THE AFRICAN DEVELOPMENT BANK
AT THE UNFCCC COP21 MEETING

# AFRICA'S CLIMATE OPPORTUNITY: ADAPTING AND THRIVING

AFRICAN DEVELOPMENT BANK GROUP

TOUS ENSEMBLE
POUR LE CLIMAT

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African Development Bank Group
**The African Development Bank at the UNFCCC COP21 meeting — Africa's climate opportunity: Adapting and thriving**



Note: In this report, "$" refers to US dollars.

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# Contents


VI

# Foreword

Concerted global action on climate change matters profoundly for Africa.

Of all of the world's continents, Africa is the most vulnerable to the impacts of climate change. With so many Africans living close to the poverty line, climate change could roll back much of our hard-won progress on development.

Yet the shared commitment to a low-carbon future that will emerge from COP21 is also a huge opportunity for Africa. The move towards a greener and more sustainable development pathway can be a springboard for economic transformation.

Africa has vast potential in clean energy. With the right vision and investments, it can help lead a global energy revolution, leapfrogging to renewable technologies and improving lives through cleaner, safer energy for household use.

There is also potential for virtuous circles in agriculture and urban development. Climate-smart development could drive major increases in Africa's agricultural output. Africa's rapidly growing cities can become powerhouses for sustainable development, while delivering better living standards for their inhabitants.

For our part, the African Development Bank is committed to working closely with African countries to support their adaptation and transition towards green growth. We will lead a major push to deliver cleaner, more affordable energy for all Africans by 2025. We will integrate climate-smart development across our portfolio. And we will continue to use our expertise to leverage climate finance for Africa and help African countries speak with a common voice in the international policy arena.

This is a key moment for shaping our shared future. Let us not hesitate in seizing it.

**Akinwumi ADESINA**
President of the African Development Bank Group

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# 1 The climate threat and Africa's climate opportunity

*"Climate change is the greatest challenge of our time in development. COP21 presents a unique opportunity to meet that challenge. The voice of Africa is crucial to ensure the success of COP21. And the voice of Africa will be heard."*

—Akinwumi Adesina, president of the African Development Bank Group

## The climate challenge in Africa

A strong deal at the 2015 United Nations climate change conference (COP21) is particularly vital for Africa because the continent faces acute climate risks. Seven Africans in ten depend for their livelihoods on agriculture, which is the economic sector most vulnerable and exposed to climate impacts: over 90% of African agriculture relies on rainfall. High levels of background poverty mean that millions are already on the margins of survival; for these people, even small climate changes can have a devastating effect.

Climate extremes such as drought, flooding, heat stress and tropical cyclones will become more intense and more frequent: in some cases, today's climate extremes may become tomorrow's "normal" weather. Rising sea levels will threaten Africa' large coastal population. Agriculture, tourism, cities, water levels, health, energy and fisheries will all suffer. As well as jeopardising people's well-being and livelihoods, these impacts will harm the environment and the economy (see Figure 1).

The climate impacts highlighted will not occur separately or in isolation, but will interact and sometimes reinforce each other. Successive, ongoing climate impacts will have a cumulative effect, magnifying the imbalance in risk between wealthy and poor countries.

**KEY MESSAGE: Africa is at a crossroads**

*Africa is particularly vulnerable to climate change and is already suffering from its worst effects. Without a global deal that limits warming to 1.5°C and provides more help now for Africa to adapt, the continent's hard-earned development progress could go into reverse.*

Poor households and communities bear the brunt of these impacts, as a vicious cycle links climate impacts and rural poverty. The economic cost is expected to be

Figure 1: **Africa faces acute climate risks**

## Africa is particularly vulnerable to climate change and is already suffering from its worst effects

### Farmers' yields will fall

Climate change is likely to reduce yields of major cereal crops across Africa. In Namibia, for example, climate impacts on agriculture could reduce annual GDP by between 1% and 6%.

### Extreme weather will increase

Global warming changes the frequency, intensity, extent and duration of weather and climate extremes. These include more pronounced droughts, floods, heat stress and tropical cyclones.

### Disease and malnutrition

Extreme events such as flooding can combine with longer-term changes such as warmer temperatures to spread infectious diseases, shift malaria regions and exacerbate malnutrition.

### Water resources may dwindle

Changes in rainfall could reduce water availability in some regions. As many as 90 million people would be at risk if rainfall drops to the point at which groundwater resources become non-renewable.

### Impacts on energy generation

Energy production that depends on hydropower will be most affected. Rainfall changes may increase capacity to generate in East Africa but decrease it in West and Southern Africa.

### Rising sea levels threaten cities

Most of Africa's biggest cities are on the coast, including Accra, Dar es Salaam, Lagos and Maputo. Up to 10 million people could be at risk from flooding in Cameroon, Mozambique, Senegal and Tanzania.

### Fisheries under threat

Rising ocean temperatures and ocean acidification are radically altering aquatic ecosystems. This jeopardises the sustainability of fisheries and aquaculture, and the livelihoods of the communities that depend on fisheries.

$45–50 billion per year by 2040, and up to 7% of Africa's annual gross domestic product (GDP) on average by 2100.

The resulting harm to the development of communities, countries and the region as a whole could roll back Africa's hard-won progress.

Uncertainty is fundamental to climate change, particularly in Africa where there are major gaps in data from climate observation. However, putting in place risk management measures should not be delayed. Climate change is already undermining Africa's development achievements.

Broad and swift action is urgently required both to reduce greenhouse gas emissions (mitigation) and to adjust to climate change effects (adaptation). Fortunately, several opportunities exist to respond in ways that help countries not just to cope with climate change, but also to build long-term resilience and prosperity. Many countries in Africa are already seizing those opportunities.

## Climate change comes with opportunities

The need to respond to climate change is also an opportunity to drive the economic transformation that Africa needs: climate-resilient, low-carbon development that boosts growth, bridges the energy deficit and reduces poverty. Climate change gives greater urgency to sound, growth-stimulating policies irrespective of the climate threat.

**KEY MESSAGE: Climate change offers an opportunity to transform Africa's prospects**

*Adapting to climate change while minimising greenhouse gas emissions can help drive the economic transformation that Africa needs: climate-resilient, low-carbon development that boosts growth, bridges the energy deficit and reduces poverty.*

Growth that supports poverty reduction, environmental protection, resource efficiency and economic growth in an integrated way, sometimes called green growth, is an attractive opportunity for countries in Africa. Green growth strategies can generate policies and programmes that deliver these goals simultaneously. They accelerate investment in resource-efficient technologies and new industries, while managing costs and risks to taxpayers, businesses and communities.

Making the transition to green growth protects livelihoods; improves water, energy and food security; promotes the sustainable use of natural resources; and spurs innovation, job creation and economic development.

**The energy opportunity: powering a clean Africa**
African countries need to expand power generation hugely to achieve universal access to energy – but they do not have to do it by using high-carbon fuels such as coal. They can avoid locking in such technologies – which would continue to emit large amounts of

greenhouse gases well into the future – by leapfrogging straight to renewable energy sources and new technologies, just as many Africans have leapfrogged to mobile phones, bypassing fixed line phones.

Africa stands to gain from developing low-carbon energy, and the world stands to gain from Africa avoiding the high-carbon pathway followed by today's rich world and many emerging economies.

Africa has enormous potential for cleaner energy – natural gas and hydro, solar, wind and geothermal power. Solar generation capacity could reach more than 10 000 GW; wind, 109 GW; hydro 350 GW; and geothermal about 15 GW.

Tackling fundamental inefficiencies in Africa's energy systems will also create investment opportunities. It is indefensible that Africa's poorest people are paying among the world's highest prices for energy. Changing this is a huge investment opportunity. Millions of energy-poor, disconnected Africans, who earn less than $2.50 a day, already constitute an energy market worth $10 billion a year.

### The agriculture opportunity: a virtuous circle

Agriculture provides livelihoods to over 70% of Africa's people, so investing in agriculture is of fundamental importance. On a global scale, Africa has the most undeveloped arable land, equivalent to 25% of the world's fertile land. While climate change remains a major threat to this sector, it also offers opportunities. Through climate-smart agriculture, Africa's annual agricultural output could increase from $280 billion to as much as $880 billion by 2030. This offers the prospect for Africa to feed itself and create jobs.

Strategies that support healthy ecosystems can play a key role in increasing resilience and helping people adapt to climate change. Investing in sustainable land use via climate-smart agriculture can reverse an otherwise vicious cycle, by raising smallholder income, reducing vulnerability and strengthening national food security, as well as lowering greenhouse gas emissions.

Smallholder farmers in some countries are already taking the lead by showing ambition and innovation in adapting to climate risk. Niger's farmer-led approach to agroforestry, for example, has improved livelihoods while contributing to both adaptation and mitigation across 5 million hectares of land. The sparse inter-planting of nitrogen-fixing trees has increased tree and shrub cover and reclaimed 250 000 hectares of previously degraded soil. Gross real annual income has risen by $1000 per household for over 1 million households. These agroforestry techniques have now spread to Mali.

Several countries are scaling up local programmes to the regional or national level, enabling wholesale change. Ghana, Kenya and Tanzania are expanding social protection programmes. Improving agriculture is a core theme in Ethiopia's climate-resilient green economy strategy. In the Tigray region in Ethiopia, communities have developed and implemented strategies to regulate access to communal grazing areas in order to combat land degradation. The government has scaled up these local initiatives through a national policy framework.

### The city opportunity: taking the smart route

Cities are growing faster than ever, particularly in the developing world. By 2030, 60% of the global population will live in cities. Cities are powerhouses of economic growth; they are expected to produce about 85% of global GDP in 2015, along with 71–76% of energy-related global greenhouse gas (GHG) emissions.

With dense populations, concentrations of infrastructure and large paved areas, cities are also particularly vulnerable to floods, storm surges and other climate impacts, particularly near the coast and along rivers. The infrastructure investments made in cities in the next few years need to be both low-carbon and climate-resilient.

Cities can take the smart route by adopting more compact, connected and efficient development – increasing economic productivity, improving air quality and public health, reducing poverty and enhancing safety. Such an approach appeals to investors and lowers infrastructure and public service costs. Smart cities are about building healthier, more liveable and more productive cities, which also reduce GHG emissions (see Box 1).

### Box 1: **Smart cities seize the initiative**

In the last decade, cities have emerged as a powerful force for practical action. Some 228 cities have set GHG reductions targets amounting to 30 gigatonnes of $CO_2$ ($GtCO_2$) by 2050, equivalent to the combined emissions of China and India. The decade-old **C40 Cities Climate Leadership Group** has provided a focal point for cooperation. Three of Africa's mega-cities – Lagos, Johannesburg and Addis Ababa – are actively engaged in the group, and Dar es Salaam, Nairobi and Cape Town have observer status.

An initiative launched in 2013, **100 Resilient Cities**, helps cities become more resilient to the physical, social and economic challenges that are a growing part of the 21st century. Six African cities are members: Accra (Ghana), Arusha (Tanzania), Dakar (Senegal), Durban (South Africa), Enugu (Nigeria) and Kigali (Rwanda).

A further grouping, the **Compact of Mayors**, was announced at the UN Climate Summit 2014. This includes the C40, ICLEI-Local Governments for Sustainability, United Cities and Local Governments (UCLG) and UN Habitat. Eight African cities participate: Dakar, Lagos and six South African cities: Cape Town, KwaDukuza, Nelson Mandela Bay, Tshwane, Durban and Johannesburg.

## Expanding Africa's access to adaptation finance

Lack of finance is a major constraint to realising Africa's climate opportunities. Although financing opportunities exist to support climate-resilient development in Africa, the needs far exceed available resources. The United Nations Environment Programme has suggested that annual average costs of adapting to unavoidable climate change in Africa will reach $7–15 billion by 2020. This would increase to $15–18 billion in the following decade if the world pursues a trajectory that leads to average global warming of 3.4˚C to 4˚C.

Taking the mid-range figure, $11 billion is required by 2020. So far, adaptation finance for Africa from both bilateral and multilateral sources has amounted to $516 million a year on average from global climate finance. In addition, the emphasis on projects diverts the resources of recipient governments away from the systemic responses needed to underpin the more transformative approaches to adaptation.

The second part of this paper looks at what needs to be achieved at COP21 to ensure that Africa can not only cope with climate change, but also transform its economies and prosper. The third part outlines the role that the AfDB is playing in mobilising finance and building momentum for low-carbon, climate resilient development. ■

# 2 COP21: Securing a deal that meets Africa's needs

*"The outcomes of the negotiation of a future legal outcome should provide for the developmental priorities of Africa, whilst ensuring adequacy of a global emission reduction effort to keep the continent safe."*

—Xolisa Ngwadla, Lead Negotiator for Africa on the Durban Platform

COP21 provides African governments with an opportunity to take climate leadership, building a climate-resilient and low-carbon future while contributing to global mitigation efforts. By speaking with a united voice, Africa can be part of the solution, playing a key role in the design, adoption and implementation of the new climate change agreement.

**KEY MESSAGE: The COP21 climate summit must deliver a deal that meets Africa's needs**

*By speaking with one voice at COP21, African countries are playing a key role in designing a new climate agreement that prevents catastrophic global warming while helping Africa build climate-resilient, low-carbon development.*

There are two parts to that opportunity. First, the overall ambition and commitment. In 2010 the principle of "equitable access to sustainable development" was adopted as a guiding theme for the UNFCCC agreement. African governments have played an important role in articulating how that principle can be interpreted for climate justice, shifting away from the deadlock over "common but differentiated responsibilities". It is crucial for Africa that COP21 results in the commitments needed to limit average global warming to 1.5°C, and secures the support required to enable a low-carbon transition at speed and scale.

Second, for Africa's own development. Several African governments now recognise that there is no trade-off between growth and climate action. Climate-resilient development is a vital part of any strategy for inclusive growth.

The AfDB is well placed to support these developments, given its ability to mobilise considerable resources within one institution, and to position itself as Africa's premier energy champion. In doing so, it can contribute significantly to achieving the objectives of its ten-year strategy of promoting inclusive growth and transitioning towards green growth.

The Paris COP21 meeting also offers an opportunity to build on broader progress during 2015 towards more and better sustainable development (see Box 2). In 2015 the world agreed on a way forward with the adoption of the Global Goals and made progress at the Addis Ababa Financing for Development conference. The Global Goals include dedicated goals on climate change (*"Take urgent action to combat climate change and its impacts"*) and on energy (*"Ensure access to affordable, reliable, sustainable and modern energy for all"*).

### Box 2: **The build-up to COP21**

The build-up to Paris has seen the emergence of a fresh approach to climate negotiations. In 2011, there was a shift in climate diplomacy, in recognition that the 20-year North-South stalemate was not conducive to effective action. There was finally an understanding that countries such as China and Ethiopia cannot be grouped together, enabling more constructive dialogue.

By appealing and advocating for a global climate agreement that takes into account Africa's concerns, African leaders have added political momentum through the Committee of African Heads of State and Government on Climate Change (CAHOSCC) and the African Ministerial Conference on the Environment (AMCEN).

There has been a wealth of positive action from other quarters. These include the numerous positive developments at city level. The business community is also more actively engaged, with a group of 25 global business networks calling for carbon-pricing mechanisms, redirection of fossil fuel subsidies, collaboration between private and public sectors to ensure commitments are met, and an increase in public funds over the $100 billion per year pledged in 2009.

A further positive development has been the increase in the number of carbon markets. Some 39 national and 23 sub-national jurisdictions are implementing or putting in place carbon-pricing instruments, including emissions trading schemes and taxes.

The need for the most vulnerable countries to have a voice at COP21 has led to the establishment of the Vulnerable Twenty Group of Finance Ministers (V20) in Lima in October 2015. The V20 includes 20 low-income, middle-income, least developed, landlocked and small island countries, including six from Africa. The V20 aims to strengthen economic and financial cooperation to overcome barriers to climate finance, and increase the readiness, volume and quality of international climate finance.

## Africa and the Intended Nationally Determined Contributions (INDCs)

African countries had an opportunity to state their ambition through the submission of their Intended Nationally Determined Contributions (INDCs). These form a key input to global expectations of COP21 and are expected to form the basis of a post-2020 climate agreement. They provide a snapshot of each country's planned development pathway. INDCs are bottom-up commitments from all nations towards the agreed objective of limiting average surface temperature increase to 2°C, covering the five elements of the Durban Platform – mitigation, adaptation, finance, capacity building and technology transfer. They are voluntary but will become binding in the event of a successful agreement at COP21. All nations were requested to submit an INDC by end of October 2015.

The INDCs have provided African governments with a vehicle to set out their ambition for the transition to a growth-oriented, climate-resilient, low-carbon development future. They could become the roadmap for development funded by multilateral development banks and donors. They have offered African nations an opportunity to demonstrate climate leadership by providing ambitious emission projections and transition and resilience plans. They could reinforce the need for a credible global deal at COP21, backed by appropriate levels of finance. The AfDB fully supports the development of the INDCs by African countries, which will largely influence the Bank's climate-change related interventions on the African continent.

## Africa requires more climate finance for mitigation and adaptation

Africa, especially Sub-Saharan Africa, has been poorly served by climate finance. Modest funding has been delivered through fragmented, overly bureaucratic structures that combine high transaction costs with low impact. The majority of finance has been earmarked for small-scale projects rather than national programmes.

**KEY MESSAGE: To unlock Africa's potential, the global climate finance architecture needs reform**

*Putting in place the foundations for a climate-resilient, low-carbon future will require ambitious, efficient and properly financed international cooperation. Current funding is insufficient and not always suited to Africa's needs.*

Bilateral aid dominates climate finance for Africa. This has been heavily concentrated in a small number of countries, with projects in Kenya, Malawi, South Africa and Tanzania accounting for 70% of mitigation finance.

Multilateral adaptation financing is fragmented and hence inefficient. In 2013, $291 million was approved for projects in Sub-Saharan Arica through eight separate adaptation funds. Each fund has a separate set of institutions, rules and reporting requirements.

So far, Africa has received just 4% of global climate change finance, much of which has gone to mitigation. Africa would benefit from an increased allocation to adaptation in particular.

Developed countries need to fulfil their pledge of providing $100 billion annually by 2020 to support climate action in developing countries. These resources should be delivered in a measurable, reportable and verifiable manner, based on clearly identified pathways to meeting this commitment. In addition, regional distribution of this financing must be equitable. The Green Climate Fund needs to be fully resourced to deliver on its objectives.

African governments spend $21 billion a year on energy subsidies: $10 billion on kerosene and other oil-based products and $11 billion to cover utility losses. These subsidies could be redirected into clean energy investment, social protection and targeted connectivity for the poor.

## A transformative approach to adaptation is needed

African governments can provide particular leadership in the global climate finance negotiations on approaches to adaptation. So far, aid for adaptation has been prone to a small-scale, project-based approach.

The IPCC's Fifth Assessment Report found that in Africa, "Most national governments are initiating governance systems for adaptation. Disaster risk management, adjustments in technologies and infrastructure, ecosystem-based approaches, basic public health measures, and livelihood diversification are reducing vulnerability, although efforts to date tend to be isolated". This is not an appropriate response to the growing risks facing people across Africa.

The IPCC report called for a model of "transformative adaptation" that "changes the fundamental attributes of a system in response to climate and its effects".

The AfDB calls for a fundamental revamp of the climate finance architecture for adaptation by consolidating the many separate adaptation funds under a single window, providing efficiency savings and reducing transaction costs. A global funding mechanism for adaptation would accelerate Africa's adaptation to climate change.

Given the importance of adaptation for Africa and the existing adaptation finance gap, an Africa-specific and dedicated mechanism to support adaptation in Africa is critical. The establishment of an Africa Adaptation Initiative will address the existing financing gap while ensuring consistency and effectiveness in coordinating various ongoing initiatives.

## African countries are already leading the way

Several African countries have already embarked on ambitious programmes integrating climate action with sustainable development, and are funding them with their own resources. These strategies demonstrate a win–win approach, working in the national self-interest while reducing global emissions.

More countries now recognise the costs associated with high-carbon development pathways and the benefits of renewable energy, sustainable land use and low-carbon development. For example, Ethiopia, Kenya and Rwanda have plans in place.

What is notable about these approaches is that the debate in Africa has moved on. A decade ago, many governments believed there was a trade-off between climate action and growth; climate mitigation was largely viewed as a northern imposition. Now governments and the private sector increasingly see low-carbon development as a growth opportunity.

**KEY MESSAGE: Africa has a leadership role**

*Some African countries are already leading the world in low-carbon, climate-resilient development. They are boosting economic growth, expanding opportunity and reducing poverty, particularly through agriculture.*

**Ethiopia's Climate Resilient Green Economy strategy** aims to achieve middle-income country status by 2025 while developing a green economy. Its four pillars are improving crop and livestock production practices; protecting and re-establishing forests; expanding renewable electricity generation; and leapfrogging to energy-efficient technologies in transport, industry and buildings.

**Kenya's low-carbon climate resilience plan** is fully integrated into the national development blueprint, Kenya Vision 2030. Kenya has replaced GDP-based traditional economic development models with a new model incorporating social dimensions of development progress. The country aims to reach long-term sustainable development through a broad, participatory, green economy approach.

**Rwanda's climate-resilient green growth approach** combines sustainable wealth creation and poverty reduction, through sustainable management of natural resources, climate resilient and green economic growth. This includes one of the world's most ambitious renewable energy strategies, with a target of 50% of power generated from renewable energy by 2017, from a base of just 4% in 2008. The overall costs are $500 million, including $200 million of public spending.

**East Africa Climate Change Funds:** The East African Community has developed a Climate Change Policy, Climate Change Master Plan and Climate Change Strategy. The community has also established a Climate Change Fund, which is in the process of being capitalised by member states. The objective of the fund is to help member states to adapt to and mitigate climate change. ■

# 3 The AfDB's vital role in Africa's climate opportunity

Addressing climate change is at the heart of the African Development Bank's mission to spur sustainable economic development and social progress, thus helping to reduce poverty. As the Bank's president, Akinwumi Adesina, said in his inaugural speech in September 2015, "we must build more resilient economies and reduce fragility risks".

The AfDB's investments can create opportunities for Africa to adopt a low-carbon, climate-resilient development pathway that builds adaptive capacity and strengthens institutions. To make sure all its investments support climate change objectives, the Bank screens its projects for climate risk and builds resilience into project design through the Climate Safeguards System (see Box 3).

The Bank is also developing a greenhouse gas accounting tool to track and reduce emissions from its investments. It will also enable the Bank to track the targets committed to by African countries in their INDCs.

**KEY MESSAGE: The African Development Bank has a crucial role in Africa's climate opportunity**

*The AfDB is investing its own resources and mobilising new sources of finance to help Africa cope with climate change and transform its economies, across the full range of the continent's needs – including agriculture, energy, infrastructure, water and land use.*

## Box 3: **Building resilience into AfDB investments through the Climate Safeguards System**

The Climate Safeguards System has four components:

1. **Climate Screening** assesses the vulnerability of a project concept to climate change and rates each project from 1 (most vulnerable) to 3 (least vulnerable).
2. **Adaptation Review and Evaluation Procedures** identify adaptation measures for each project based on the project's categorisation.
3. **Country Adaptation Factsheets** provide up-to-date, country-level climate projections. These are very useful tools when mainstreaming climate change into Country Strategy Papers and Regional Integration Strategy Papers.
4. **Climate Information Base** is a database of adaptation activities with links to a wide range of information sources on adaptation. It provides information required for the processes described above.

### Box 4: Climate change funds managed by the AfDB

The Bank supports climate change adaptation and mitigation through a range of funds and measures. As well as those mentioned elsewhere in this paper, these include:

- **Africa Climate Change Fund (ACCF)** — Created in April 2014, the ACCF is the AfDB's youngest climate finance instrument, designed to help African countries access greater amounts of climate finance and use the funds received more efficiently for a wide range of climate-resilience and low-carbon activities.
- **Sustainable Energy Fund for Africa (SEFA)** — SEFA is a multi-donor trust fund that invests in and provides technical assistance for small- to medium-sized projects driven by the private sector, with a view to promoting renewable energy and energy efficiency.
- **Climate for Development in Africa (ClimDev-Africa) Special Fund** — The AfDB administers the ClimDev Special Fund, which pools resources to finance the generation and use of climate information to support Africa's development.
- **Green bonds** — Green bonds support green growth and efforts to tackle climate change. The Bank was an early issuer of green bonds and has substantially increased its issuance over the last three years. Water, solar and wind/hydro are the three biggest sectors. Flagship programmes include the Ouarzazate Solar Complex in Morocco, and the Eskom Serre wind farm and Xina Solar One Project in South Africa.

## AfDB mobilises climate resources for Africa

The AfDB not only invests its own resources but also mobilises climate finance from the private sector and administers several climate funds (see Box 4). Since 2011, the Bank has invested almost $7 billion in climate finance through 150 projects. It also draws and invests resources from global funds including the Climate Investment Funds, the Global Environment Facility, the Adaptation Fund and the Green Climate Fund.

As an implementing entity, the Bank has increased Africa's access to these funds. However, Africa's needs for climate finance far exceed the resources that the continent receives.

The AfDB is working with public and private partners to mobilise new and innovative financing to fund its investments in adaptation. The Bank is also helping African countries expand their access to international climate change finance for adaptation projects that promote climate resilience.

## AfDB helps Africa cope and thrive (adaptation)

Africa is particularly vulnerable to climate change, which is a fundamental threat to the continent's economic and social development, especially for those least able to adapt. Unprecedented heat waves, droughts, rising sea levels and significant crop yield reductions threaten to put prosperity out of reach for millions of people and roll back decades of progress.

The choices made today about infrastructure, energy and food production will shape Africa's opportunities and options far into the future. That is why the AfDB is scaling up its action and mobilising investments to help Africa cope with climate change and transform its economies, across the full range of the continent's needs – including agriculture, energy, infrastructure, water and land use (see Figure 2).

Helping African countries manage environmental, social and economic risks has always been a key part of the Bank's role. Between 2011 and 2013, the AfDB invested about $1.65 billion to support adaptation in Africa. The Bank is expected to increase these investments to about $2.75 billion per annum by 2020, representing about half of the Bank's climate finance.

The Bank supports the Africa Initiative on Adaptation and Loss and Damage endorsed by the Committee of African Heads of State and Government on Climate Change. The initiative will make a major contribution towards broader international cooperation on adaptation as proposed by African countries. It will help African countries to identify needs and take action to fulfil their INDCs relating to adaptation and provide a continental platform for linking with the UN Secretary-General's Global Initiative on Resilience.

**Moving to climate-smart agriculture**

Most Africans live in rural areas, where income and employment depend almost entirely on rain-fed agriculture. This leaves the region highly vulnerable to changes in rainfall and temperatures and their consequences for agricultural production. Climate change will have adverse impacts on Africa's agricultural crop production, as well as its pastoral and livestock systems, and will bring uncertainty and volatility to food prices, with disproportionate effects on the poor.

The AfDB's investments are helping agriculture systems across the continent adapt to both the short-term stresses (such as drought) and long-term consequences (such as reduced crop yield) that not only increase but perpetuate vulnerability. The Bank is enhancing the continent's capacity to adapt to climate risk by improving access to appropriate technology, building agriculture infrastructure, enhancing public policy reform and improving smallholders' access to finance.

About 61% of AfDB investments in agriculture contribute to building climate resilience in the sector. This will increase to about 90% by 2020.

**Managing water resources**

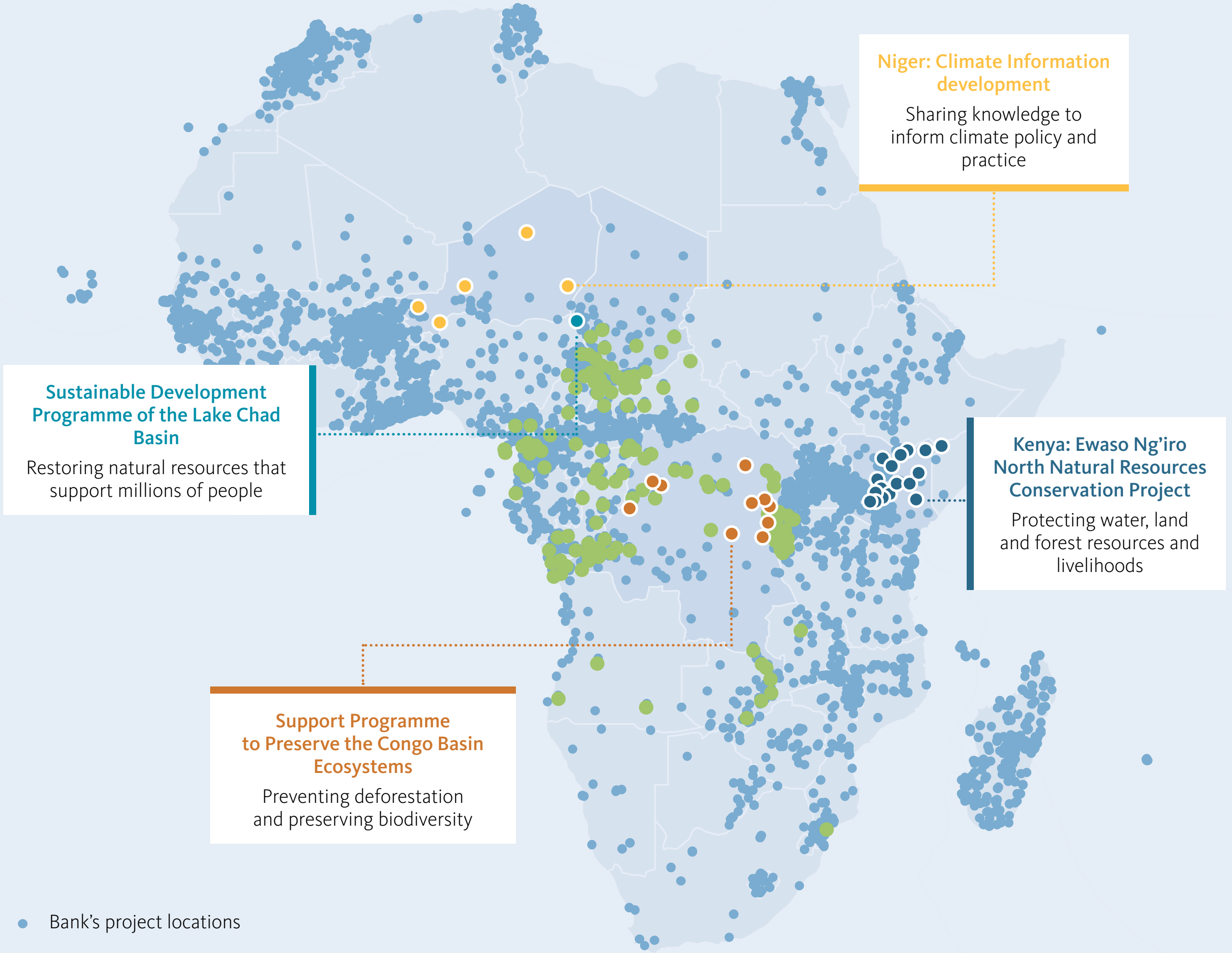
Climate change is likely to exert severe pressure on water supplies; this pressure will be exacerbated by Africa's increasing urbanisation and industrialisation. Impact on water resources has wide-ranging repercussions for agriculture, industry and sanitation, and in some countries for hydroelectric power generation.

The AfDB takes climate change into consideration in all its water investments. The Bank promotes integrated water resources management; supports trans-boundary water resources management; builds the resilience of water supply and sanitation; supports water knowledge and information; promotes green energy; and aids the construction of multipurpose dams for water supply, irrigation and hydropower. The Bank invested about $1.1 billion in water resources development between 2011 and 2015, of which more than 53% was to address climate change mitigation and adaptation. This share is expected to increase to about 90% by 2020.

The AfDB hosts and manages the African Water Facility (AWF), which has mobilised about $550 million to help African countries achieve the Africa Water Vision 2025.

Figure 2: **AfDB helps Africa adapt and thrive**

## From managing risks to transforming economies, the Bank's climate adaptation investments of $347 million improve lives across the continent



On average, every dollar contributed by the AWF has attracted $20 in follow-up investments.

**Promoting sustainable transport**
Transport networks are highly vulnerable to climate change. Extreme weather events cause floods that can wash away or inundate roads, railways and bridges. Scarce financial resources that could have otherwise be used for development are spent on repair and maintenance budgets.

Improving the resilience of transport infrastructure is vital. Two-thirds of the infrastructure that Africa will need by 2050 has yet to be built. This means that investments made in infrastructure today will have deep impact on the lives and the economies of Africans tomorrow.

The AfDB is investing in developing greener transport links that mitigate climate change by reducing emissions, while helping to build economies and societies that include everyone. The Bank is also increasing the resilience of transport networks by investing in developing and implementing regional and urban sector master planning and promoting "sustainable cities". The Bank expects about 50% of its transport investment to focus on climate change by 2020.

**Helping people cope with climate change**
Access to education, health care, transport, energy, food and water requires complex networks resilient to the whims of climate variability and extreme weather events. In many communities across Africa, a breakdown in infrastructure or services can be a matter of life or death.

The impacts of climate change are already being felt today. African youth need to be provided with the skills and resources they need to adapt to a changing climate and to take advantage of emerging opportunities presented by climate change, such as new industries, technologies and jobs. In 2013, the AfDB provided about $465 million for skills development and the promotion of human development to support Africa's transition to green growth.

The AfDB is also committed to working with other partners to build climate resilience in the Sahel, where recent changes in rainfall and temperature patterns have disturbed the traditional migration habits of nomadic pastoralists and led some of the region's 100 million people to migrate to Europe. With average temperatures in the Sahel anticipated to increase by 3–5°C by mid-century, changing conditions will undoubtedly cause more displacement and further strain a chronically poor and unstable region.

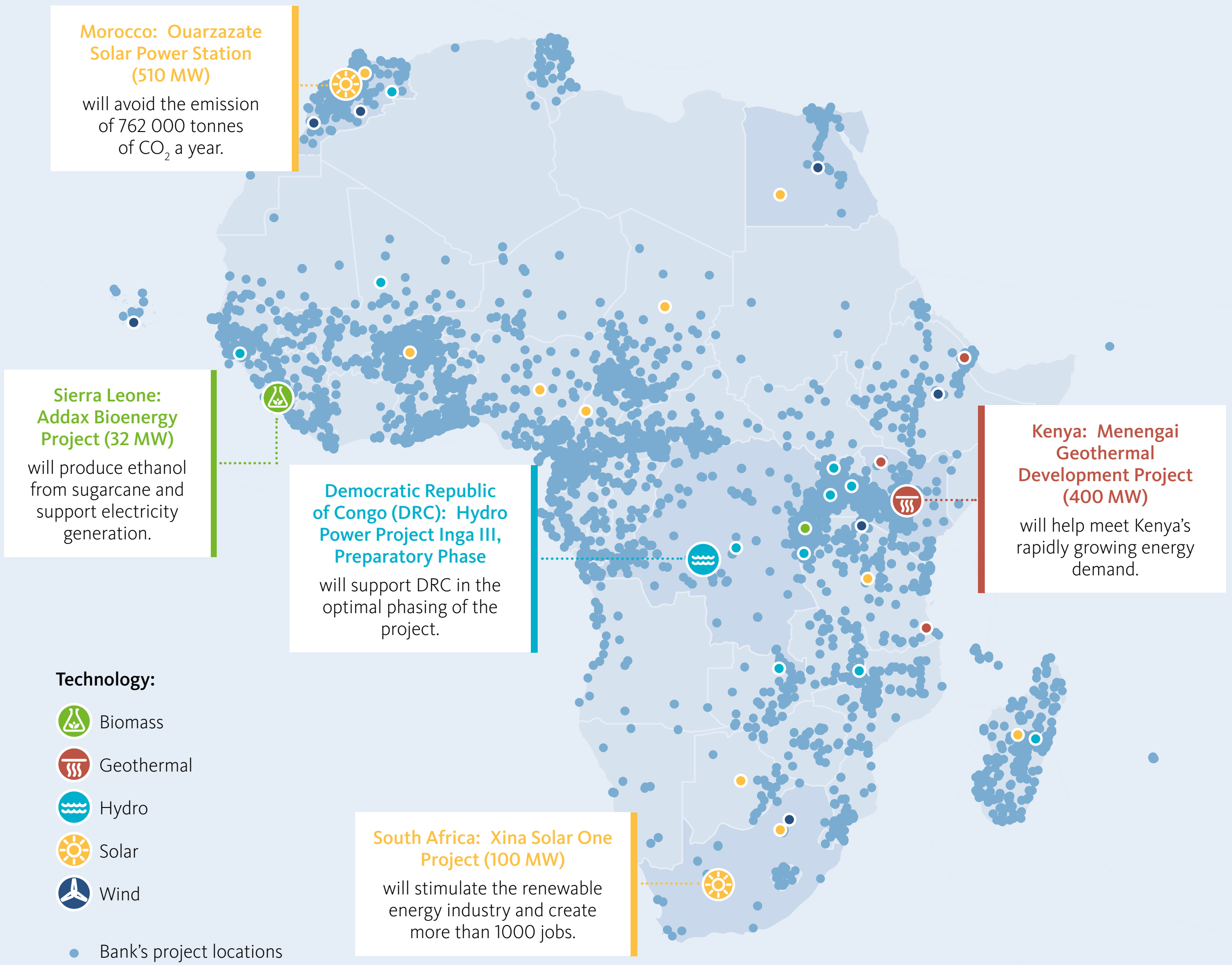
## AfDB creates opportunities for low-carbon development (mitigation)

African leaders have every reason to support international efforts to minimise greenhouse gas emissions. At the same time, they urgently need more power to boost and transform their economies and to increase energy access. Over 645 million Africans do not have access to electricity.

Africa is rich in energy resources, but poor in energy supply and access. Africa's energy deficit is locking the continent in poverty: it is holding back the economic growth needed to create jobs and lift people out of poverty.

Figure 3: **AfDB boosts low-carbon energy**

## The Bank is investing massively to increase energy access while avoiding emissions: its investments in renewable energy projects total \$2.1 billion



**KEY MESSAGE: Energy is critical to Africa's growth and transformation**

*Africa's energy deficit holds back the economic growth needed to create jobs and lift people out of poverty. AfDB will work to end Africa's energy crisis in ways that respect the planet's limits, by unlocking Africa's enormous energy potential, especially in renewables.*

The challenge is to adopt the right energy mix in which renewable sources gradually replace fossil fuels. The AfDB's New Deal on Energy for Africa aims to address this challenge by closing the energy gap while stimulating low-carbon development (see Box 5).

### Unlocking Africa's enormous potential for renewable energy

By facilitating Africa's transition to renewable energy, the AfDB has a major role in reducing the continent's emissions. This is why the AfDB is massively investing in technology, innovations, policies and regulations to speed up a renewables revolution. It is funding renewable energy projects across a range of technologies, scales and geographies (see Box 6 and Figure 3).

The Bank is also supporting the **Africa Renewable Energy Initiative**, an African-owned and African-led effort to accelerate and scale up the harnessing of the continent's significant renewable energy potential. The initiative seeks to achieve at least 10 GW of new renewable energy generation capacity by 2020 and – as an aspiration goal – to mobilise the African potential to generate at least 300 GW by 2030.

### Box 5: **The AfDB's New Deal on Energy for Africa**

Under the New Deal for Energy in Africa, the Bank will significantly expand its support for energy in Africa. As the Bank's president, Akinwumi Adesina, said at the launch of the initiative, "Africa is blessed with limitless potential for solar, wind, hydropower and geothermal energy resources. We must unlock Africa's energy potential – both conventional and renewable – as Africa cannot power its economy with potential."

To provide everyone in Africa with access to affordable modern energy, a finance gap of $55 billion a year needs to be bridged. There is a need for both increased private investment and expanded concessional and non-concessional development finance. Working with development partners and countries, the Bank will drive critical policy and regulatory reforms of the energy sector to improve incentives for accelerated investments.

By working together, Africa and its partners can achieve universal access to energy by 2025. The Bank's Transformative Partnership on Energy for Africa will bring together partners to deliver coherent efforts on energy to ensure universal access.

### Box 6: **Aiding Africa's transition to renewable energy that drives growth**

The Bank supports large-scale solar projects, such as the Noor concentrated solar power projects in Morocco. It has also supported integrated wind and hydro programmes in Morocco. The Bank is an active supporter of geothermal power development, providing investment capital and technical assistance to operations in Kenya, Djibouti, Ethiopia and Tanzania.

As well as large hydropower projects such as the 147 MW Ruzizi III project, which will benefit the Democratic Republic of Congo (DRC), Rwanda and Burundi, the Bank is supporting smaller hydropower projects such as the Jiji and Mulembwe public sector projects in Burundi and the Sahanivotry independent power project in Madagascar.

## Box 7: **Leading and coordinating energy sector development**

The Sustainable Energy for All (SE4ALL) Africa Hub is hosted by the AfDB in partnership with the African Union Commission, the NEPAD Agency, and the United Nations Development Programme (UNDP). The Hub plays a key role in coordinating and facilitating the implementation of the SE4ALL Initiative in Africa; the Bank's president has been a member of the initiative's advisory board. A key implementation role is also envisaged for the Hub under the G20 Action Plan on Energy Access in Sub-Saharan Africa.

The Bank also hosts the secretariat of the African Energy Leaders Group (AELG), in conjunction with the Hub, as a high-level public-private platform to advance solutions for regional energy sector issues. The West African chapter was successfully launched in June 2015, and subsequent rollout across Africa is envisaged.

The Bank is one of the architects of the Programme for Infrastructure Development in Africa (PIDA), and a core financier for the PIDA Priority Action Plan, featuring nine hydropower dams, four regional power interconnectors, a petroleum pipeline and a gas pipeline. The Bank is involved in the preparation and implementation of some of these projects. The Bank also hosts the Infrastructure Consortium for Africa (ICA), which has an advocacy role for infrastructure development.

The Bank cooperates with key stakeholders in the sector, such as President Barack Obama's Power Africa Initiative, for which the Bank is an anchor partner; the European Commission; bilateral donors such as the British, French and German aid agencies (DFID, AFD and KfW); the International Renewable Energy Agency's Africa Clean Energy Corridor; and others.

The Bank is working on interventions **beyond the grid** and increasingly looking at mini-grid and off-grid solutions for providing the rural poor with access to energy, for both lighting and productive uses. The Bank serves as the Africa Hub for the Sustainable Energy for All Initiative. Through the work of this Hub and in partnership with the Sustainable Energy Fund for Africa, the Bank is intervening to reduce market barriers and strengthen the environment for the emergence of a thriving green mini-grids ecosystem.

In order to ensure efficient delivery of electricity to households and businesses, the AfDB also invests in the "soft" infrastructure of institutions and regulations. Harmonised national regulations are the foundation for developing regional power pools. The Eastern Africa Power Pool, for example, helps replace higher-cost fossil fuel power in Kenya with lower-cost and more reliable hydropower from Ethiopia. As a result, over 1.4 million Kenyans will for the first time have access to electricity at affordable rates and Kenya will be able to reduce its $CO_2$ emissions by 7 million tonnes per year.

### Mobilising finance for energy

While the economics of energy generation are increasingly in favour of renewable technologies, the capital costs of these technologies can still be higher than those of conventional power plants, especially in countries with limited experience of providing renewable energy. The AfDB is helping African countries to cover the difference in costs and to lock in emissions reductions.

The Bank is a leader in financing and coordinating renewable energy on the African continent (see Box 7). The Bank's financing for energy generation shifted from 86% of fossil fuel-based generation for 2009–11 to 71% of clean energy based generation for 2012-14, in line with the energy policy adopted in 2012 that promotes a transition towards green growth.

Between 2011 and 2012, the AfDB doubled its clean energy commitments and became the largest financier on the continent (Bloomberg New Energy Finance, 2013).

The AfDB is working with public and private partners to mobilise new and innovative financing to fund its investments in clean and renewable energy. The Bank is helping African countries expand their access to **international climate change finance** for energy projects that promote climate resilience and low-carbon energy generation. The Bank has successfully channelled climate finance from global facilities including the Scaling Up Renewable Energy Programme for Low-Income Countries (SREP) and the Clean Technology Fund (CTF), programmes under the aegis of Climate Investment Funds (CIF), as well as from the Global Environmental Facility and the Sustainable Energy Fund for Africa (SEFA).

The Bank is collaborating with the **private sector** to extend the reach of its energy finance, particularly in renewable energy. Since 1998 the AfDB has approved more than $2 billion in private sector energy projects. To attract private sector investment into the energy sector on a much larger scale, the Bank is working with African governments to enhance their investment climates.

The AfDB has acquired considerable experience in preparing the ground for private sector investors in renewable energy public-private partnerships (PPPs), and is expanding the use of **risk mitigation instruments**. For example, the Bank's concessional loan arm, the African Development Fund (ADF) has provided a partial risk guarantee (PRG) of $22 million for the Lake Turkana Wind Power Project, which will be one of the largest wind farms in Africa. The PRG mitigates the risk of delays in the construction of a 428 km publicly owned transmission line needed to put 300 MW of power on the grid.

The Bank is an active investor in **private equity and debt funds** with an energy focus. It has invested in funds such as the African Infrastructure Investment Fund 2, the Emerging Africa Infrastructure Fund (EAIF), and the Africa Renewable Energy Fund, focusing on grid-connected small- and medium-scale renewable energy projects.

Through the New Deal on Energy for Africa, the Bank will establish a **Bottom-of-the-Pyramid Energy Financing Facility** to help Africans to gain access to clean cooking solutions (appliances and fuels), thus reducing the household air pollution that currently kills approximately 600 000 Africans a year.

The Bank is starting to scale up activities in **energy efficiency**. The bank has financed several energy efficiency projects aiming at improving electricity systems through rehabilitation of distribution lines. There is also significant potential in some African countries to increase the efficiency of electricity consumption in houses, public buildings, commercial enterprises and industry. The AfDB has issued its first line of credit for renewable energy and energy efficiency to Stanbic IBTC, Nigeria, with the support of the Clean Technology Fund.

**Reducing emissions through sustainable land use and forestry management**

About 65% of Africa's GHG emissions come from deforestation and poor management of agricultural and pastoral land. This means that Africa has a significant potential for mitigation through agriculture, forestry and land-use changes.

So far international support for such mitigation has been limited. This is unfortunate because it is in this area where Sub-Saharan Africa can make the greatest contribution to global emission reduction targets. Part of the problem can be attributed to the architecture of the UN Reducing Emissions from Deforestation and Forest Degradation programme (REDD+), under which many governments have struggled to meet eligibility criteria.

The AfDB has been investing substantially in preserving Africa's forests for nearly 30 years, financing about 100 operations worth about $2.8 billion. Several projects will benefit from REDD+, including the $78 million Farm

Income Enhancement and Forest Conservation Project in Uganda, which is re-vegetating 9900 hectares of degraded watershed, protecting 99 000 hectares of natural forests and establishing 13 500 hectares of tree plantations. The Bank hosts the Congo Basin Forest Fund, an initiative to support sustainable forestry management, and the reversal of deforestation and forest degradation.

## AfDB supports Africa's position in the UNFCCC negotiation process

The Bank has been one of the supporters of the African Group of Negotiators (AGN), through a work programme that will ensure their active participation in developing the new climate change agreement at COP21. Over the last seven years, the Bank has consistently provided support to the AGN to strengthen its capacity to negotiate on the basis of a common position that reflects Africa's concerns and interests. The Bank's support includes:

- Sharing technical and scientific knowledge, and commissioning policy and scientific papers on issues requested by the AGN to address complex negotiation issues and better inform its positions.
- Providing technical and legal support, including legal advisory services and real-time negotiation backstopping.
- Support for the participation of lead African negotiators in key preparatory meetings.
- Organisation of inter-sessional meetings to learn from previous COPs and strategise for the next ones.
- Supporting a significant number of key African negotiators to participate, where their governments are unable to do so.
- Administrative and logistical support.

The Bank, in partnership with the African Union Commission (AUC), the United Nations Economic Commission for Africa (UNECA) and the New Partnership for African Development (NEPAD), is leading the support for Africa's participation at COP21. These four institutions will establish an Africa Pavilion, as mandated by the African heads of state. The Pavilion will provide a physical space where African delegations can meet to strategise and synchronise their participation in the COP process.

The Pavilion will also symbolise Africa's unity of purpose in the face of climate change, and the importance of a global climate agreement that adequately addresses Africa's concerns and lays the foundation for sustainable, climate-smart development. The Pavilion will host high-level events including an Africa Day that will be attended by heads of state at COP21. ■

# 4 Recommendations and the way forward

Addressing Africa's climate change challenges requires collaboration between a broad range of stakeholders, at COP21 and beyond. The recommendations in this section describe how African governments and the international community can ensure a successful climate change agreement at COP21 and a transition to green growth.

## For African governments

African countries have developed a streamlined process to support African negotiation efforts at COP21. They have also demonstrated significant leadership on climate change through the Committee of African Heads of State and Government on Climate Change. However, African governments can still do more.

1. **Provide leadership in climate change governance.** African governments should speak with one voice at COP21 and ensure that the new global climate agreement meets Africa's specific needs. They should take the lead in advocating for adaptation that transforms their economies and for adaptation finance through the Africa Initiative on Adaptation and Loss and Damage.

2. **Engage fully with the INDC process.** African countries should commit to implementing their INDCs, which provide a bridge to low-carbon and climate-resilient development. Through well-designed INDCs, African governments can seize the opportunity to leapfrog directly to low-carbon growth. They can also achieve a "triple win" in agriculture – higher productivity, increased resilience and lower emissions – while providing more energy to the poorest to transform their future.

3. **Create enabling environments to attract private investment.** Governments need to provide a regulatory and economic environment that encourages the private sector to invest in green projects in priority sectors, depending on each country's comparative and competitive advantages.

4. **Diversify sources of finance.** African governments should maximise opportunities to obtain funding from a wide range of sources, including emerging donors such as Brazil, China, India and Saudi Arabia. Funding could be deployed more successfully by further improving coordination of donor finance, according to the key principles of ownership (partner countries set their own strategies), alignment (donor countries support these objectives), harmonisation (donor countries avoid duplication) and accountability by donors and their partners.

## For the international community

1. **Set a high level of ambition for COP21 and beyond.** To fulfil their historical responsibility to help developing countries, including those in Africa, to address their climate change challenges, developed countries must cut emissions and provide financial resources. They should meet their commitment to mobilise $100 billion per annum of new and additional resources by 2020. Developed countries and other countries with high emissions should also aim higher for COP21, cutting emissions within scientific limits to ensure that the average global temperature increase is kept below 1.5°C.

2. **Support a coherent climate finance architecture: move away from fragmentation.** The current architecture is fragmented and inefficient, limiting Africa's access to global climate change finance. The international community should support a more streamlined process that creates parity between adaptation and mitigation, establishes a regional balance in allocation, and gives voice to developing countries, especially the most vulnerable. The Green Climate Fund embodies some of these elements, but needs to be well resourced to enable it achieve its objectives.

3. **Support Africa's initiatives to transition to green growth.** To ensure that Africa does not soon become the largest greenhouse gas emitter, developed countries should support two African initiatives to keep the average global temperature increase below 1.5˚C: the Africa Renewable Energy Initiative and the Africa Initiative on Adaptation and Loss and Damage.

4. **Increase the coherence of climate finance in Africa.** Finance to address the climate challenge should meet agreed aid effectiveness principles of ownership, alignment, harmonisation and accountability. Donors should support the AfDB's Transformative Partnership for Energy in Africa, which seeks to coordinate action aimed at ensuring universal access to energy in Africa by 2025.

## The way forward: The African Development Bank's commitments

1. **Supporting African negotiators.** The AfDB will continue to provide the support African negotiators require to make sure the new global climate agreement meets Africa's needs. Past global agreements, such as the Clean Development Mechanism and the Global Environment Facility, have not benefited Africa as they did not prioritise the continent's concerns.

2. **Helping the most vulnerable countries.** The AfDB will continue to improve the capacity of vulnerable African countries to access climate finance and opportunities, as well as to cost and develop implementation plans for their INDCs, in order to make Africa's development agenda more resilient and sustainable.

3. **Scaling up financing for climate change.** The AfDB will triple its annual climate financing to reach $5 billion a year by 2020. The AfDB's climate spending will increase to 40% of its total new investments by 2020.

4. **Mainstreaming climate in its activities.** The Bank will continue to take climate change into account in all its activities, to promote economic growth

by building resilience; by managing natural assets efficiently and sustainably – including by enhancing agricultural productivity; and by promoting sustainable infrastructure and urbanisation, while minimising pollution and waste.

5. **Supporting game-changing initiatives.** The Bank will support the development and implementation of the **Africa Renewable Energy Initiative** and the **Africa Initiative on Adaptation and Loss and Damage**. It will provide effective leadership for the New Deal on Energy for Africa. The Bank will expand its work on mini-grid and off-grid energy access and energy efficiency to ensure Africa's universal access to modern energy by 2025.

6. **Supporting mitigation.** While the Bank will remain selective in its interventions, it will continue to support key initiatives such as the **Nationally Appropriate Mitigation Actions** to which African states have committed, and REDD+. The Bank's present structure does not support the implementation of programmes. The Bank should foster collaboration between cities, regions, companies, investors and national governments to increase Africa's ambition to act on climate change.

7. **Leveraging additional funding for climate.** The Bank will aggressively expand its leveraging of climate concessional funding resources at scale, by making full use of existing funds (including the Scaling Up Renewable Energy Programme for Low-Income Countries (SREP), the Clean Technology Fund and the Global Environment Facility), by mobilising and deploying its in-house technical assistance instruments such as the Sustainable Energy Fund for Africa, and by accessing the new Green Climate Fund. ■

# Notes

# Notes

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