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Climate Challenges: Making the Transition in Africa a Success

Structural and political advantages, social and financial challenges

Policy Paper

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Contents

Keywords: Climate, Africa, transition

Executive summary: Africa has many advantages that will enable it to keep a low carbon footprint while achieving economic take-off. A just transition pathway that reconciles socioeconomic and climate imperatives is possible. However, it will require a strong commitment to climate issues from African and international stakeholders. Increased technical and financial mobilization of African governments, African and international donors and public development banks, and all financial players on the continent will make it possible to finance and support the continent's fast-growing climate innovation.

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Highlights

- Because Africa started its economic take-off later than other developing regions, its greenhouse gas (GHG) emissions are low compared to other parts of the world. The continent also has several advantages that will enable it to keep a low carbon footprint and avoid the high carbon growth trajectory that has been observed in emerging Asia over the past forty years. But this will require it to accelerate its investments in decarbonization technologies.
- The energy pathway aside, agriculture and land use[1] are still the main sources of African GHG emissions. To put Africa on a sustainable, environmentally friendly development path, ambitious policies will need to be implemented, such as adjusting rural land use, preserving ecosystem services, and transitioning to a more resilient and low-carbon agricultural model.
- The impacts of climate change on the African continent will continue, or even increase in certain cities and regions. African territories must therefore anticipate and think about their development in order to adapt to shocks that climate change will cause in a context of very significant demographic growth. This will require revising spatial and urban planning methods.

1 The changes in land use reflect the dynamics of deforestation, afforestation, land take and renaturation, and the shift from forest areas to agricultural areas or vice versa. These changes in use have an impact on GHG levels, which may be favorable or unfavorable depending on the change.

- The social challenges in Africa are immense, and the demographic pressure is unparalleled internationally. In fact, 90% of the world's population below the extreme poverty line will live in sub-Saharan Africa by 2030. Far from being incompatible, climate and social issues must be mutually reinforcing in order to lead to development modes that are both less carbon-intensive and fairer.
- African decision-makers are well aware of the climate change challenges facing the continent. These issues are a central element of the African Union's Agenda 2063 and drive an African climate diplomacy that is fully mobilized at international conferences and negotiations.
- Donors and public development banks are committed to achieving this fair, resilient and low-carbon pathway in Africa, via three approaches:

1. ensuring greater inclusion of climate issues in public policies by supporting national authorities, local authorities and African private actors;
2. accelerating low-carbon and resilient investments in Africa;
3. reconciling social and climate issues.

1.
The challenges of Africa's low-carbon and resilient development model

1.1 – Africa can reconcile its economic take-off with a low carbon footprint

Because it is the last developing region to achieve economic take-off, **Africa's carbon footprint is currently low compared with other continents.** Africa's per capita GHG emissions are half those of East Asia and Europe and have been falling for the past 20 years, including the land sector (Table 1). Meeting the Paris Agreement commitments will require a global average of around 2.9 tCO^2e per capita by 2030.[2] Although Africa currently exceeds this threshold on average, this masks significant disparities between countries. At this time, certain countries are generally in line with this trajectory (Madagascar, Morocco), whereas others are below this threshold (Comoros, Kenya) or have high levels of emissions per capita (South Africa, Nigeria). Alignment with the Paris Agreement will require multiple approaches depending on the country: exit from fossil fuels, reducing deforestation, etc.

A prospective analysis shows that Africa has several advantages to avoid a high-carbon trajectory, such as that observed in emerging Asia:

Table 1 - GHG emissions per capita, including land sector (tCO_2e/capita)

REGION	UNIT	1998	2018
North America	tCO_2e per capita	22.94	18.03
Europe and Central Asia	tCO_2e per capita	9.17	8.23
European Union (27)	tCO_2e per capita	9.36	7.46
Latin America and the Caribbean	tCO_2e per capita	8	6.22
World	tCO_2e per capita	5.87	6.45
Middle East and North Africa	tCO_2e per capita	5.5	7.43
Sub-Saharan Africa	tCO_2e per capita	4.14	3.45
East Asia and Pacific	tCO_2e per capita	4.51	7.84
South Asia	tCO_2e per capita	1.34	2.31

Source: Climate Watch (CAIT) 2021.

- **The continent has several abundant and renewable primary energy sources**. Although Africa has the highest solar energy potential in the world, it had only 5 GW of photovoltaic solar capacity in 2019, or less than 1% of global capacity (International Energy Agency, 2019). In Africa, bioenergy (wood energy, charcoal) still accounts for 40% of primary energy and, consequently, access to electricity is still very low, although improving (45% in sub-Saharan Africa). Moving away from this reliance on bioenergy in a sustainable manner will require unprecedented investments in renewable energy. Renewables will need to account for 76% of Africa's electricity mix by 2040 (up from 21% in 2019) to achieve alignment with the Paris Agreement (Sustainable Development Scenario of the International Energy Agency: 2°C). This will require installing 26 GW of renewable energy per year[3] by 2040, compared to 3 GW between 2018 and 2019 (*ibid.*). This need for substantial investment will require sector-wide programming that incorporates these decarbonization objectives and greater mobilization of the private sector to invest locally in these new capacities.

2 The UNEP Emissions Gap Report 2020 states that the 1.5°C trajectory targeted by the Paris Agreement corresponds to 25 $GtCO_2e$/year, i.e., 2.9 per capita relative to the population of 8.5 billion persons projected in 2030.

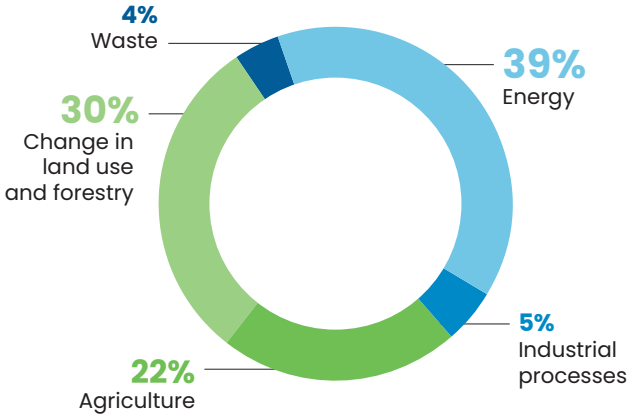
3 China, which had the same level of dependence on bioenergy in 1970, went through an initial phase in which it made massive investments in coal.

- **The potential to immediately build a fleet of efficient infrastructure if financing is available:** in many countries (in particular, low-income countries), electrical systems are underdeveloped (80 GW of total installed capacity in sub-Saharan Africa in 2018, excluding South Africa [International Energy Agency, 2019]). This would avoid locking in high-carbon technologies, although this assumption is not universally applicable, particularly to certain middle-income countries (South Africa) and hydrocarbon-producing countries. Moreover, the continent can learn from energy transitions observed on other continents, in terms of technology, their relative prices and production costs.

- **Other than in the energy sector, the stock of physical capital is also low relative to needs, which confirms the importance of investment policies and their potential impact on future capital stock in terms of reduced energy consumption and energy efficiency.** For example, 80% of the buildings that will exist in 2050 in sub-Saharan Africa have yet to be built (Kitio, 2013). Emissions from buildings alone account for 40% of CO2 emissions worldwide (Global Alliance for Buildings and Construction et al., 2019). This share is expected to rise, particularly in Africa, due to the increased need for air conditioning. It is therefore imperative to plan the construction of low-carbon buildings. Similarly, the rate of individual motor vehicle ownership is still very low: around 40 cars per 1,000 inhabitants, compared with an average of 600 in Europe and 150 in China (World Bank, 2021). Walking is the dominant mode of travel in African cities, followed by public transportation, which is often artisanal, for both urban and interurban mobility. This starting point is therefore an opportunity to develop cities for people rather than cars, based on an urban mobility plan that focuses on efficient, high-capacity public transportation that is well integrated into a multimodal system, and that favors environmentally friendly means of mobility. Moreover, the arrival on the market of technologies that are less carbon intensive than traditional engines (such as electric vehicles) could enable the continent to make a technological leap and follow a mobility development path that generates lower emissions than the paths that have been followed to date by developed countries.

However, this encouraging prospect should not obscure the fact that agriculture and land use (AFOLU) currently account for the largest share of GHG emissions on the African continent (Chart 1). The land sector accounts for half of the continent's GHG emissions, ahead of the energy sector. This is especially due to deforestation, particularly in Nigeria (which has lost 10% of its vegetation cover since 2000, according to Global Forest Watch) and the Gulf of Guinea countries, particularly cocoa producers (Ivory Coast and Ghana). Spatial planning and the preservation of ecosystem resources and services must be at the heart of land development policies.

Chart 1 - CO_2 emissions in sub-Saharan Africa in 2016 (as % by sector)



Source: Climate Watch (CAIT) 2021.

How Africa manages its spatial development will be decisive for its long-term carbon footprint and its resilience to climate change, as well as for the quality of life of its population: air pollution, traffic jams and noise pollution are all nuisances that impact the lives of African city dwellers, as shown by a recent survey carried out by the Sahel and West Africa Club (SWAC): 93% of respondents in Conakry, Guinea, and 86% in Abidjan, Ivory Coast, complain about traffic jams. Investments in urban areas (transportation, energy, energy efficiency, etc.) will therefore be crucial. Urban planning and land use planning, which are still patchy, have been identified as key policies in the African Union's Agenda 2063 and should be designed in line with the Climate Agenda.

1.2 – As it faces the impacts of climate change, Africa seeks resilient development models

Most of Africa's major cities, which are frequently on the coast, are highly exposed to the impacts of climate change: rising sea levels, coastal erosion, flooding, etc. Planning policies are therefore necessary to adapt these spaces. Each year, nearly half a million people are affected by flooding from rising sea levels and coastal erosion in West Africa alone. Two-thirds of African cities, whether coastal or inland, are considered at extreme flood risk due to poor quality infrastructure and inadequate spatial planning (Rowling, 2018). This is a major risk in many countries because, due to climate change, more frequent heavy rains are expected across much of the continent. This planning should also improve the energy efficiency of fast-growing cities.

Table 2 - Population growth projections in Africa

M INHAB.	1950	1998	2030	2050	COEFF. (2050/ 1950)
Total pop.	229	1,288	1,704	2,528	11
Urban pop.	33	548	824	1,489	45
Rural pop.	196	740	880	1,039	5

Source: World Urbanization Prospects 2018, https://population.un.org/wup/Publications/Files/wUP2018-Report.pdf

Population growth, particularly in urban areas, also requires productivity gains in the agriculture and livestock sectors to ensure an adequate food supply and reduce pressure on woodland. Climate change generates shocks that degrade all sectors (production, processing, market access) and causes recurring volatility in prices and food production (floods, salinization, desertification, food losses, food security/climate nexus). Increasing resilience to extreme weather and climate events has become a major economic and social necessity for all agri-food sectors: from farm to fork. Productivity gains will require easy access to energy, which must be low carbon. These elements of resilience at the level of the sectors can be found at the local level, in rural areas, where agriculture continues to be a major social and economic component.

1.3 – Reconciling climate challenges with economic and social development

The continent also faces major economic and human development challenges: the majority of African countries (31) are still classified in the "low" HDI category, in which the overwhelming majority of countries are African (31 out of 36). More than half of Africa's population still lives without access to electricity (nearly 650 million people), only a quarter of the continent's population has access to safe drinking water, and just 28% of the population has access to basic sanitation. Nearly a quarter of the population still suffers from malnutrition and infectious diseases, such as malaria, which are rife on the continent (malaria kills over 400,000 people each year according to the WHO). **Before the COVID-19 crisis, the World Bank estimated that, by 2030, 90% of the world's population living below the extreme poverty line would live in sub-Saharan Africa** (Beegle and Christiaensen, 2019).

Under these circumstances, investment in human capital, basic social services and access thereto, agriculture and food security must be priorities for African countries, which face significant population growth, particularly in sub-Saharan Africa. The population of Africa, which was estimated at 1.3 billion inhabitants in 1998, is expected to reach 2.5 billion by 2050, and the continent could therefore be home to a quarter of the world's population by that date, the majority of which (for the first time) would then be urban (Table 2). It is clear that achieving the climate transition objectives will also depend on the benefits provided to the population in terms of health and training for the new jobs it is likely to generate. This will require ambitious policies to requalify the workforce and reorient areas linked to fossil energy sectors, which will have to transition to other types of activities: several African countries produce coal and hydrocarbons and will therefore have to align with the global decarbonization effort.

1.4 – Opportunities for a low-carbon and resilient development pathway

In addition to the need for an urgent response to climate hazards, which threaten the livelihoods and homes of many Africans, **the low-carbon transition can strengthen competitiveness and economic resilience, particularly in countries where growth and financial stability are dependent on hydrocarbon prices.** Certain countries, such as Ethiopia, whose energy mix is largely based on renewable energy, are already on a transition pathway.

Globally, price signals favor renewable energy (RE) and will facilitate the transition: in 2019, a kWh produced from renewable energy was 56% cheaper than the least expensive fossil solution available, and solar has been the most economical energy source since 2019 (International Renewable Energy Agency, 2020). This development of renewable energy will also generate a demand for new skills on the labor market, which may provide young people with long-term employment opportunities.

Conversely, hydrocarbon-producing countries are seeing the limits of their development model based on the income from the sale of these carbon-intensive resources. In fact, hydrocarbon-exporting countries have never returned to their growth trajectory since the price shock of 2014 and often have human development scores far below what would be expected on the basis of their per capita income indicators.

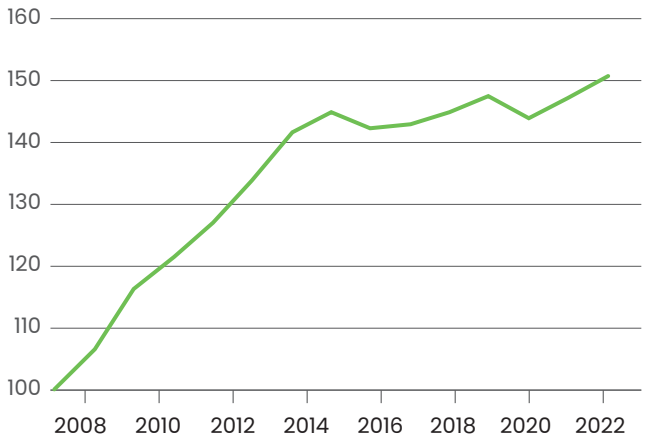
Box 1 - The specific case of African hydrocarbon-producing countries

African hydrocarbon-exporting countries have never recovered from the reversal of the 2014 commodities super-cycle, which for them has been a permanent shock (rather than a temporary shock) with long-term effects on their growth trajectories, as illustrated in Chart 2.

These countries are now aware of the vulnerability of their business model, but remain significantly exposed to price shocks. In fact, over the recent period, their economic situation appears much more fragile than that of non-oil countries: for example, African oil countries (excluding Nigeria, which skews the statistic due to its weight) have experienced four years of recession since 2016, whereas non-oil countries have experienced only one (2020, due to the impact of COVID-19).

To consolidate their growth prospects in the long term, oil-producing countries must seize the opportunity offered by the transition to an economy that is lower in carbon and less dependent on a price cycle whose instability is likely to persist.

Chart 2 - Sub-Saharan African oil countries: GDP index (Index 100 in 2008)



Source: IMF, Regional Economic Outlook.

The opportunities and risks associated with low-carbon transitions are complex to grasp, as they involve numerous economic, financial and social feedbacks. The AFD has developed the GEMMES model, a tool to formalize these transitions and their economic and social externalities. This tool has fostered a high-level public policy dialogue with several African economic authorities. In the Ivory Coast, the GEMMES program is used for this purpose and focuses essentially on energy policy options and the associated economic and social externalities, as well as in terms of CO_2 emissions. In Morocco and Tunisia, GEMMES focuses on the impact of climate change on the water cycle and agricultural productivity in order to define a path towards sustainable and resilient agricultural models.

In addition to macroeconomic modeling exercises, microeconomic and financial studies also show the cost of inaction. In South Africa, for example, a study by the AFD and the Climate Policy Initiative (Huxham et al., 2019) highlighted the country's significant exposure to the risks associated with an international low-carbon transition, in particular lower demand for its coal exports. The estimated value of this risk is about USD 120 billion for the country, almost half of which is likely to be absorbed by the government budget (i.e., 30% of the value of the country's sovereign debt) because of its explicit or implicit support for companies and workers in the energy and coal sector. This country, like other countries in international value chains, has the opportunity to reduce its risk exposure by accelerating its own low-carbon transition and avoiding further investment in high-carbon sectors.

2. African stakeholders are organizing the continent's transition to a low-carbon and resilient development model

2.1 – African climate diplomacy

Aware of its vulnerability to climate risks, Africa has resolutely committed itself to combating the impacts of global climate change, and has hosted three Conferences of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC): in Marrakech in 2001, in Durban in 2011, and again in Marrakech in 2016. At COP15 (2009, Copenhagen), the continent joined the international community in its undertaking to keep global average temperature increases below 1.5°C and made robust commitments in this regard, thereby assuming its share of responsibility in the international response to climate change. In this spirit, all African states submitted their Nationally Determined Contributions (NDCs) at the COP15 and have since ratified the Paris Agreement.

In general, it should be noted that despite the highly diverse climate profiles of African countries, **the continent has developed a genuinely pan-African climate diplomacy over the past ten years.** This diplomacy is embodied by the African Union (AU) and is implemented by African delegations during climate negotiations. In preparation for the Paris Agreement, a common African position was agreed in June 2015 that, in particular, called for the stabilization of global average temperatures at a level well below 1.5°C, a balance between mitigation and adaptation, as well as secure long-term financing. In January 2016, a new common position called on African countries to ratify the Paris Agreement and develop a strategy that maximizes its benefits for Africa.

The AU's Agenda 2063, a 50-year strategic framework, enshrines this African vision of a prosperous and climate resilient continent and of **long-term sustainable development**.

2.2 – Ambitious climate strategies and policies

In addition to their active participation at major international climate conferences, many African countries are increasingly incorporating these commitments into their national development strategies and public policies.

In order to implement its objective to develop an additional 6,000 MW of clean electricity generation capacity by 2030, in 2010 Morocco created the Moroccan Agency for Sustainable Energy (MASEN), an inter-institutional group tasked with overseeing the development of renewable energy in Morocco. Ten years later, the country surpassed its goal of installing 3,000 MW by 2020, and fifteen projects have been launched across the country, including the emblematic Noor Ouarzazate, considered the flagship of Morocco's solar energy strategy.

In Burkina Faso, the development of solar energy is now an integral component of the country's economic development strategy: the government, which inaugurated a solar panel production and assembly plant in 2020 (the first of its kind in West Africa), aims to achieve 1,000 MW of installed capacity by 2022. This is a major economic achievement because the country still depends on electricity imports from its neighbors (Ghana and Ivory Coast), which also carries significant social benefits as the plant has created nearly 200 direct jobs and 2,000 indirect jobs.

Moreover, many governments now integrate adaptation issues in a multidisciplinary manner into their public policies. This has been the case, for example, in the Ivory Coast, whose National Adaptation Plan incorporates adaptation issues into the most vulnerable sectors in the Ivory Coast: agriculture, water resources, land use and coastal resources.

Finally, African countries are also proposing innovative climate finance solutions: in 2014, the Rwandan government launched the FONERWA fund (For a Green & Resilient Rwanda), a centralized platform for attracting and streamlining investments in the low-carbon and resilient transition of the Rwandan economy. In partnership with the Green Climate Fund (GCF), in late 2018, the Development Bank of Southern African (DBSA) established a Climate Finance Facility (CFF) with the goal of directing private financial flows in southern Africa towards climate initiatives.

2.3 – African capacities for innovation and resilience

Africa is the world's youngest continent. Currently, the average age of its population is 19 and half its population will be under 25 by 2050. This youth, which presents a challenge for public authorities, is also a strength. Entrepreneurship attracts 72% of young people according to a survey conducted by the African Development Bank (AfDB). Africa has the highest rate of female entrepreneurship in the world at 24%, compared to 17% in Latin America, 12% in North America, 11% in Southeast Asia, 9% in the Middle East and 6% in Europe.

The continent has also demonstrated a capacity for innovation that shows the potential for technical, economic and social innovation pathways, and even technological leaps (leapfrogging). Half of the continent's population now owns mobile phones, and innovation in the telecommunications sector is very dynamic, both in technical terms and in terms of usage. In the field of energy, the development of off-grid technologies or mini-grids based on solar-diesel or solar-biomass hybrid power generation coupled with storage capacity creates the possibility of "leapfrogging" towards rural electrification, bypassing the process of deploying a national electricity grid as was the case in developed countries.

Box 2 - Some examples of innovation by African citizens

- In Tunisia, Mahmoud Bouassida, an orange producer, used the services of an agri-tech start-up to help him manage his farm and adapt its production to the effects of climate change, using technology: sensors installed in the irrigation pipes and in the soil, and a wireless box connected to Ezzayra's software. The start-up offers an integrated management solution to better manage farms and reduce costs incurred due to waste and insufficient monitoring.

- Recyclan is a start-up that focuses on the sanitation of public spaces and water in Nigeria. It specializes in collecting and exporting plastic waste for the foreign recycling market. The start-up collects plastic waste on beaches and landfills, as well as from the ocean.

- Rensource is a Nigerian start-up that installs its solar or hybrid electricity solution in markets for its SME and VSE customers. These solutions reduce the carbon footprint and electricity bills of these SMEs and VSEs, and also offer a more reliable source of electricity than the national grid. Proparco, an AFD subsidiary that focuses on the private sector, recently acquired a stake in Rensource to support its growth.

- Gora Ndiaye created an agroecological farm school in Kaydara, Senegal. This site experiments and adapts agroecological practices for the Sahel regions. The initiative provides a model for sustainable and environmentally friendly farming.

Finally, Africa has also demonstrated its capacity for resilience: innovative experiments in risk sharing are being developed in response to certain climate crises (e.g., the African Risk Capacity, an AU agency) and are proof of the continent's willingness and ability to set up solidarity-based resilience mechanisms.

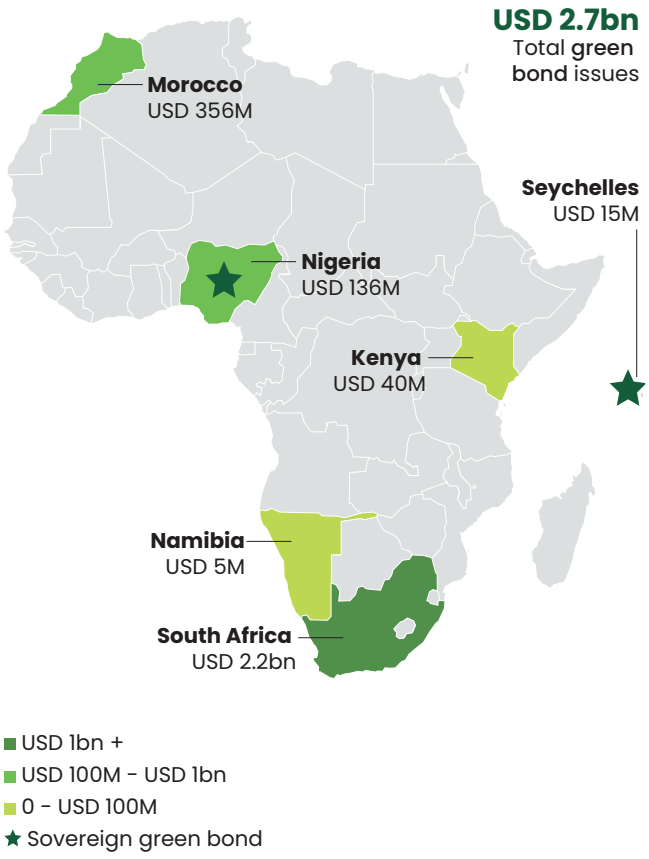
2.4 – Green finance, a powerful tool that is booming on the continent

Directing financial flows towards investments in the low-carbon transition is a major challenge involving commercial banks and supervisory and regulatory authorities, that also brings into play public policy strategies. In this respect, **it is worth noting the strong growth in Africa in bonds devoted to financing the low-carbon transition.**

Following a flat performance in 2018, the global bond market set a new record in 2019 with issues totaling USD 260 billion. It has continued to diversify, in terms of the size of transactions, the number of issuers, and the countries and continents of origin. **Although Europe, the United States and China take the lion's share of this market (China alone accounts for 78% of the global market), the strongest recent growth has been in Africa, where green issues grew by 495% between 2018 and 2019.** In 2019, USD 2.7bn in green-certified bonds and loans were issued, concentrated in just three countries (Map 1). South Africa had the largest green bond issue in 2019, raising USD 2.2bn (Nedbank and Acwa Power), followed by Nigeria (North South Power Company Limited, USD 136M) and Kenya (Acorn Holdings, USD 40M). These issues will be used to finance investments in renewable energy (wind and solar farms), access to sustainable water, and energy efficient buildings.

Despite these recent promising trends, the continent's green bonds currently account for only 1% of the global market and volumes are far too low given the challenges of the transition. Although some African countries have developed appropriate frameworks for issuing green bonds to encourage investment in the low-GHG emissions green economy, the majority has not. Only 12 out of the 54 African countries have such a framework: Morocco, South Africa, Nigeria, Kenya and the 8 WAEMU member countries.

Map 1 - Total green bonds in Africa (December 2019)



Source: FSD Africa / Climate Bonds Initiative.

3.
The role of donors and public development banks in the African transition

African countries and actors are currently designing their future low-carbon development model. However, the role of donors continues to be essential for providing financial and technical support. The investments required to meet the needs of the population (education, health, housing, electricity, food, mobility, etc.), while choosing less carbon-intensive options (energy efficient buildings, public transportation, etc.), are very costly: **infrastructure investment needs are estimated at approximately USD 170 billion per year (3%-7% of the continent's total GDP) in the coming decades (African Development Bank, 2018). For Africa, climate change adaptation costs alone are estimated at USD 50 billion per year by 2050 and USD 350 billion by 2070 (Schaeffer *et al.*, 2013).**

Form a multidisciplinary standpoint and stressing the nexus between climate commitments and other sustainable development goals (SDGs), the technical expertise of public development banks must also demonstrate the possibility of reconciling climate and socioeconomic issues in Africa. Three main areas must structure this commitment: support for actors, acceleration of investments, and actions to promote a just transition.

3.1 – Ensuring greater inclusion of climate issues in public policies by supporting local actors

Donors and public development banks can contribute their expertise to encourage the inclusion of climate issues in public policies, whether in land use planning, urban mobility, education and vocational training policies, or support for the private sector. This support can take several forms: for the development of a sustainable mobility roadmap, for the development of an entrepreneurial ecosystem able to foster the emergence of climate co-benefit initiatives and projects spearheaded by African youth, or for establishing the labor markets of tomorrow, ready to serve a less carbon-intensive economy.

For example, in Mauritania, the AFD provides support for a program that trains electricians to maintain renewable energy production units in order to facilitate the deployment of the national RE development strategy and offer new long-term employment opportunities to young people.

Various tools can be mobilized: targeted budget support or loans linked to public policy reforms that encourage the low-carbon transition, or upstream grants can be offered to help prepare these reforms. A clear legal and regulatory framework is a tool that reassures private investors and has lasting impact on public investments. For example, support of this type is deployed in Egypt in the energy sector. To address the risks of economic and social destabilization due to climate shocks, contingency loans have also been developed to support national disaster risk reduction policies at the country level, as well as to support non-sovereign actors.

Development banks can mobilize specific tools to support transition policies. For example, the AFD has set up two dedicated climate facilities, which were launched in 2015 under the impetus of the Paris Agreement:

- **Adapt'Action Facility:** through its three focus areas (governance, sector policies and investments), this study and capacity building facility, which has financing to confer grants totaling EUR 30.9M, contributes to creating the necessary conditions to carry out the multi-sector climate change adaptation objectives of its partner governments. Currently, eight African countries are receiving support (Cameroon, Congo, Ghana, Guinea, Niger, Ivory Coast, Senegal, Tunisia) and have developed adaptation financing operations in this connection.

- **2050 Facility:** this facility, which has been endowed with EUR 30M, now provides supports to nine African countries to establish and deploy long-term, low-carbon and resilient development strategies consistent with the objectives of the Paris Agreement: prospective study of energy transition scenarios in Algeria, analysis of the impact of climate change on agriculture in Morocco, modeling of energy transition scenarios in the Ivory Coast, climate change and water resource planning in Namibia, modeling of changes in land sector use in Mozambique, decarbonization pathways in Africa (Nigeria, Senegal), support for long-term strategies in Burkina Faso and Ethiopia.

3.2 – Accelerating low-carbon and resilient investments in Africa

Donor support for governments, local authorities and private actors to identify and implement the African climate transition is increasing. A growing number of international financial institutions has made robust climate financing commitments to meet the needs of African countries. **For example, the AFD devotes 50% of its annual financial commitments to climate co-benefit projects, and 100% of its financing is compatible with the Paris Agreement.** At the same time, other donors have also made climate commitments: the World Bank Group announced that, over the period 2020-2035, 35% of its financing on average would have a positive impact on the climate[4]. Similarly, the AfDB has committed to significantly increase its climate financing to African countries, from 9% in 2016 to 36% in 2019[5]. Finally, the International Development Finance Club (IDFC) has committed to mobilizing a total of USD 1,000 billion in climate financing over the period 2019-2025.

- The role of public banks within the IDFC is also to **encourage the redirection of financial flows and investments towards climate-friendly initiatives through dedicated credit lines** for the benefit of local financial operators, as well as to support the climate strategies of local and regional banks. The 450 public development banks account for 10% of global investment, i.e., USD 2,300 billion per year. In a joint statement issued on November 12, 2020 at the conclusion of the first international Finance in Common Summit (FiCS) of Public Development Banks (PDBs), they expressed their commitment to supporting the transformation of the economy and societies towards sustainable and resilient development. Their representatives committed "to redirect their strategies, investments and activities to contribute to the implementation of the sustainable development and climate goals" set by the 2015 Paris Agreement and, in particular, to move towards carbon neutrality of their investments and the exit from coal. **To maintain the momentum of the "Finance in Common Summit," the AFD has encouraged other PDBs to make robust commitments to a low-carbon, resilient and just transition in Africa.** Under the current chairmanship of the AFD, the IDFC has made a EUR 5M Climate Facility available to its members in order to increase their climate financing capacity, particularly vis-à-vis the GCF. Partnerships between PDBs are being actively forged: the AFD has just subscribed for the DBSA's green bond issue (USD 200M).

The AFD also endorsed a statement to **accelerate private sector involvement in climate adaptation and resilience.** The other five signatories of this statement are: the Foreign, Commonwealth & Development Office (FCDO), the CDC Group (CDC UK), an FCDO subsidiary, the Netherlands Development Finance Company (FMO), the Global Center on Adaptation (GCA), and Proparco, an AFD subsidiary. They are committed to uniting and, between now and the COP26, launching initiatives in three areas: (i) strengthening the capacities of private actors (developing joint approaches, skills and best practices); (ii) acting as a catalyst for resilient private investments, including by developing local (at the country level) offers of adapted goods and services; and (iii) including resilience in long-term post-COVID recovery efforts. Given the challenges of climate resilience in Africa and the role of entrepreneurship, this initiative will facilitate the mobilization of all forces in favor of the climate transition.

4 https://www.banquemondiale.org/fr/news/press-release/2020/12/09/world-bank-group-announces-ambitious-35-finance-target-to-support-countries-climate-action

5 https://www.afdb.org/fr/news-and-events/changement-climatique-la-banque-africaine-de-developpement-augmente-fortement-ses-financements-climatiques-pour-les-pays-du-continent-43022

The AFD also influences the redirection of financial flows towards the climate transition through actions such as the "Transforming Financial Systems for Climate" (TFSC) program, which targets commitments of EUR 653M, including EUR 240M in contributions from the Green Climate Fund (GCF). **It aims to transform the financing practices of local financial institutions in order to redirect financing flows towards climate change mitigation and adaptation projects** in numerous sectors: renewable energy, energy efficiency, water and waste management, agriculture and forestry, particularly in South Africa, Benin, Burkina Faso, Cameroon, Ivory Coast, Egypt, Kenya, Morocco, Namibia, Nigeria, Uganda, Senegal, Tanzania, Togo, Madagascar and Mauritius.

3.3 – Reconciling social and climate issues for a just transition in Africa

Investment in projects to combat climate change can also be a vehicle for social progress based on access to basic services, decent jobs and reducing inequalities, thereby cementing the convergence between the climate agenda and the SDG agenda. In 2020, the AFD expressed its view of the just transition as systematically taking into account social aspects when designing and implementing ecological transition projects and policies, and ecological aspects when designing and implementing social transition projects and policies, as well as searching for development models and pathways that combine to ensure human development while respecting ecological limits. Recent initiatives, supported by donors, reflect such synergies:

- For example, one of the goals of adaptive social protection is to trigger social transfers to vulnerable people, particularly women and the food insecure, when climate shocks occur (droughts, floods, crop losses, etc.): the AFD contributes to these tools in several African countries, such as Mali and Mauritania.
- More traditional projects can be used to advance the just transition: in Djibouti, Niger and Chad, social water hook-up programs enable the most disadvantaged citizens to gain access to basic drinking water services, which strengthens climate resilience, advances the access to clean water and better health SDGs, and alleviates burdens on women and young children.
- In West Africa, the AFD supports many projects that encourage agroecology in order to reconcile agriculture and combating climate change, in particular using technologies that are accessible to the most underprivileged citizens, who are also the most vulnerable to shocks.
- More innovative projects can address emerging issues, such as retraining workers in certain mining regions as the coal exit trend accelerates. In South Africa, reflection and dialogue on the just transition are being driven by strategic plans, consultations and multi-stakeholder dialogues on issues such as solidarity, ethics and redistribution, which therefore go well beyond converting "brown" jobs into "green" jobs and focus, for example, on housing, transportation, food production systems and energy systems. The AFD is in discussion with the South African authorities to support this transition and the economic diversification of the communities most dependent on coal production.
- Innovative, bioclimatic and resilient buildings that provide training opportunities for young people or that benefit health facilities are also encouraged by the AFD, in partnership with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), through its dedicated facility administered by the Programme for Energy Efficiency in Buildings (PEEB), which is used in many African countries (Ivory Coast, Morocco, Nigeria, Senegal, Tunisia, etc.).

- The modernization of artisanal public transportation, which accounts for the bulk of the urban mobility offering in African cities and generates hundreds of thousands of low-skilled jobs, has both social impacts (securing and improving employment conditions) and climate impacts (reducing GHG emissions and improving air quality). The Mobilize Your City partnership, which has been supported by the AFD since 2015, has made this one of its new focuses for action in the period 2021-2025.
- In rural areas, support for mobility is key to ensuring access to economic and social opportunities, but is made more difficult by the impacts of climate change (heavier rains flooding tracks, etc.). Rural road rehabilitation projects provide a further illustration of the just transition concept by both promoting climate resilience and improving social ties (labor-intensive work [LIW], improved access to rural areas to strengthen national cohesion).

Conclusion

Due to the economic catching-up specific to developing countries, the African continent will continue to experience strong economic growth in the coming decades, but its development pathway will have to combine two objectives: improving the living conditions of its population while taking climate challenges into account. As we have seen, these two objectives are not incompatible because the continent has abundant resources it can use to minimize the carbon intensity of its growth (particularly in the energy sector). Another advantage is that Africa will continue to benefit from rapid technical progress in the fields of renewable energy generation and storage. Lastly, the continent is less subject to the lock-in effects observed in many emerging countries because much of its stock of physical capital is yet to be built. However, reconciling human development objectives with taking action to deal with climate challenges requires defining appropriate policies, particularly in terms of land development, urbanization and agricultural development in a continent that faces significant population growth. Reconciling these objectives also requires the full mobilization of financial players, especially development banks. They will play a decisive role in directing financing flows towards the investments needed for a development pathway that respects human needs and the constraints imposed by climate challenges.

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Acronyms and abbreviations

AFD	Agence française de développement (the Agency)
AFDB	African Development Bank
AFOLU	Agriculture, Forestry and Other Land Use
ARC	African Risk Capacity (African Union agency)
AU	African Union
BN	billion
CAIT	Climate Watch (World Resources Institute)
CFF	Climate Finance Facility (DBSA)
COP	Conference of the Parties
DBSA	Development Bank of Southern Africa
ECO	Economic Diagnostics and Public Policies (AFD department)
EUR	Euro
FCDO	Foreign, Commonwealth & Development Office
FICS	Finance in Common Summit
FMO	Netherlands Development Finance Company
GCA	Global Center on Adaptation
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse gases
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit* German International Cooperation and Development Agency
GW	Gigawatt
HDI	Human Development Index
IDFC	International Development Finance Club
IMF	International Monetary Fund
INHAB	Inhabitant
KWH	Kilowatt hour
LIW	Labor-Intensive Work
M	million
MASEN	Moroccan Agency for Sustainable Energy
MW	Megawatt
NDC	Nationally Determined Contributions (under the Paris Agreement)
PDB	Public Development Bank
PEEB	Programme for Energy Efficiency in Buildings

RE	Renewable energy
SDG	Sustainable Development Goals (United Nations)
SMES	Small and medium-sized enterprises
SWAC	Sahel and West Africa Club
TCO2E	Tons of carbon dioxide equivalent
TFSC	Transforming Financial Systems for the Climate (AFD program)
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollar
VSES	Very small enterprises
WAEMU	West African Economic and Monetary Union
WHO	World Health Organization (UN agency)

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