC highlighted related adaptation issues and prospects, climatic drivers, timeframes, risk levels; and the potential for adaptation. These are areas that could form a focus for future AfDB climate policy, strategy, and action plans.

⁶ Physical and transition risks are increasingly being reported in climate-related financial disclosures, for example, following the recommendations of the Task Force on Climate Related Financial Disclosures (TCFD).

Figure 50: Climate risks within Africa and the potential for adaptation to limit these risksSource: Niang *et al.* 2014

With regards to AfDB priorities and the High 5s, there is a challenge feeding Africa while also addressing compound water stress, reduced crop productivity, adverse effects on livestock, and the potential for undernutrition. Improving the quality of life for Africans also faces challenges related to changes in the incidence and geographic range of vector and waterborne diseases. AfDB support for development goals can help in this regard, for example, in relation to Water Sanitation and Health (WASH). Integrate Africa may face challenges associated with sea level rise and regional infrastructure passing through coastal areas. With regards to improving the quality of life for Africans, climate-related migration may

also create challenges in addition to sea level rise disrupting coastal communities.

Figure 50 also highlights that adaptation measures only reduce impacts, rather than eliminating impacts (see the bars on the right).

Transition risks to development

A key concern driving the reporting of transition risks is the potential for stranded assets.⁷ This includes fossil fuel reserves and related infrastructure as well as technologies that use fossil fuels to generate electricity.

7 Stranded assets: Stocks (i.e. things that hold value for periods greater than a year) that lose value or turn into liabilities before the end of their expected economic life.

Key risk	Adaptation issues & prospects	Climate drivers	Timeframe	Risk & potential for adaptation		
				Very low	Medium	Very high
Adverse effects on livestock linked to temperature rise and precipitation changes that lead to increased heat and water-stress, and shifts in the range of pests and diseases, with adverse impacts on pastoral livelihoods and rural poverty (<i>medium confidence</i>) [22.3.4.2, 22.4.5.2, 22.4.5.6, 22.4.5.8]	Addressing non-climate stressors facing pastoralists, including policy and governance features that perpetuate their marginalization, is critical for reducing vulnerability. Natural resource-based strategies such as reducing drought risk to pastoral livelihoods through use of forest goods and services hold potential, provided sufficient attention is paid to forest conservation and sustainable management		Present			
			Near term (2030–2040)			
			Near term (2080–2100)	2°C		
				4°C		
Changes in the incidence and geographic range of vector- and water-borne diseases due to changes in the mean and variability of temperature and precipitation, particularly along the edges of their distribution (<i>medium confidence</i>) [22.31]	<ul style="list-style-type: none"> Achieving development goals, particularly improved access to safe water and improved sanitation, and enhancement of public health functions such as surveillance Vulnerability mapping and early warning systems Coordination across sectors Sustainable urban development 		Present			
			Near term (2030–2040)			
			Near term (2080–2100)	2°C		
				4°C		
Undernutrition, with its potential for life-long impacts on health and development and its associated increase in vulnerability to malaria and diarrheal diseases, can result from changing crop yields, migration due to weather and climate extremes, and other factors (<i>medium confidence</i>) [22.3.5.2]	Early warning systems and vulnerability mapping (for targeted interventions); diet diversification; coordination with food and Agriculture sectors; improved public health functions to address underlying diseases		Present			
			Near term (2030–2040)			
			Near term (2080–2100)	2°C		
				4°C		
Increased migration leading to human suffering, human rights violations, political instability and conflict (<i>medium confidence</i>) [22.3.6, 22.4.5, 22.5.1.3]	Adaptation deficit to current flood and drought risk; effective adaptation includes sustainable land management and modification of land use, drought relief, flood control and effective regional and national policy and legislative environment that allows for flexible adaptation responses		Present			
			Near term (2030–2040)			
			Near term (2080–2100)	2°C		
				4°C		
Sea level rise and extreme weather events disrupt transport systems, production systems, infrastructure, public services (water, education, health, sanitation), especially in informal areas (flooding) (<i>medium confidence</i>) [22.3.7, 22.4.4.4, 22.4.4.6, 22.4.5.6, 22.4.5.71]	Early warning systems and vulnerability mapping (for targeted interventions); diet diversification; coordination with food and Agriculture sectors; improved public health functions to address underlying diseases		Present			
			Near term (2030–2040)			
			Near term (2080–2100)	2°C		
				4°C		

Table 16 shows that quantities of gas, oil, and coal reserves that could become stranded as restrictions, market conditions, and technologies (i.e., the transition) makes these resources unviable to extract for the purposes of combustion. Africa has large natural gas reserves, along with oil and coal reserves. There is a risk that infrastructure put in place to extract and refine these resources may also become stranded, including oil refineries.

From Figure 51, renewable energy makes up only a small part of Africa's installed energy capacity whilst the combustion-based electricity generation capacity has grown creating the risk of stranded assets. The need for energy to light and power Africa is indisputable, but not enough of this energy is coming from renewable energy sources, hence the growing transition risk. Eventually the generation of electricity

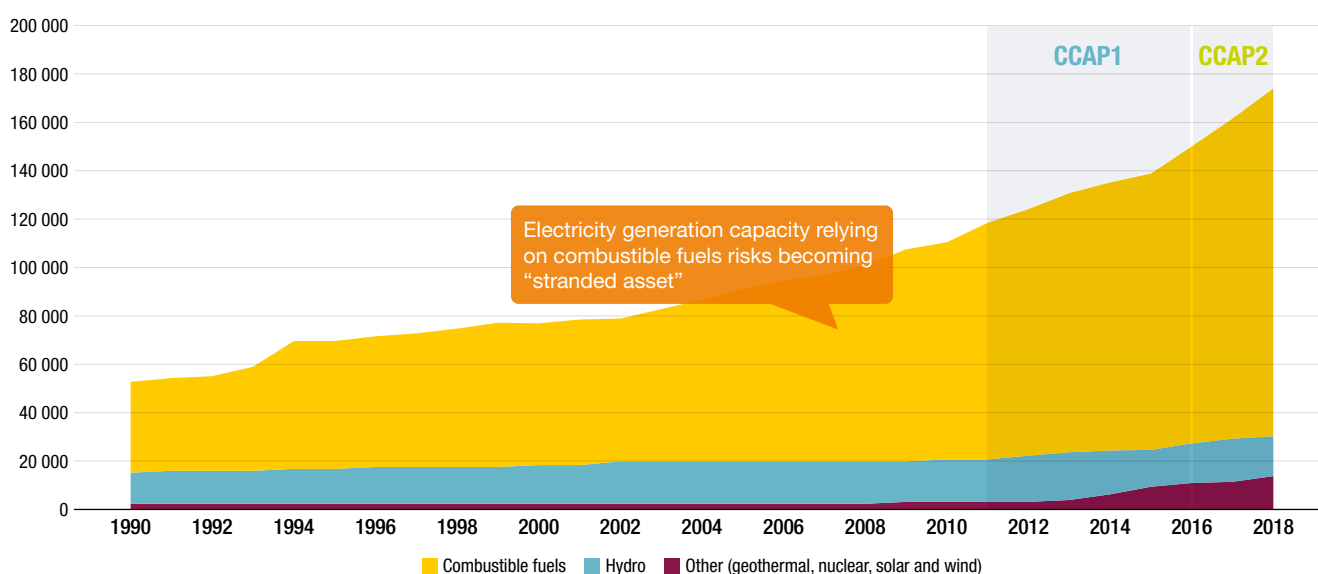
Table 16: Africa's fossil fuel reserves and oil refinery capacity in petajoules at risk of becoming stranded assets

Reserves (petajoules)	
Gas	120,573,130
Oil	717,828
Coal	382,016
Annual capacity (petajoules)	
Oil refinery	6,670

Source: BP 2020

Fossil fuel reserves and oil refinery capacity risk becoming "stranded assets"

from combustible fuels will need to be replaced by low- and zero-carbon energy sources, in particular renewable energy generation capacity.

Figure 51: Africa's electricity generation capacity including capacity at risk of becoming stranded assets**Net installed capacity (megawatts)**

Source: UN Data

Climate change and other priorities

AidData (2018) noted that globally "leaders emphasize education, jobs, and strong institutions, but turn a deaf ear to climate change and other environmental goals." This also applies to Africa (Figure 52) with climate change only appearing

in the top six ranked SDGs for 23.6% of leaders surveyed from Sub-Saharan Africa (SSH) and 11.1% of leaders surveyed from the Middle East and North Africa (MENA) region (Figure 52). Importantly, it is not just leaders that have climate change listed near the bottom of their priorities. SSH and MENA

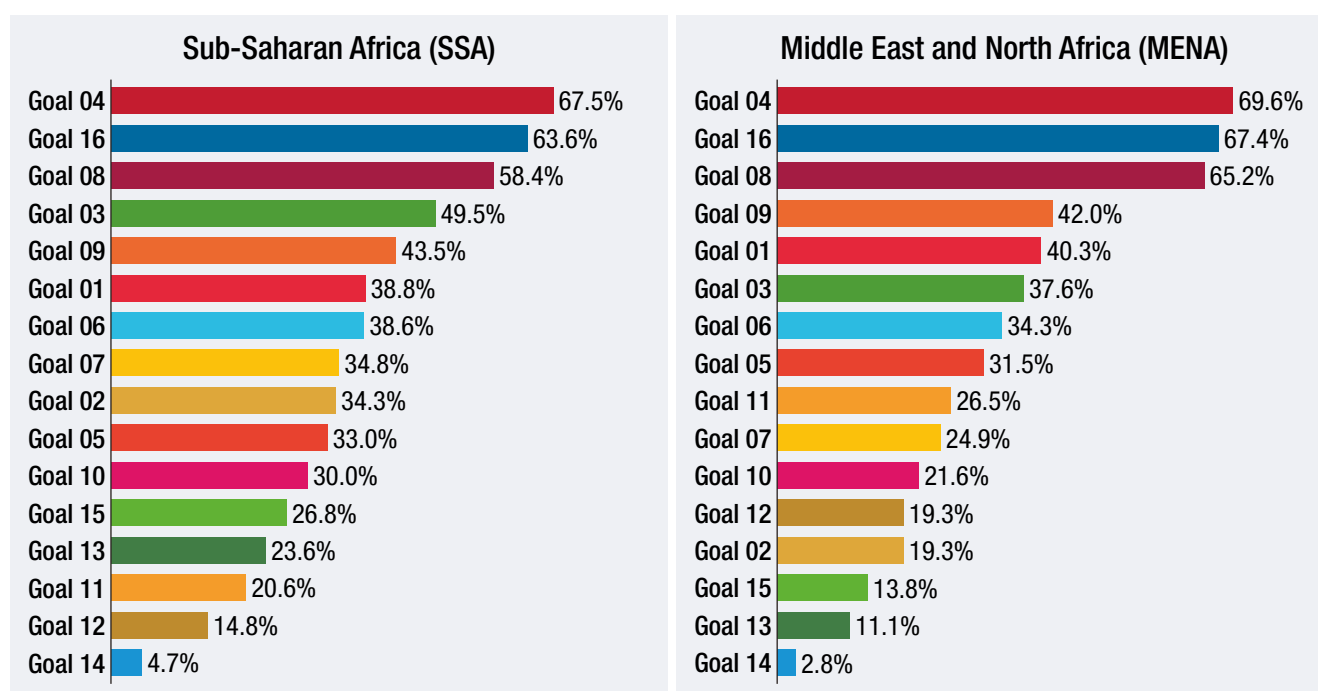
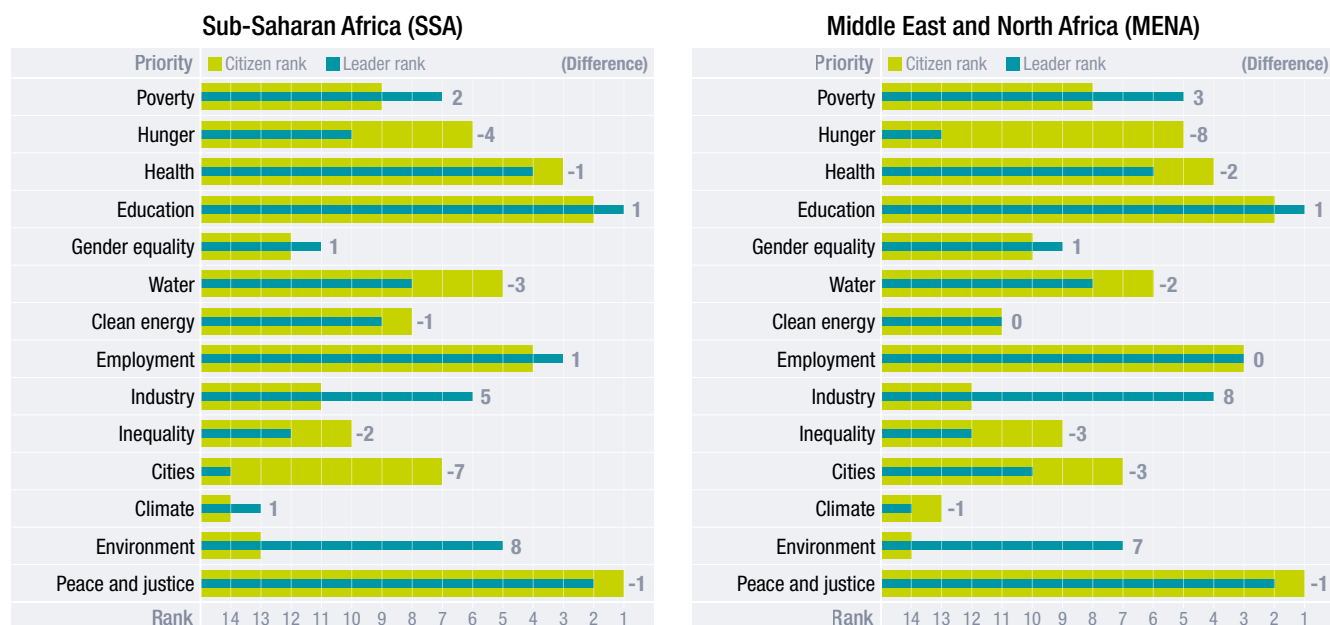
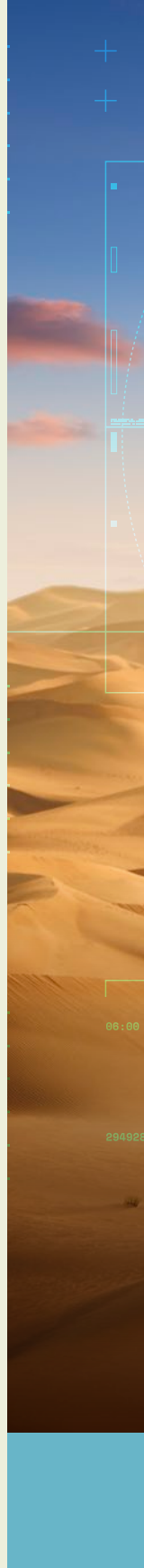
Figure 52: Percentage of respondents who identified an SDG goal as one of their top six prioritiesSource: Custer *et al* 2018

Figure 53: Priorities of leaders and citizens in Sub-Saharan Africa as well as the Middle East and North AfricaSource: Custer *et al* 2018

citizens surveyed as part of the UN's MY World Survey (UNDG, 2013) also ranked climate change low on their list of priorities (Figure 53). Note: The data presented in Figure 53 is from AidData's 2017 Listening to Leaders Survey and the UN's MY World Survey (UNDG, 2013).

Importantly, SDGs 4 (quality education), 16 (peace and justice), and 8 (decent work and economic growth) feature at the top of leaders' priorities (Figure 52). Moreover, peace and justice, education, and health all featured highly in the priorities of citizens and leaders (Figure 53).

AidData (2018), in their analysis, noted: "Comparatively, leaders turn a deaf ear towards climate change and other environmental goals. Despite considerable international attention in recent years, individual environmental issues related to climate action (SDG13), life on land (SDG15), life below water (SDG14), and responsible consumption and production (SDG12) fall to the bottom of most leaders' development priorities. One possible explanation: leaders are loath to tackle issues that require large upfront costs in exchange for uncertain future benefits."



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