Opportunities for Climate Philanthropy Engagement in Africa

SUMMARY REPORT

FEBRUARY 2020

ClimateWorks FOUNDATION

Good Energies
POWER FOR A BETTER WORLD

Dalberg

I. Overview

Greenhouse gas emissions in Africa are projected to **increase by over 2.5 times to 10% of global emissions** by 2050, driven by large transformations in electrification, urbanization, land use change, and industrialization.

Furthermore, new investments into fossil fuel-based energy and other high-carbon infrastructure projects have the potential to both accelerate and lock in significant emissions through mid-century, while also diminishing the economic competitiveness of African economies over time. Yet, climate philanthropy has had a relatively small role addressing mitigation needs across Africa to date.

ClimateWorks Foundation and Good Energies Foundation commissioned Dalberg Advisors to develop this landscape study to help the philanthropic community better understand mitigation opportunities in Africa with high greenhouse gas emissions (GHG) reduction potential and strong development benefits. This study identifies 17 opportunity areas for philanthropy to shape critical systems, transform key sectors, and support cross-cutting investments in mitigation efforts in Africa. Each opportunity has a set of high-potential entry points for change, and philanthropies can evaluate the strategic fit of these opportunities and entry points by considering where their organizations can be additive. This report provides a summary of the key findings of the broader study. The results of this work are intended to be a resource for the philanthropic field, but it is beyond the current scope of work to provide a specific roadmap for individual funders.

ClimateWorks FOUNDATION

ClimateWorks helps climate leaders and philanthropists come together to be more strategic, efficient, and effective in their response to global climate change. They are a collaborative team of researchers, strategists, and grantmakers committed to the mission of mobilizing philanthropy to solve the climate crisis and ensure a prosperous future. Since 2008, ClimateWorks has provided $1B in grants to organizations around the world focused on solving climate change.

Good Energies
POWER FOR A BETTER WORLD

Good Energies Foundation's goal is to help prevent climate change and mitigate its harm, especially to people who live in poverty. It focuses on two levers that reverse climate change: clean energy and forest protection. Backed by a family of entrepreneurs, Good Energies Foundation invests in early-stage market solutions and funds efforts to bring successful approaches to scale.

Dalberg

Dalberg is a global group working to build a more inclusive and sustainable world where all people everywhere can reach their fullest potential. Dalberg partners with and serves communities, governments, philanthropic institutions, and companies throughout the world, providing an innovative mix of advisory, investment, research, analytics, and design services.

II. Emissions drivers and funding gaps in Africa

Four large structural transformations - urbanization, electrification, industrialization, and land use change - are driving GHG emissions growth across the African continent. These transformations are a result of national development strategies and are shaped in part by investment from inside and outside the continent. The six sectors underlying these four transformation areas (power, agriculture, forestry, transport, industry, and buildings) are projected to drive ~90% of 2050 emissions.

In addition, investments from China and others into energy and infrastructure projects has the potential to lock in significant GHG emissions. Nearly 30% of coal-fired electricity capacity additions in Africa are financed by China, and the Belt and Road Initiative is solidifying ties between China and Africa. At the 2018 Forum on China-Africa Cooperation, which had near universal attendance by African countries' leaders, China signed MOUs with 37 African countries and the African Union and announced a new $60 billion infrastructure funding package.[1]

Given these trends, there is a growing need for climate philanthropy to address mitigation priorities in Africa. While the world is trying to achieve net zero emissions by mid-century, total emissions across Africa are projected to increase by over 2.5 times by 2050 to ~7.7 GtCO2e.[B] Although climate adaptation will continue to be a focus in Africa, these projections indicate mitigation is increasingly important.

Continent-wide trends and large structural transformations will shape emissions growth in Africa

SOCIAL, DEMOGRAPHIC, AND ECONOMIC TRENDS IN AFRICA[A]

2.5B people **will live in Africa** in 2050, up from 1.2 billion in 2018

59% of the region's population **will reside in urban areas** by 2050

43% increase in private sector **investment in manufacturing** by 2030

2.3x growth in **household consumption** by 2030

ARE CONTRIBUTING TO **FOUR LARGE STRUCTURAL TRANSFORMATIONS** THAT DRIVE EMISSIONS

Urbanization – housing demand for additional 900 million urban residents by 2050

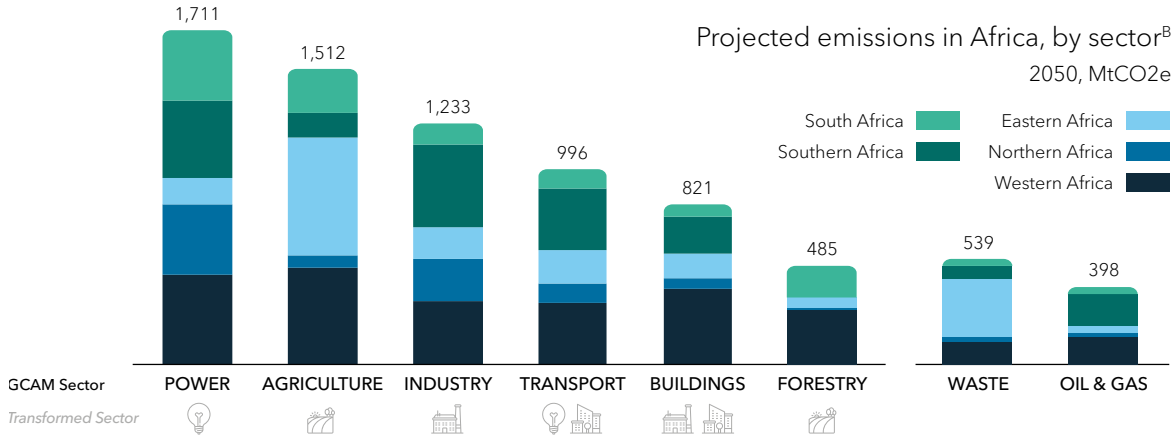
Electrification – 1.6 TW of power generation needed by 2030; ~600 million people need to access electricity

Industrialization – manufacturing growing faster than anywhere else in the world, with some countries' outputs growing >10% per year

Land use change – agriculture expansion to feed growing population drives up to 84% of deforestation

FIGURE 1 ▲ ▼ FIGURE 2

~90% of emissions by 2050 are projected to come from six sectors linked to the four structural transformations



1 China Global Investment Tracker, 2019; Global Energy Monitor, 2019; Xinhua, "China signs MOUs with 37 countries, AU on B&R development," 2018.
A Impacts of climate change could negatively impact this trend given potentially large consequences for development, food production, water availability, and investment. Sources: UN, 2018; Overseas Development Institute, 2015; Brookings, 2018; IRENA, 2015; Dalberg analysis. B Emissions based on GCAM Reference Scenario; Dalberg and ClimateWorks Foundation analysis.

Six sectors are projected to drive

90% of Africa's 2050 emissions

– GLOBAL CHANGE ASSESSMENT MODEL REFERENCE SCENARIO

POWER AGRICULTURE FORESTRY TRANSPORT INDUSTRY BUILDINGS

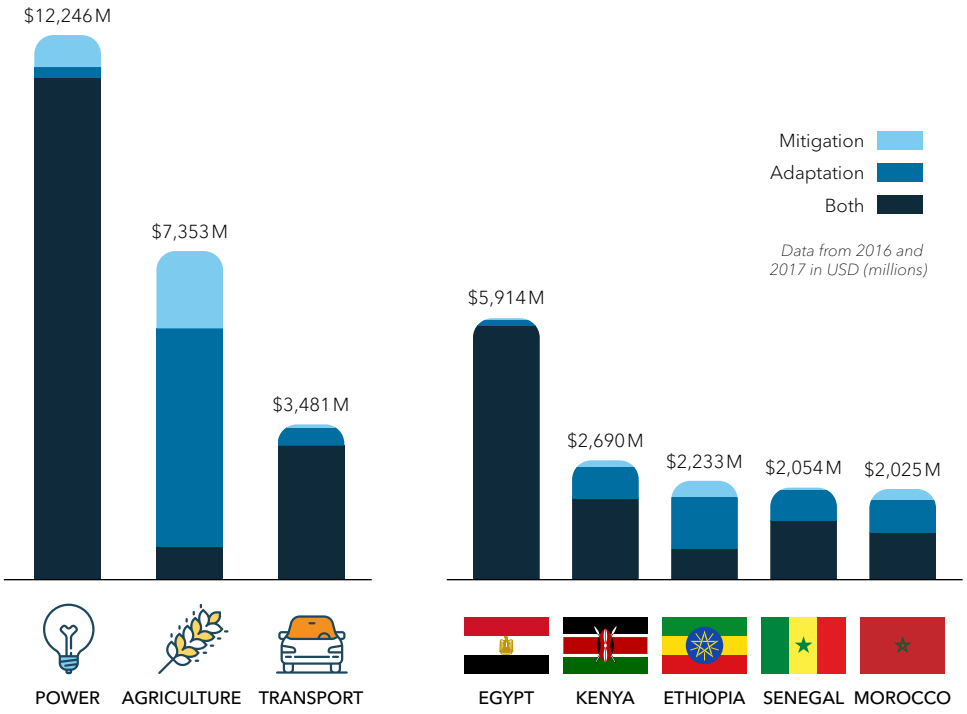
However, Africa receives a very small share (<3%) of current global climate philanthropic funding for mitigation. Currently, climate funding for Africa is concentrated in a few sectors and countries. If compared to the sectors and regions that are expected to contribute the most to emissions growth going forward, there are a number of gaps across the continent that represent potential areas for philanthropy and other investors to engage.

FIGURE 3

Currently, climate funding[2] flows to Africa are concentrated in certain sectors and countries

Almost all sector-specific public climate funding[1] in Africa is concentrated in **three sectors…**

…and 40% of all public climate funding in Africa flows to just **five countries.**



Remaining sectors for comparison: Forestry $692M • Multi-sector $366M • Industry $325M • Buildings $6M
Follow-up countries for comparison: Tunisia $1,575M • Rwanda $1,483M • Tanzania $1,432M • Burkina Faso $740M • Uganda $733M

Climate funding gaps in Africa

FIGURE 4

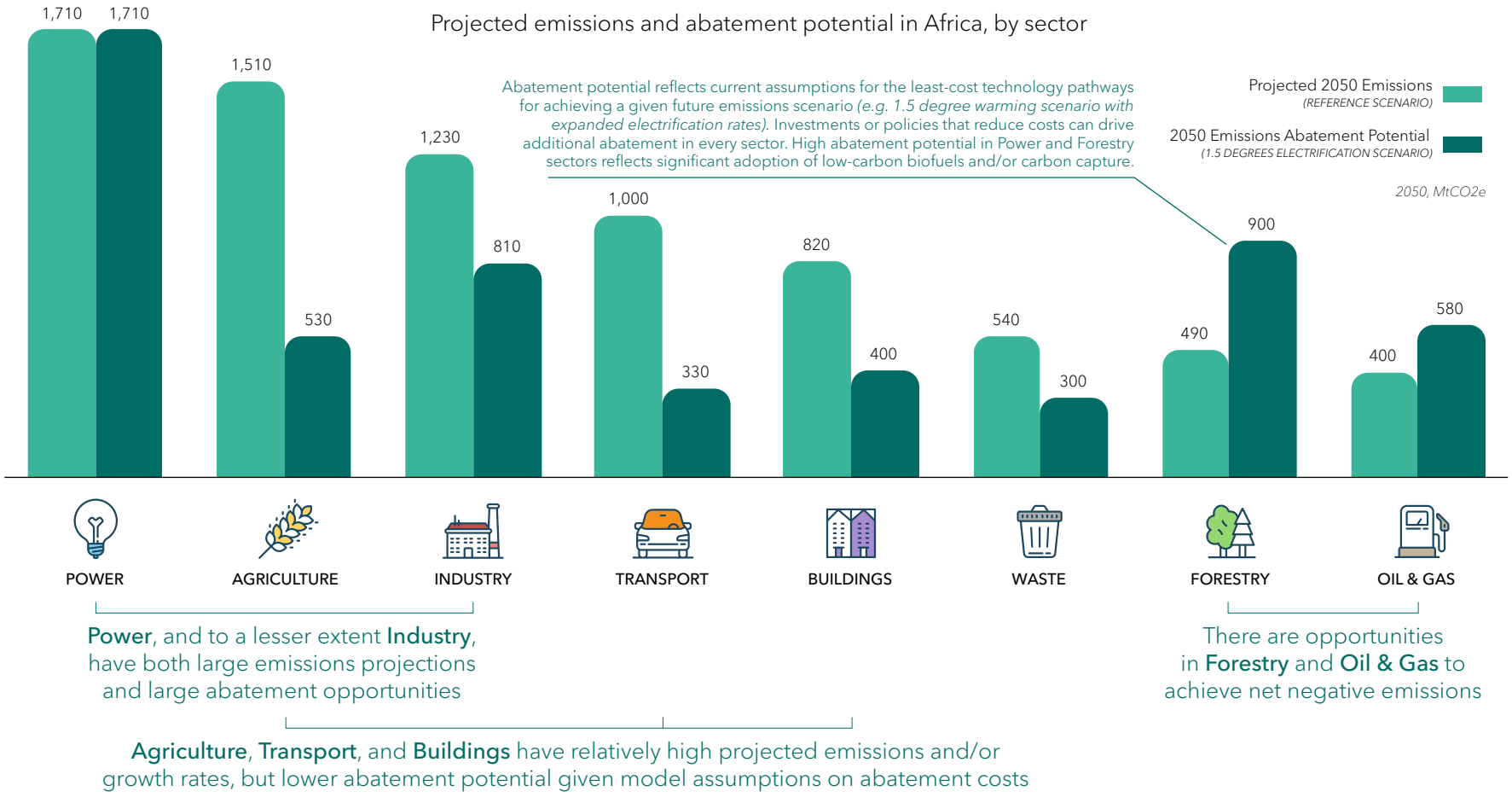
Sector	Summary of current funding flows	Funding gaps
POWER	**Sector:** Receives the most funding; most is for renewable energy generation **Geography:** Concentrated in Egypt overall, and in East Africa for philanthropy	**Sector:** Transmission & distribution, grid stability, energy storage, and grid integration; *Just Transition* efforts **Geography:** Non-renewable energy producing countries (e.g., Nigeria, South Africa)
AGRI-CULTURE	**Sector:** Relatively low mitigation funding; most is for agricultural development, policy/ administrative management **Geography:** Fragmented across countries	**Sector:** Overall, especially for livestock and soil restoration **Geography:** High emitting countries (Nigeria, South Africa, Tanzania)
FORESTRY	**Sector:** Low funding; most is for policy/administrative management **Geography:** Fragmented across countries	**Sector:** Overall, especially land/biodiversity restoration **Geography:** High deforestation/ palm oil production countries (Nigeria, DRC)
TRANSPORT	**Sector:** Low funding overall, especially from philanthropy; most is for rail and road transport **Geography:** Concentrated in North Africa	**Sector:** Overall, especially policy development **Geography:** Countries with high vehicle stock/growth (Ghana, Nigeria, South Africa, Uganda)
INDUSTRY	**Sector:** Very low funding, especially for mitigation **Geography:** Concentrated in North Africa	**Sector:** Overall sector, especially for mitigation (efficiency standards/technologies, renewable energy, etc.) **Geography:** Countries with high industry emissions growth (Ethiopia, South Africa)
BUILDINGS	**Sector/Geography:** Almost no climate funding	**Sector/Geography:** Overall sector

strong linkages

1 Public climate funding is estimated and includes funding from multilateral, bilateral, and national Development Finance Institutions, as well as from international climate funds.
2 Public climate funding includes funding from multilateral, bilateral, and national public DFIs and Climate Funds.

FIGURE 5

There is high potential to abate emissions across sectors, particularly in power, forestry, and industry



While there is an opportunity to abate emissions across all sectors, the abatement potential of power (~1700 Mt CO2e), forestry (~900 Mt CO2e), and industry (~800 Mt CO2e) sectors are particularly high by 2050. **Climate philanthropy can play a key role in catalyzing financing to support mitigation efforts with the potential to boost economic and/or social development through increasing productivity or reducing poverty, unemployment, and inequality.**

There is an immediate window in the coming years for philanthropy to shape climate mitigation efforts, as African countries develop the implementation plans for their Nationally Determined Contributions (NDCs) as part of the Paris Agreement and mobilize resources for sustainable development policies and programs to achieve the Sustainable Development Goals (SDGs).

Figure 5 Source: Global Change Assessment Model v4.3; Dalberg and ClimateWorks Foundation analysis.

III. Opportunities for philanthropy to deepen climate mitigation engagement in Africa

While climate philanthropy is working globally to support efforts to reduce emissions in geographies where continued action is necessary, there are also numerous opportunities for philanthropy to support mitigation efforts in Africa over the next 3-5 years while also contributing to low-carbon economic development on the continent.

PHILANTHROPY CAN HELP SHAPE EMISSIONS GROWTH DRIVEN BY THE FOUR TRANSFORMATIONS IN THREE DISTINCT WAYS:

1. Opportunities to shape transformations at a systems level

- *These are entry points for philanthropy at the "systems level" that can positively re-shape the emissions trajectories of these transformations*
- *Entry points typically include coordination, integration, and convening efforts across sectors, along with support for policy and advocacy efforts*

2. Sector-specific opportunities to drive change

- *These are discrete sector-specific interventions to change emissions pathways by driving innovation in various parts of the system*
- *Opportunities may include R&D, catalytic and/or blended financing, and capacity-building efforts. Can also include support for policy and advocacy efforts.*

3. Cross-cutting opportunities

- *These are foundational or institutional efforts that can accelerate climate mitigation efforts across all sectors*
- *Opportunities focus on enabling more effective climate action by improving data, mobilizing leadership, strengthening civil society, and supporting national and sectoral planning and implementation of low-carbon development pathways*

This report identifies the following 17 opportunity areas for philanthropy to shape critical systems, transform key sectors, and support cross-cutting investments in mitigation efforts in Africa. These opportunities are summarized in Figure 6. The pages that follow provide details on each.

FIGURE 6

4 STRUCTURAL TRANSFORMATIONS SHAPING AFRICA

Urbanization

Electrification

Industrialization

Land Use Change

Opportunities for philanthropy to shape these transformations at a systems level

- **Urbanization:** Support development of holistic urban planning and design frameworks; Invest in capacity-building and leadership development for cities
- **Electrification:** Support efforts to advance multi-sector electrification through roadmaps and policy; Support development of next generation "fit for purpose" utilities; Support development of "renewables lobby"
- **Industrialization:** Support integrated industrial planning and policy design that drives low-carbon industrialization; Support stakeholders to develop efficiency roadmaps and catalyze financing for energy efficient industrialization
- **Land Use Change:** Support policies to advance land tenure/governance reforms; Support holistic valuation of land & ecosystem services; Support integrated policies/plans for land use and restoration

Sector-specific opportunities for philanthropy to drive change

- **Urbanization:** Promote energy-efficient buildings; Promote low-carbon building materials
- **Electrification:** Expand on- and off-grid renewables; Promote energy-efficient appliance ecosystem
- **Industrialization:** Promote low-carbon manufacturing
- **Land Use Change:** Decouple agricultural expansion from deforestation; Improve livestock management; Promote climate-smart crop management; Strengthen forest protection/restoration

← Advance electric mobility →

Cross-cutting opportunities for philanthropy

← Strengthen data and analytic systems and platforms →

← Broaden, strengthen, and elevate leadership and capacity of civil society and communities →

← Support accelerating low-carbon development plans and pathways across the continent →

1. Urbanization: Shaping the design and growth of low-carbon and sustainable cities

There is a promising immediate window for philanthropy to shape the design and growth of low-carbon and sustainable cities. African cities are growing rapidly at an average annual rate of 4%, over twice the global average. Many cities are encouraging urban sprawl due to lack of planning capacity, inadequate access to finance, and misaligned governance and land-use incentives that promote carbon-intensive urban infrastructure.

At the systems level, there are opportunities to:

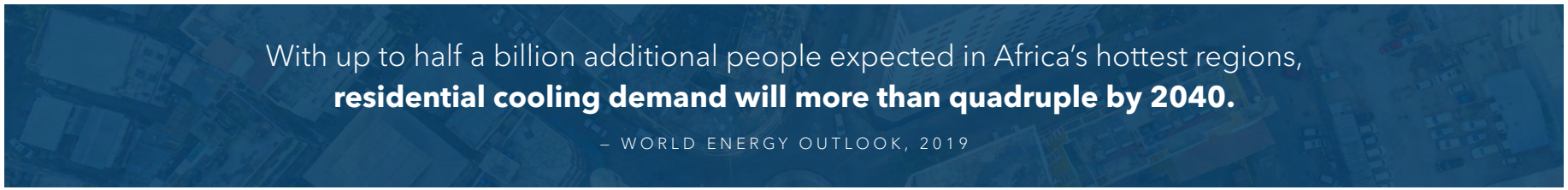
- ***Support development of holistic urban planning and design frameworks that support low-carbon urbanization.*** *Such plans and frameworks should be appropriate to African cities, responsive to formal and informal economies, and inclusive of relevant models to curtail urban sprawl, develop resource efficient building design/materials, encourage transit-oriented development, safety and walkability, manage waste effectively, among others.*
- ***Invest in capacity-building and leadership development to fill existing gaps in urban planning and design.*** *The scale of urbanization in Africa is not supported by required technical expertise (e.g., there are 12 urban planners per 1 million people in Sub-Saharan Africa vs 370 per 1 million people in the UK).[3] Investments to strengthen capacity for inclusive urban policy design and implementation, to improve the linkages between city-level planning with national level plans (i.e., by developing intergovernmental linkages), and to implement transitions to low-carbon and inclusive urbanization could positively shape the path of urbanization on the continent.*

At the sector level, there are opportunities to:

- ***Promote energy-efficient buildings***

  Population growth will continue to drive new building construction (projected floor area increase of 50bn m^2 in Africa by 2050).[4] There is an opportunity to reduce emissions in buildings and avoid long-term emissions lock-in by promoting "green" designs with natural lighting, shading, and ventilation. This will require testing to demonstrate viability, and policy support, finance and capacity building, as well as development of measurement systems to quantify progress.

Gaps to address	Entry points for philanthropy
Limited visibility of technical and economic viability	**Testing** natural designs in residential and commercial buildings to demonstrate benefits to construction industry and city government stakeholders
Limited access to finance for green buildings	**Financing** small- and medium-scale construction projects that use green building designs; potentially creating a fund to pilot, test, and scale green building designs **Policy** support to create financial incentives for green buildings
Difficulty tracking and enforcing efficiency improvements	**Research** and development on energy and emissions measurement systems for stakeholders to quantify progress **Policy** support for regular audits to ensure existing building efficiency codes are being enforced
Limited stakeholder awareness	**Promote** awareness of green building benefits by developing building efficiency educational materials for policymakers, the construction and real estate industry, and occupants



3 Dalberg extrapolation based on *The State of Planning in Africa*, African Planning Association and UN HABITAT. 4 *Africa Construction Trends Report* 2018, Deloitte.

Promote low-carbon building materials

As construction activity increases due to industrialization, population growth, and urbanization, demand for cement and other construction inputs with carbon-intensive production will increase. There is an opportunity to achieve emissions reductions in buildings and avoid long-term lock-in by increasing the use of low-carbon construction materials, such as compressed earth bricks, adobe blocks, and stone. This will require research and testing of alternative, locally-producible materials, policy support for improved building standards, subsidies to promote uptake, and development of methods and tools to measure embodied emissions.

Gaps to address	Entry points for philanthropy
Lack of viable low-carbon building materials	**Testing** the development and roll-out of new low-carbon, cost-effective building materials and deconstruction processes; support the transfer of materials/technology from mature markets
Limited incentives for market uptake of low-carbon building materials	**Policy** support for the development and implementation of advanced building design and construction standards that account for embedded carbon and lifecycle emissions of construction materials; support the creation of fiscal incentives (e.g. subsidies, tax breaks) for use of low-carbon materials
Minimal ability to track materials' emissions	**Research** and development to create and implement effective measurement methods and tools for calculating carbon-intensity of materials

Increased incomes and investments in road network expansion are
expected to triple the number of personal vehicles in Africa by 2040.

– WORLD ENERGY OUTLOOK, 2019

Advance electric mobility

The number of personal vehicles in Sub-Saharan Africa is expected to triple by 2040.[5] *There is an opportunity to reduce emissions in passenger transport in the long-term by advancing electric mobility systems, prioritizing 2- and 3-wheelers, followed by bus transit, and then cars. This will require investment in R&D into lower-cost, locally-appropriate technology, support for policy design and stakeholder mobilization, and financing for technology deployment and testing (e.g. for electric bus pilot tests, support to incorporate electric bus plans into broader city transport plans).*

Gaps to address	Entry points for philanthropy
Minimal inclusion of electric buses and other electric vehicles in city and transport plans	**Policy** support to cities to adapt existing Bus Rapid Transit (BRT) plans to incorporate electric bus routes, creating charging infrastructure for passenger vehicles **Convening** to bring together stakeholders to raise awareness, mobilize stakeholders, and design pilots
Technical and commercial challenges with electric vehicles and associated infrastructure	**Research** into locally-suitable electric vehicle designs and infrastructure requirements/models **Testing** the introduction of electric buses, vehicles, and two- and three-wheelers at city-scales **Financing** the development of credit facilities and products for bus operating companies, corporations, and cities to acquire electric vehicle fleets

5 *World Energy Outlook 2019.*

2. Electrification: Scaling up end-use electrification powered by renewable energy

African countries are faced with the dual objectives of increasing electrification to connect another 600 million people while reducing energy emissions by mid-century. With national development plans and sustainability targets in place, Africa's electricity demand is expected to double by 2040. While large projected growth in renewables will help meet that demand, fossil fuels will continue to generate over half to two-thirds of energy, according to the IEA.[6]

At the systems level, there are opportunities to:

- ***Support efforts to advance multi-sector electrification*** *through the development of electricity integration roadmaps, standards, and policy/regulatory reforms to enable and incentivize coordination and implementation.*
- ***Support the development of next generation "fit for purpose" utility models*** *and the broader enabling ecosystems to facilitate the growth of centralized and decentralized generation from renewables (e.g., by catalyzing financing for grid integration, coordinating pilots/testing to de-risk mini and micro grids, supporting technical skill dev, etc.).*
- ***Promote the development of a "renewables lobby" to advocate against new coal or natural gas*** *generation projects, potentially through litigation or other advocacy efforts.*

At the sector level, there are opportunities to:

- ***Expand on- and off-grid renewables***
  There is an opportunity to achieve emissions reduction in power by accelerating small-scale and large-scale renewable energy generation. This can take place by supporting coordination and alignment of investment policies and incentives (including for battery storage and ancillary services needed for grid stability), and scaling up investment in large-scale renewables by providing risk mitigation instruments or subsidies to catalyze private investment.

Gaps to address	Entry points for philanthropy
Lack of coordination for renewables integration and grid stability (utility scale, commercial & mini-grids)	**Policy** reforms and market development/pricing for storage and ancillary services to strengthen grid stability, net metering, tariffs, and grid interoperability **Testing** of innovative decentralized off-grid and integrated mini-grid business models (to manage stranded asset risks) **Capacity** building and skilling for public sector ministries and regulators to facilitate sector investment & growth
Limited private investment due to riskiness of utilities/off-takers and challenging last-mile economics	**Finance** support for concessional/blended financing (debt and/or guarantees) to reduce risks to commercial investors due to limited credit worthiness of utilities **Capacity** building for utilities and ministries to address bankability challenges through improved financial management **Finance** incentives to spur last-mile electrification

- ***Promote energy-efficient appliance ecosystem***
  As populations, incomes, and electrification grow, consumption of electricity-powered devices and appliances will rise too. Emissions from such appliances/technologies (particularly from cooling) are projected to rise.[7] Power emissions can be reduced by lowering the cost of efficient appliances, which will require R&D into lower-cost products, support for the development and enforcement of efficiency standards, limits on less efficient imports, and campaigns to raise consumer awareness on cost savings from energy efficiency.

Gaps to address	Entry points for philanthropy
Lack of energy efficiency standards	**Policy** support for the development of efficiency standards for appliances as well as stronger enforcement of efficiency standards by supporting the use of auditing practices
Limited uptake of high-efficiency appliances	**Research** into lower-cost, higher-efficiency versions of household and commercial appliances (such R&D can occur outside Africa, but strong need for adoption in Africa) **Financing** of credit facilities for appliance retailers, perhaps through results-based financing programs to spur uptake
Reliance on imports of low-efficiency appliances	**Policy** support on the creation and enforcement of age limits and efficiency requirements for imported appliances **Financing** or access to credit for consumers to afford initial costs of higher-efficiency products (imported or domestic)
Limited consumer awareness on energy use	**Policy** support for labeling requirements on appliances **Capacity** building to develop consumer awareness campaigns on appliance energy use and costs of low efficiency

6 IEA, "World energy outlook," 2018; IRENA, "Africa 2030," 2015; IEA, "Energising devjn Sub-Saharan Africa," 2017. 7 Global Change Assessment Model; World Energy Outlook 2019.

3. Industrialization: Charting low-carbon commercial and industrial pathways

There is an opportunity to support national development priorities and plans to chart low-carbon industrialization pathways. While levels of industrialization are still low across the continent, increasing private sector investment is expected to drive industrial growth, reinforced by government interest in boosting manufacturing as a source of employment. However, logistics challenges and reliance on diesel-based emergency power producers hinder the manufacturing sector both from growing and from adopting low-carbon practices.

At the systems level, there are opportunities to:

- ***Support integrated (multi-sector) industrial planning and policy design and implementation that drives low-carbon industrialization****, for example, by developing and testing frameworks and pathways for resource efficiency, circularity in inputs/outputs, and integration of natural infrastructure.*
- ***Convene private and public stakeholders to develop low-carbon roadmaps for different sectors*** *and catalyze financing for investment to implement them.*
- ***Support the development of on-site commercial and industrial renewable energy generation*** *and/or replacement of generators by catalyzing financing for debt facilities, grid interoperability and net-metering policies, and increasing awareness of benefits among manufacturers.*

At the sector-level, there is an opportunity to:

- ***Promote low-carbon manufacturing***
  There is an opportunity to reduce emissions in industry in the long term by increasing the efficiency of manufacturing processes. This will require early-stage testing of higher-efficiency processes and policy incentives for uptake. There are also opportunities to support convenings to create consensus around and roadmaps for low-carbon industrialization.

Gaps to address	Entry points for philanthropy
Limited uptake of energy-efficient machinery and low-carbon fuels	**Policy** support for creation of legislation, including tax breaks/ subsidies, that establish rigorous efficiency regulations and standards and incentivize uptake of low-carbon machinery and clean fuels **Capacity** building for governments and civil society organizations to further advocacy aimed at reducing the emissions of industrial facilities and developing sector and industry-wide low-carbon roadmaps **Financing** to enable small enterprises to transition to using low-carbon machinery and fuels **Testing** low-carbon machinery (new or acquired through technology transfer) in African industrial firms
Limited stakeholder alignment and knowledge on low-carbon practices	**Convening** regional meetings of public and private industrial leaders and civil society to set agendas, secure commitments, and exchange knowledge on emissions-reducing practices in manufacturing

Electricity demand in Africa is expected to double over the next two decades.
Fossil fuels will continue to generate **over half** of Africa's electricity in 2040.

– WORLD ENERGY OUTLOOK, 2019

Note: Additional sector-level opportunities related to industrialization were considered, including support for a more energy efficient extractives sector and support to advance low-carbon cement production. These opportunities were deprioritized based on an assessment of potential for impact, feasibility, and/or additionality by philanthropy.

4. Land Use Change: Optimizing sustainable land use for forestry, food, and energy

There is an opportunity to support climate-smart land use policies and practices to drive mitigation while improving food security and livelihoods. Africa's population is expected to double by 2050 and demand for food and fuel production will increase. African countries are experiencing rising emissions from land degradation and deforestation due to growing livestock demand, persistent savanna burning, agricultural expansion, unplanned urban and industrial construction, and use of biomass for cooking fuel. Simultaneously, while agricultural emissions contribute to climate change, agricultural systems are becoming increasingly vulnerable to its effects.

At the systems level, there are opportunities to:

- ***Support development, implementation, and enforcement of policy efforts to advance land tenure and land governance reforms in high value forest and agriculture ecosystems****, including investments in nationally accepted cadastral systems, to promote land/soil restoration. This may include support for litigation efforts, especially for protection of forest rights.*
- ***Support efforts to evaluate and quantify the value of ecosystem services from land*** *(including value as carbon sinks, natural carbon removal, and livelihood support).*
- ***Convene appropriate stakeholders to collectively devise roadmaps for sustainable land use and restoration****, optimizing multiple agendas for rising bioenergy demand, afforestation, converting land for growing cities, and conservation.*

At the sector level, there are opportunities to:

- ***Decouple agricultural expansion from deforestation***
  The rising demand for African cash crops and commodities (e.g., palm oil and cocoa), is expected to lead to deforestation and forest/land degradation. Furthermore, low crop-yields and high post-harvest losses drive emissions through agricultural land expansion, which accounts for over 80% of forest loss in key countries.[8] There is an opportunity to reduce forestry emissions in both the near and long term by decoupling agriculture expansion from deforestation. This includes testing deforestation tracking tools and agroforestry finance programs, supporting convening agribusiness leaders, cash crop farmers, civil society, and local governments to align on deforestation actions, and supporting policy incentives to scale agroforestry to promote land and forest restoration.

Gaps to address	Entry points for philanthropy
Limited collaboration between local governments, cash crop producers, and agribusiness	**Convening** global agribusiness/cash crop leaders with civil society organizations and local governments to facilitate joint development of goals and action plans towards deforestation reduction and land rehabilitation/ecosystem restoration
Limited agroforestry and sustainable supply chains	**Testing** carbon and other ecosystem services payments for cash crop farmers and farmers in agribusiness supply chains who implement agroforestry practices **Financing** patient capital for new funds to invest in longer tenure agroforestry products
Minimal deforestation tracking capacity, especially at local levels	**Policy** support for localities in devising jurisdiction-based anti-deforestation regulations to ease process of deforestation tracking for agriculture businesses **Testing** tools to better measure deforestation baseline emissions and emissions reductions, providing consistent methodology to compare data across countries and localities

84% of deforestation in the Congo Basin is due to clearing for agriculture.
Low yields and high post-harvest losses drive emissions from deforestation through agricultural land expansion.
– FAO; TYUKAVINA ET AL., 2018

8 FAO; Tyukavina, et al. "Congo Basin forest loss dominated by increasing smallholder clearing." *Science Advances* 4.11 (2018).

Improve livestock management

Emissions from livestock are predicted to contribute to more than ~70% of total emissions from agriculture in 2050.[9] Poor livestock diets, insufficient healthcare, unselective breeding methods, and unsustainable pasture management contribute to high emissions per unit of meat production. There is an opportunity to reduce emissions in livestock in the long term by supporting improved livestock management practices. This will require R&D in local livestock breeds and inputs, support for Africa-focused emissions measurement systems, and adoption of climate-smart inputs and practices through capacity and financing.

Gaps to address	Entry points for philanthropy
Lack of localized livestock emissions data	**Research** and development for the creation of livestock emissions measurement, reporting, and verification systems to support livestock policy development and implementation
Limited knowledge and adoption of animal husbandry practices	**Research** into higher-productivity and lower-emitting livestock breeds **Capacity** building through extension services/trainings for farmers on improved animal healthcare and breeding practices
Constraints to scaling uptake of livestock inputs	**Research** on emissions-reducing local livestock feeds **Capacity** building through extension services/trainings for farmers on locally available emissions-reducing feeds **Financing** for farmers to enable them to invest in improved feeds
Limited large-scale adoption of climate-smart livestock mgmt.	**Capacity** building through extension services or other farmer trainings to scale adoption of improved manure, herd, and grassland management practices (e.g., rotational grazing, sowing improved varieties of pasture) for land restoration

Promote low-carbon crop management

Poor crop management practices will generate high emissions primarily as the result of land degradation due to inefficient fertilizer use and limited soil conservation efforts. There is an opportunity to reduce inputs and restore land to achieve emissions reductions in crop management in both the near and long term by supporting uptake among smallholder farmers of Climate-Smart Agriculture (CSA) practices, which aim to sustainably increase agriculture productivity and food security while restoring soil health and building crop resilience. Successful adoption of CSA practices will require R&D into the most effective techniques for local contexts, development of policy mechanisms that incentivize farmers to engage in CSA, and capacity-building among farmers.

Gaps to address	Entry points for philanthropy
Limited knowledge of Africa-specific techniques	**Research** on techniques that are most appropriate to local soil and climate types across different African countries to identify the most effective localized CSA techniques
Lack of widespread farmer (especially smallholder) awareness of CSA practices	**Demonstration** and **capacity-building** through projects and extension services to drive peer-to-peer learning on CSA practices, equip and enable local leadership, and enhance economic benefits between cooperatives and smallholder farmers in agribusiness supply chains
Minimal incentives for initial uptake of CSA	**Policy** support to drive the formation of markets for CSA-grown crops, with incentives for growers and interested buyers **Financing** the development of new credit products from local financial institutions to fund CSA resource investments by smallholder farmers

Strengthen forest protection / restoration

As deforestation continues across Africa, driven by increased logging and expansion of cash crops, subsistence farming, and agribusiness, the absence of strong mechanisms to prevent illegal forest loss will contribute to emissions growth. There is an opportunity to reduce forestry emissions in the near term by strengthening forest protection practices, reforming forest codes and land tenure policies, financing afforestation/reforestation efforts, and supporting capacity-building for effective implementation and enforcement.

Gaps to address	Entry points for philanthropy
Outdated or absent forest management policies	**Policy** support for upgrading existing forest codes to reflect current preservation needs, creating land tenure policies for forest-adjacent communities, and for increasing agroforestry use among cash crop and smallholder farmers **Research** and develop improved systems and tools, such as remote sensing, for monitoring deforestation
Lack of local engagement in reforestation and afforestation	**Financing** for local NGOs to scale activities on community-led reforestation and afforestation; providing seed funds for governments to begin developing and implementing reforestation strategies **Capacity** building for forestry and police officials on effective forestry law enforcement methods **Convening** local and national government forestry officials for peer-to-peer learning on anti-deforestation enforcement best practices **Advocacy**, including support for litigation where appropriate

9 FAO, 2019.

5. Cross-cutting opportunities

In additional to the above-mentioned sectoral opportunities, philanthropy can invest in cross-cutting opportunities (noted ▲ in Figure 6, page 8) i.e. foundational or institutional efforts that can accelerate climate mitigation efforts across multiple sectors. Three opportunities stand out:

▲ Strengthening data and analytics systems and platforms to accelerate climate action in Africa

The limited availability of climate-related data and gaps in standardized or integrated reporting create roadblocks to effective planning and decisive climate action. There is an opportunity to develop improved data systems to enable public and private actors to improve decision-making and accountability for more effective mitigation by setting clear targets and monitoring reduction efforts and outcomes more closely to ensure goals are met.

Key success outcomes for philanthropy include:

- *Increased emissions and environmental monitoring and reporting to fill research and data gaps; improved institutional effectiveness through data-driven execution, transparency, enforcement, and more effective policy infrastructure*
- *Key partners could include (non-exhaustive): Future Climate for Africa, African Climate Development Initiative, AtlasAI, among others*

▲ Broadening and strengthening civil society organizations and communities for climate action

Current civil-society participation in climate action in Africa is limited to a few climate-focused organizations. There is an opportunity to build the capacity of civil society organizations and to cultivate and elevate a variety of voices into climate leadership, including youth, labor unions, tribal leaders, and industry groups from non-traditional sectors, to mobilize greater awareness, galvanize effective broad-based action, and importantly, to hold government and industry accountable to equitable mitigation outcomes.

Key success outcomes for philanthropy include:

- *Heightened societal awareness through broader networks and reach of climate efforts and effective campaigning*
- *Responsive and inclusive policies developed by increasing engagement with traditionally excluded constituents*
- *Expanded funding from improved connections between civil society organizations (CSOs) and regional and international funding sources*
- *Key partners could include (non-exhaustive): African Climate Reality Project, 350.org, Groundwork, UCLG Africa Climate Task Force, GGGI, Africa NDC Hub, among others*

▲ Accelerating low-carbon development pathways through government, business, and consumers

Across many countries in Africa, governments and businesses lack sufficient capacity or incentives to accelerate transitions to low-carbon practices, particularly in light of growing carbon-intensive infrastructure developments. There are opportunities to drive low-carbon development plans and transitions through policy, financing support, and direct engagement with business leaders, supported by consumer-focused advocacy.

Key success outcomes for philanthropy include:

- *Low-carbon development plans with a clear vision for change and actions to implement*
- *Demonstrated alternative low-carbon growth pathways from supporting businesses*
- *Heightened societal awareness from business platforms driving consumer awareness*
- *Key partners could include (non-exhaustive): African Climate and Development Initiative, UNEP, AfDB, African Circular Economy Network, and national industry associations and departments, among others*

Across Africa there are a number of existing institutions and initiatives working regionally that may be good entry points for engagement. Climate philanthropy can support these efforts in many ways, especially by funding their growth and reach across the continent and by elevating and recognizing the most effective efforts underway. A few of these initiatives are highlighted here. In addition, there are many other initiatives and organizations that are active in Africa, or that could be active, that can serve as grantees and/or partners who may be more aligned to the specific impact goals and interests of individual funders.

URBANIZATION

Africa Regional Network of the World Green Building Council

A regional coalition of African Green Building Councils (GBCs), supporting capacity-building in individual African GBCs and regional collaboration on projects

Covenant of Mayors

A regional chapter of the Global Covenant of Mayors for Climate and Energy, supporting African mayors in climate action through technical support, climate planning and policy support, and leadership peer-to-peer learning

UNEP

A programme of the UN, supporting electric mobility in Africa through programs to advance two- and three-wheelers, and programs to improve policies for the introduction of electric light duty vehicles

Other initiatives to consider include: IFC's Green Buildings Market Transformation Program, the Building Efficiency Accelerator, IEA's Global EV Pilot City Program, and C40 Cities

ELECTRIFICATION

Global LEAP Awards

An awards and innovation program to incentivize the introduction of high-efficiency appliances by promoting affordable best-in-class appliance technologies

Energy Storage Partnership

A World Bank-led initiative aimed at improving the dissemination and technological development of batteries and storage systems for renewable energy, by undertaking R&D efforts, supporting policy creation, and convening stakeholders

Alliance for Rural Electrification

An international association of renewable energy businesses that provides financial match-making to support the development of off-grid renewable energy in rural areas. Works in partnership with the UN's Sustainable Energy for All Initiative

Other initiatives to consider include: Power for All, SE4ALL national agendas, and AfDB's Sustainable Energy Fund for Africa (SEFA)

INDUSTRIALIZATION

African Center for Economic Transformation (ACET)

An African economic policy institute providing research, policy advice, and institutional strengthening to support African countries to develop and transform their economies. ACET's agenda includes a focus on green industrialization in collaboration with the Africa Growth Initiative at the Brookings Institution

UNIDO's Programme for Country Partnership (PCP)

An effort by UNIDO to accelerate green industrialization aligned with the national development agendas of Member States. The PCP provides technical assistance to advise on policy design and implementation, and drives investment to priority industrial sectors. There are ongoing PCP programs in three African countries with another four African countries in development

Other initiatives to consider include: Partnering for Green Growth and the Global Goals 2030 (P4G), the UN's Partnership for Action on Green Economy (PAGE), UNIDO's Transfer of Environmentally Sound Technologies (TEST) program, the network of National Cleaner Production Centers, the Made in Africa Initiative, and the African Development Bank's Industrialization Strategy for Africa

LAND USE CHANGE

The African Forest Landscape Restoration Initiative (AFR100)

A partnership between more than 20 African governments, financial institutions, and technical partners aimed at restoring 100 million hectares of land in Africa by 2030, with the African Union's development unit spearheading the initiative

Program for Climate-Smart Livestock Systems

An initiative headed by the International Livestock Research Institute and the World Bank supporting improvements in emissions measuring to ultimately develop interventions and policies on livestock emissions reduction in Ethiopia, Uganda, and Kenya

Central African Forest Initiative

A collaboration between 6 high-forest cover African countries in the Congo Basin, bilateral donors, and the UN aimed at supporting policy reforms to address the drivers of deforestation and facilitate related cross-country learning

Other initiatives to consider include: African Palm Oil Initiative, Africa Sustainable Livestock 2050 (ASL2050), Program for Climate-Smart Livestock Systems, Africa Dairy Genetic Gains, African Union/ NEPAD's Climate Smart Agriculture Project, Africa Climate-Smart Agriculture Alliance, Congo Basin Development Initiative, and the Great Green Wall Project

IV. Considerations for successful engagement in Africa

Philanthropies should consider six guiding principles for how they engage across opportunities:

1. **Aligning with and promoting existing national priorities** will be more successful than opposing specific agendas or development narratives.
2. **Advancing agendas with positive development outcomes** (including adaptation) in addition to mitigation benefits will be better-received among most stakeholders than focusing on mitigation alone.
3. **Working with partners with a strong local presence** is important for western philanthropies that are newly or lightly engaged in Africa to build credibility.
4. **Collaborating with the private sector** will be critical, given that such collaboration is highlighted as a priority across national climate action plans and the SDGs.
5. **Focusing on supporting implementation** over policy development may be more impactful given some degree of "policy fatigue" across African countries.
6. **Taking a systems approach** is more likely to add value given the large number of bilateral and multilateral donors and Development Finance Institutions (DFIs) active across the continent.

In addition, new investments by philanthropy should work, where possible, to complement existing efforts from government, NGOs, corporates, and/or development finance institutions and donors who are active across many sectors and sub-sectors.

In prioritizing where to engage, philanthropies should consider both emissions growth as well as political and societal dynamics:

Assess priority countries across each sector, based on emissions and political momentum. For each sector opportunity mapping to the four transformations, high-potential country entry points are prioritized based on two main factors:

- **Relevance to emissions growth:** Magnitude of current GHG emissions and, where available for the sector, projected emissions through 2050
- **Engagement on climate action in that sector:** Evidence of government action in developing or implementing policies or programs to drive climate mitigation within that sector

Understand additional political and social dynamics relevant for philanthropy. Priority countries across the transformations are further assessed based on three factors:

Regional/continental influence: Assessment of the degree of a country's influence in the region or across the continent as a climate leader

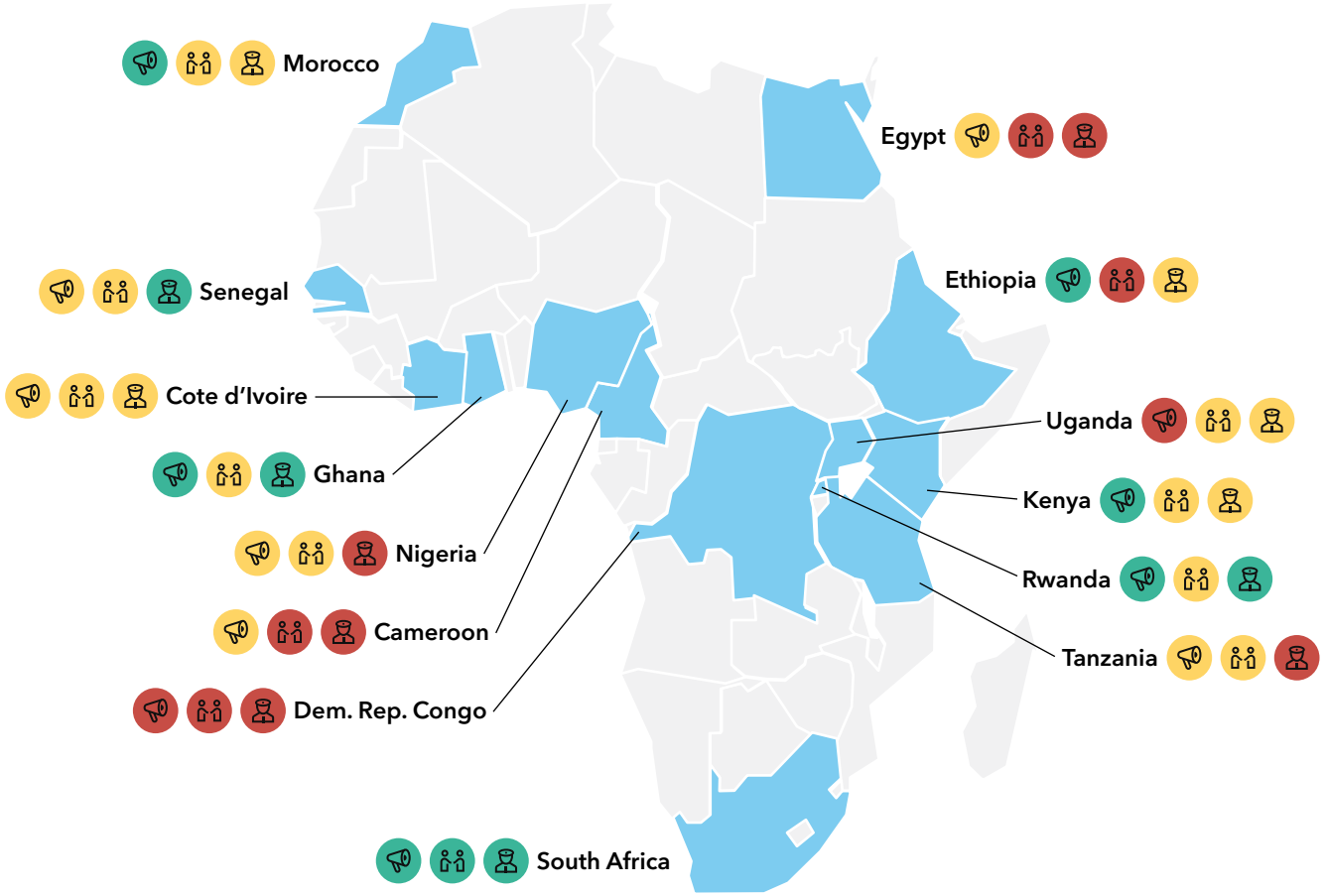
Strength of civil society: Maturity of civil society and its capacity to act as an implementation partner for climate mitigation initiatives

Political stability: Degree of political certainty, peacefulness of transitions of power, and lack of significant safety concerns

These factors highlight 14 African countries ***(shown on the following page)*** that should be prioritized for climate engagement

14 countries are highlighted in the report and assessed based on their political and societal dynamics

Philanthropy can further evaluate where to engage based on alignment with individual priorities and impact goals



Influence: degree of regional or continental influence as climate leader

Civil Society: maturity of civil society as source of implementation partners

Stability: political certainty, peaceful elections and political transitions, limited safety concerns

HIGH MEDIUM LOW

Notes/Sources: Countries with weak civil society are not necessarily places to avoid altogether if they are of critical importance for mitigation, but philanthropy may wish to explore alternative funding mechanisms there to be successful. "Influence" scores based on expert interviews and relative to other prioritized countries; "Civil Society" scores based on USAID Civil Society Organization. Sustainability Index and relative to all countries; "Stability" scores based on World Bank Governance Indicators and expert interviews, and are relative to all countries.

Thank you to the partners, experts, and other reviewers who provided valuable input and feedback into this work.

The full version of the landscape study provides a deeper analysis of the drivers of emissions growth across Africa, the countries expected to contribute the most to emissions going forward, and the key barriers to mitigation for each sector. The full version of the study also provides additional context on each of the 17 opportunity areas summarized in this report, including details on potential partners and grantees working in these areas across Africa.

Please contact Casey.Cronin@climateworks.org or Oren.Ahoobim@dalberg.com for more details on the landscape study.