AFRICAN DEVELOPMENT BANK GROUP

A Just Transition to Address Climate Change in the African Context

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CONSIDERATIONS FOR A JUST TRANSITION IN THE CONTEXT OF AFRICA

Ensuring that a country's economic transformation leaves no one behind requires an adequate understanding of how it shall be carried out. One way to characterize economic change is by identifying three main drivers:

1. **Achieving prosperity for all** – and uplifting citizens from poverty – continues to be a primary driver of economic transformation worldwide. Through economic development, governments, particularly those of developing nations, aim to attain prosperity and reduce poverty in their countries. These governments are tasked with exploring how existing industries can be expanded and how new initiatives can be developed to generate revenue and drive economic growth while ensuring that processes are sustainable and equitable access to this envisioned prosperity is granted to all.

2. **Reducing GHG emissions.** Reducing GHG emissions is imperative to mitigating climate change, linked to excess anthropogenic GHG emissions resulting from rapid industrialization over the past two centuries.[1] Consequently, how industries utilize energy must change, requiring an overall shift in the current economic models worldwide and how households and large GHG emitters access energy. At the same time, the adverse impacts of climate change are, unfortunately, already affecting communities. Countries must aim to minimise these impacts and adapt.

3. **Building climate resilience.** Countries will also need to make their infrastructures and systems more resilient, reducing the negative impacts of climate change on people's lives and livelihoods.

These three objectives will only be equally relevant for some countries as they transform - individual countries will have varying starting points due to their unique circumstances. **However, similar pathways may be deduced for countries with similar levels of development: developed countries, developing countries, and least-developed countries.**

Although these transformations aim to achieve positive impacts, they will inevitably disrupt economies, livelihoods, and lives, potentially introducing adverse effects. For example, a country may seek to reduce GHG emissions by transforming the currently carbon-intensive transport sector. However, doing so may leave workers without jobs at various points of the existing value chain. While the country pushes for one transformation path (reducing GHG emissions), it may regress to another (achieving prosperity for all).

A just transition is needed to ensure that no one is left behind. A just transition considers and addresses potential disruptions to the socioeconomic landscape. It would minimise or avert potential risks, pushing for all communities to reap development benefits, particularly historically disadvantaged and underrepresented groups, such as women, youth, older people, informal workers, people with disabilities, migrants, and minorities.

Just as transformation drivers are expected to be different between developed and developing countries, the role of just transition will also differ:

[1]Hans Baer. 2012. Global capitalism and climate change. In Handbook on International Political Economy.

- **Just transition in developed countries can generally be considered "subtractive"** as it aims to diminish or minimise the negative impacts on the prosperity of their transformation actions.

- **In developing countries and least-developed countries (LDCs), just transition can generally be considered "additive"**, as it aims to amplify or maximize development and prosperity aimed for by their transformation actions.

Thus, a just transition for developing countries and LDCs shall ensure that the benefits gained from an economic transformation are accessible to everyone. By applying the principle of a just transition, transformations carried out by countries can achieve their overall transformation goals.

Like the rest of the world, Africa is transforming and must be carried out justly. With more than half of countries in Africa being LDCs, and the rest being developing,[2] **achieving prosperity will be the most relevant and important transformation driver for most countries.** Moreover, the adverse impacts of climate change worsen year after year—**building climate resilience will be just as essential for many countries. For some fossil fuel-dependent countries, reducing GHG emissions will also be critical.** Regardless of the transformation driver, countries in the region must ensure that their pathways to achieve their goals adhere to the concept of just transition.

The operationalization of just transition in Africa must reflect the challenges and opportunities in the region. Expectations of what just transition can achieve must be clearly outlined given the African context, and at greater granularity, at the specific country level. As with just transition conceptualization, just transition operationalization should distinguish between developed and developing countries.

UNPACKING JUST TRANSITION

Just transition is context-dependent, and there is no singular widely accepted definition. **However, there are several ways to explore and examine the concept and illustration of just transition – ultimately to provide more insight and clarity for just transition operationalization in Africa.**

Theories on equity provide a fundamental understanding of how justice may be practically considered in just transition in three ways—distributive, procedural, and corrective/restorative, which can be addressed independently or together.[3] These contribute to ensuring fairness in the process, outcome, and consequences of given situations.

Specific actions to ensure a just transition have been identified in this report, including (1) understanding the national context; (2) just transition institutionalization; (3) coherent policy framework; (4) gender equality; (5) decent jobs; (6) strong social consensus; (7) meaningful stakeholder participation; (8) sectoral analysis and data for decision-making; and (9) cooperation.

To synthesize the theory behind just transition, including its evolution and potential achievements, key institutions that have been instrumental in advancing just transition, have designed frameworks and guidelines. These frameworks serve as a conduit to go from theory to action and can guide the operationalization of just transition in Africa. These institutions include the World Bank, the Climate Investment Funds (CIF), International Labour Organisation (ILO), and the European Bank for Reconstruction and Development (EBRD).

[2] Thirty-three of the 54 countries in Africa are considered least developed countries by the UN.
[3] Just Transition Initiative. 2021. A Framework for Just Transitions.

AFRICAN REGIONAL CONTEXT

Present challenges must be considered and addressed for Africa to set and attain transformation goals.

SOCIOECONOMIC CONTEXT

Existing high poverty rates and low development in the region underscore the need for African countries to increase development and achieve prosperity.

- **LDCs face a greater risk of deeper poverty** and risk of remaining in underdevelopment, with more than 75% of LDCs' population living in poverty.[4] Poverty in Africa is concentrated within the Sub-Saharan region, with Central Africa having the highest extreme poverty rate of 54.8%.[5]

- **COVID-19 has exacerbated poverty in the region.** Prior to the COVID-19 crisis, over 445 million people in Africa lived below the poverty line, totalling 34% of the region's population. When COVID-19 broke out in 2020, ~30 million more Africans fell into extreme poverty.[6]

- **Many African countries exhibit a low Human Development Index (HDI) and high levels of inequality.** In 2019, 30 of the 33 countries in the low human development group were in Africa. When adjusted for inequality, the HDIs of a great majority of African countries are even lower, representing percentage losses more significant than the world average.[7]

CLIMATE CONTEXT

Africa's climate context reveals the need for the region to build climate resilience in its transformation. Despite its minimal contribution to global greenhouse gas emissions, Africa is heavily impacted by the detrimental effects of climate change.

- **In 2021, Africans comprised 17.5% of the world's population[8] but contributed only 2.7% of cumulative global CO2 emissions since 1751.[9]**

- **Significant changes in regional temperature and rainfall patterns have increased the frequency and intensity of extreme weather events across the continent.** According to the World Bank's Africa's Pulse report in 2021, "relative to 1970-79, the frequency of droughts in sub-Saharan Africa nearly tripled by 2010-19. It has more than quadrupled for storms, and it has increased more than tenfold in the case of floods."[10]

Such extreme weather events have led to forced migration all over the continent.[11]

- **Unfortunately, Africa has limited adaptive capacities related to climate change response,** with countries needing long-term technical skills and strategies to face environmental changes.[12]

With a high risk to people's lives and livelihoods, as well as countries' overall development goals, building climate resilience will be a crucial part of the region's transformation.

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[4] UNCTAD. n.d. UN recognition of the least developed countries.
[5] E.R. Aikins and J. Du Toit Mclachlan. 2022. Africa is losing the battle against extreme poverty. Institute for Security Studies. 13 July.
[6] E.R. Aikins and J. Du Toit Mclachlan. 2022. Africa is losing the battle against extreme poverty. Institute for Security Studies. 13 July.
[7] UNDP. n.d. Human Development Report 2020.
[8] Statista. 2022. Distribution of the global population by continent 2021.
[9] Patrick Dupoux, Lucas Chaumontet, Pia Carona, Stefano Niavas, Tolu Oyekan, Younès Zrikem, Kesh Mudaly, and Fiona Tokple. 2021. Building a Climate-Resilient, Low-Carbon, Job-Rich Africa.
[10] World Bank. 2021. Africa's Pulse report: an analysis of issues shaping Africa's economic future.
[11] C.H. Trisos et al. 2022. Africa. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
[12] Bündnis Entwicklung Hilft and IFHV. 2021. WorldRiskReport 2021.

ECONOMIC CONTEXT

Africa's economic context also reveals challenges and opportunities in its transformation and provides insights about how it can be achieved.

- **GDP growth in Africa has fluctuated since the beginning of the 21st century.** Despite accelerated economic growth between 2000 and 2010,[13] growth has been inconsistent since. A significant economic shock was felt as a result of the COVID-19 pandemic when Africa faced its worst recession in more than 50 years. In 2020, Africa's overall GDP declined by 2.1%.[14] Despite a strong recovery in 2021,[15] the economic growth achieved was expected to decrease in 2022. The lasting pandemic effects, mainly due to low vaccination rates, as well as the Russia-Ukraine armed conflict, are linked with an expected GDP reduction of 4.1%.[16]

- **The African continent is home to eight of the world's 15 least economically diversified countries.** Economic diversification is a measure of resilience to unexpected national, regional, and global phenomena, and has been identified as a critical element for economic growth and poverty reduction, particularly in low-income and natural resource-dependent countries.[17] Slow productivity growth and limited progress in technology and industrialization have stagnated Africa's share of global merchandise exports between 1998 (1.9%) - 2018 (2.5%).[18]

Poor governance has significantly impacted the economic development of most African nations and poses a challenge to its transformation. According to the 2020 Ibrahim Index of African Governance (IIAG), the region's overall decline in the categories of "Participation, Rights & Inclusion" and "Security & Rule of Law" has been attributed to deteriorating security and an increasingly hostile environment for ensuring human rights and civic participation.[19]

Civil society participation is still lacking. Of the four categories assessed by the IIAG, "Participation, Rights & Inclusion" is the lowest scoring, with an average score of 46.2 / 100 points. Within this, "Participation" is the lowest ranking, showing a decline of -2.2 points between 2010 - 2019.[20] 27 out of 54 African countries have shown a drop, while only 14 nations have shown improvements – meaning half of the African countries are regressing in public participation and in creating a space for participation and dialogue in the political processes.

Although the gap between women and men has been reduced in Africa, gender equity has not been reached. The Gender Development Index (GDI), which represents the ratio of female to male HDI of all African countries, provides a glimpse at gender equity in Africa. Out of the 48 countries that were assessed in Africa, only five have reached a GDI equal to or over 1.[21] In addition, female access to education remains poor. In low-human development nations, African women are expected to receive an average of 8.7 years of formal education. This is compared to very high-human development countries where women are expected to study for an average of 16.6 years. In countries such as South Sudan, Chad, and Niger, women's schooling has dropped to below six years.[22] The proportion of senior positions in the workforce held by women remains low.[23]

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[13] Acha Leke and Dominic Barton. 2016. 3 reasons things are looking up for African economies.
[14] AfDB. 2021. African Economic Outlook 2021.
[15] AfDB. 2022. African Economic Outlook 2022.
[16] AfDB. 2022. African Economic Outlook 2022.
[17] Zainab Usman and David Landry. 2021. Economic Diversification in Africa: How and Why It Matters.
[18] Zainab Usman and David Landry. 2021. Economic Diversification in Africa: How and Why It Matters.
[19] The IIAG assesses governance performance in 54 African countries on a decade basis. It comprises indicators of four key sectors: political, social, economic and environmental, which are measured by a set of significant variables for the African context.
[20] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance. Index Report.
[21] UNDP. 2016. Africa Human Development Report 2016.
[22] UNDP. 2020. Human Development Report 2020.
[23] World Economic Forum. 2021. Global Gender Gap Report 2021.

Labour rights are still at risk. Although African governments have committed to improving and accomplishing laws that ensure labour rights,[24] enforcement of national laws and policies remains weak in some labour areas such as wages, social security, occupational safety and health, forced and child labor, migrant workers, human resource development, maritime activities, fishing laws, and rights of indigenous people. Consequently, African labour markets still harbour discrimination.[25]

A large informal sector in Africa leaves many workers vulnerable, particularly women. In 2018, the International Labour Organisation (ILO) calculated that nearly 86% of the employed population in Africa was part of the informal economy, including agriculture activities (the highest share at a global level). Women have also been observed to participate in the informal economy more than men in all African sub-regions but Northern Africa.[26]

Moreover, corruption remains rampant. 65% of African governments were found to have poor management of corruption in their nations.[27]

JUST TRANSITION IMPLICATIONS IN DIFFERENT AFRICAN CONTEXTS AND ECONOMIC SECTORS

Africa must continue to forge a path for economic development. Historically, development worldwide has relied on fossil fuel exploitation. Therefore, a country's access to fossil fuels will inevitably shape and influence its just transition trajectory. The just transition discussion in the African continent can be framed through two main groupings: a) fossil-fuel-dependent countries and (b) non-fossil fuel-dependent countries.

FUEL-DEPENDENT COUNTRIES

A country's dependence on fossil fuels can be framed in the following ways: (1) financial dependency; (2) energy dependency; or (3) employment dependency. The presence of any combination of these can make a country's socio-economic landscape vulnerable to transitions away from fossil fuels.

Financial dependency. Many African countries financially dependent on fossil fuels are located in Northern Africa,[28] as well as countries from other areas such as Nigeria, Angola, Equatorial Guinea, and Gabon.[29] **Oil is a major export[30] and a major source of income for many countries,[31] particularly those in West and North Africa.[32]** Although less significant in terms of their overall economic relevance in Africa, **natural gas[33] and coal are exported by several countries in the region.[34]**

There are vast differences, nuances, and particularities between African fossil fuel-dependent countries. While some fossil fuel-dependent African countries, such as those with more developed economies such as South Africa and Nigeria, can draw on just transition lessons from similarly positioned countries in Europe or the Americas, they must forge their paths towards just transition. There are several considerations for countries that have a financial dependency on fossil fuels:

- **Recognizing how much they have diversified their economies helps to understand their trajectory toward low-carbon climate-resilient development.** Most African oil and gas-producing countries rely on oil and gas exports for more than 50% of their total export revenues.[35]

[24] ILO. n.d. Labour standards in Africa.
[25] ILO. n.d. Labour standards in Africa.
[26] ILO. 2018. Women and men in the informal economy: a statistical picture.
[27] Worldwide Governance Indicators. n.d. Control of corruption.
[28] D. McCauley et al. 2022. Assessing national performance on delivering a just energy transition in Africa.
[29] Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.
[30] OEC. 2022. Crude Petroleum: Country Comparison.
[31] J. Campbell. 2020. As Oil Collapses, so Does a Vital Source of African Revenue. Council on Foreign Relations. 22 April.
[32] Statista. 2022. Leading crude oil and oil products exporters worldwide in 2021, by region or country.
[33] Climate Action Tracker. 2022. Natural Gas in Africa.
[34] Statista. 2022. Coal production in Africa as of 2019, by country.
[35] Acha Leke, Peter Gaius-Obaseki, and Oliver Onyekweli. 2022. The future of African oil and gas: Positioning for the energy transition.

- **When global demand for fossil fuels eventually declines due to the worldwide energy transition amid today's climate crisis, countries financially dependent on fossil fuels will be greatly affected.** Revenues will be impacted as demand decreases in the long term. In Africa, 60% of countries rely on commodity exports,[36] and oil is a significant portion of these exports. Volatilities in the global market will likely substantially impact countries' socio-economic landscapes.[37]

- **In the short-term, however, the European ban on Russian fuel imports due to the Russian invasion of Ukraine has presented an opportunity for African fossil fuel exporters.** Many African countries expect to increase their revenues by exporting their fossil fuel supply—be it oil,[38] natural gas,[39] or coal[40] —with some having already signed deals with European countries.

- **However, countries that develop, enhance or upgrade fossil fuel infrastructure risk having stranded assets in the future.[41]** The urgency of climate action will likely push for clean energy development before the projected end of an asset's lifespan. With falling renewable energy prices,[42] countries may have little reason to pursue fossil fuel-powered energy. Existing fossil fuel assets, therefore, should be addressed. Planning the policy and financing of these stranded assets must be considered to ensure an effective transition.

Energy dependency. Where economic activity and revenues within a country are not significantly linked to fossil fuel industries, a country can still depend on fossil fuels through energy dependency. This can be defined as the production and total consumption of coal, gas, oil, oil shale/sands, electricity, heat output, imports, and exports.[43]

Many countries financially dependent on fossil fuels are also energy dependent on them.

- **This can then present conflicts in priorities within a country.** Due to the current energy crisis in Europe, major fossil fuel exporters in Africa are now considering redirecting fossil fuels currently consumed domestically towards exports, thus potentially risking energy security. Hundreds of millions of other Africans already lack electricity, and such financial opportunities may introduce major energy security issues in the region.[44]

- **Stranded assets are also an issue in countries with high fossil fuel production and consumption and/or high electricity and heat output powered by fossil fuel.** As with countries with high financial dependency on fossil fuels, these countries should reconsider further constructing fossil fuel assets and find ways to manage existing assets towards early decarbonisation properly. Similarly, renewable energy generation will be a crucial step toward ensuring energy security for the populations in these countries.

Employment dependency. A country with a significant portion of its population employed in fossil fuel industries can also be considered vulnerable to the impacts of a transition away from fossil fuels.

- Vulnerable industries include fossil fuel extraction and electricity generation powered by fossil fuels. Other industries along the fossil fuel value chain, such as transport, may also be considered vulnerable. If these industries are well-developed in a country, they are expected to employ a significant number of people. In addition, workers in surrounding communities—including the informal sector—whose employment depends

[36] N. Martin. 2022. UN: Africa still too reliant on commodities exports. DW. 14 July.
[37] A. Gerval and J. Hansen. 2022. Sub-Saharan Africa's Reliance on Oil Exports Leads to Decline in Agricultural Imports During Pandemic. USDA. 26 September.
[38] F. D'Emilio and T. Adamson. 2022. European leaders ink energy deals in bid to sidestep Russia. AP News. 18 July.
[39] N. Browning. 2022. Africa must act quickly on its gas reserves, IEA report. World Economic Forum. 23 June.
[40] H. Reid and N. Banya (2022) Europe imports more South African coal as Russian ban looms. Reuters. 15 June.
[41] Stranded assets are investments whose value falls (or 'sunk' assets whose profitability is lower than expected). These are assets that have been prematurely retired, and may be subject to costly retrofitting.
[42] UNFCCC. 2022. Renewable Power Remains Cost-Competitive amid Fossil Fuel Crisis. 14 July.
[43] Darren McCauley, Kerry Andrea Pettigrew, Iain Todd, Tedd Moya Mose, and Tracy Humby. 2022. Assessing national performance on delivering a just energy transition in Africa: A Deeper analysis of the African Union member states 2010-2020 through global data.
[44] K. Larson. 2022. Europe turns to Africa in bid to replace Russian natural gas. AP News. 12 October.

on the economic activity produced by the carbon-intensive operation should be considered. Thus, the phase-out of carbon-intensive fossil fuels can impact livelihoods.

- It is worth noting that the high dependence of a country on employment in fossil fuel industries can have broader impacts on the country's finances. Suppose workers in these carbon-intensive sectors lose their source of income. In that case, they participate less in the economy through fewer taxes being paid and reduced disposable income to cycle back into the economy. Thus, the transformation of these carbon-intensive sectors will have a more significant impact on the whole economy.

A just transition in fossil-fuel-dependent countries in Africa should consider how to minimise the negative impact on countries and populations when actions to phase out vulnerable sectors are carried out. It will be essential to identify which actions a government is planning as part of phasing out its carbon-intensive industries and determine the actions' negative impacts on the socio-economic landscape. Proper planning will need to be done to address and minimise these impacts. Table A summarises such activities and presents the general impact the actions may have on the socio-economic landscape.

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There are vast differences, nuances, and particularities between African fossil fuel-dependent countries. While some fossil fuel-dependent African countries, such as those with more developed economies like South Africa and Nigeria, can draw on just transition lessons from similarly positioned countries in Europe or the Americas, they must forge their paths towards just transition. There are several considerations for countries that have a financial dependency on fossil fuels:

- Recognizing how much they have diversified their economies helps to understand their trajectory toward low-carbon climate-resilient development. Most African oil and gas-producing countries rely on oil and gas exports for more than 50% of their total export revenues.

- When global demand for fossil fuels eventually declines due to the worldwide energy transition amid today's climate crisis, countries financially dependent on fossil fuels will be greatly affected. Revenues will be impacted as demand decreases in the long term. In Africa, 60% of countries rely on commodity exports, and oil is a significant portion of these exports. Volatilities in the global market will likely substantially impact countries' socioeconomic landscapes.

- In the short term, however, the European ban on Russian fuel imports due to the Russian invasion of Ukraine has presented an opportunity for African fossil fuel exporters. Many African countries expect to increase their revenues by exporting their fossil fuel supply—be it oil, natural gas, or coal —with some having already signed deals with European countries.

- However, countries that develop, enhance or upgrade fossil fuel infrastructure risk having stranded assets in the future. The urgency of climate action will likely push for clean energy development before the projected end of an asset's lifespan. Due to falling renewable energy prices, countries may have little reason to pursue fossil fuel-powered energy. Existing fossil fuel assets, therefore, should be addressed. Planning the policy and financing of these stranded assets must be considered to ensure an effective transition.

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- This can then present conflicts in priorities within a country. Due to the current energy crisis in Europe, major fossil fuel exporters in Africa are now considering redirecting fossil fuels currently consumed domestically towards exports, thus potentially risking energy security. Hundreds of millions of other Africans already lack electricity, and such financial opportunities may introduce major energy security issues in the region.

- Stranded assets are also an issue in countries with high fossil fuel production and consumption and/or high electricity and heat output powered by fossil fuel. As with countries with high financial dependency on fossil fuels, these countries should reconsider further constructing fossil fuel assets and find ways to properly manage existing assets towards early decarbonisation. Similarly, renewable energy generation will be a crucial step toward ensuring energy security for the populations in these countries.

- Employment dependency. A country with a significant portion of its population employed in fossil fuel industries can also be considered vulnerable to the impacts of a transition away from fossil fuels.

- Vulnerable industries include fossil fuel extraction and electricity generation powered by fossil fuels. Other industries along the fossil fuel value chain, such as transport, may also be considered vulnerable. If these industries are well-developed in a country, they are expected to employ a significant number of people. In addition, workers in surrounding communities—including the informal sector—whose employment depends on the economic activity produced by the carbon-intensive operation should be considered. Thus, the phase-out of carbon-intensive fossil fuels can impact livelihoods.

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TABLE A. Potential socio-economic impacts of NDC actions and possible responses to support a just transition.

NDC ACTIONS	JUST TRANSITION IMPACT	JUST TRANSITION RESPONSE
• Early retirement of fossil fuel-fired power plants. • Renewable energy deployment: ~ Solar ~ Biomass plants ~ Mini-hydro ~ Hydroelectric stations ~ Large- and small-scale solar plants (PV) ~ Wind farms • Energy efficiency in industrial and residential sectors. • Shift transport from car to bus. • Improve the electricity grid. • Composting of municipal solid waste. • Divert waste from landfill.	• Loss of jobs in the early retirement of fossil fuel-fired power plants. • Loss of jobs indirectly related to the fossil fuel industry, including jobs in the informal sector. • Stranded assets. • Energy security if fossil fuels do not provide alternative energy sources. • Increased electricity prices if renewables are unable to meet demand. • Increased social disruption (correlation between job loss and gender-based violence, decreased student school attendance, participation, etc.). • A fossil fuel-fired power plant in a given location may not be easily replaced by a renewable power plant due to the scarcity of renewable energy sources, such as wind or sunlight, potentially stripping a community of a significant source of income. • Greater energy efficiency in some sectors may result in job displacement for redundant workers.	• Promote economic diversification and the development of green sectors to increase the number of decent jobs available for the people. This should consider existing sectors on which the country already relies or new sectors altogether. • Develop training and reskilling programs to enable impacted workers to adapt to clean energy and other green sectors. • Consider phase-down finance and other financing schemes to phase out existing fossil fuel assets responsibly. • Conduct adequate socio-economic impact assessments to understand how these climate actions can impact populations. • Increase investment in social capacity development programs that enhance or support local knowledge. • Increase the robustness of social protection programs to assist displaced workers and ensure that they do not fall into poverty during the transition. • Promote policies that guarantee 24/7 distributed energy.
	• Energy efficiency upgrades may require financial capital that only wealthier entities and homeowners can afford without enough economic incentives. • Lower-income communities may not be able to afford housing in newer, energy-efficient buildings and may continue to incur the high costs of heating from living in residences with low energy efficiency and from using inefficient energy appliances. Such energy poverty may be exacerbated if not enough financial support is provided. • The shift from cars to buses may cause employment needs to shrink in manufacturing, assembly, and maintenance. Fewer parts and less maintenance will also affect the automotive industry's supply chain.	

NON-FOSSIL FUEL-DEPENDENT COUNTRIES

Countries that are considered not dependent on fossil fuels have no significant dependency on fossil fuels for the countries' finances, energy, or employment. Many countries in East and West Africa and island countries have little financial dependence on fossil fuels. Many countries are considered LDCs and have had minimal contributions to global GHG emissions. It will be necessary for these countries to achieve prosperity through economic development, ideally by taking on pathways that are not reliant on fossil fuels.

Non-fossil fuel-dependent countries are divided into two subcategories: those with **significant fossil fuel reserves yet to be exploited** and those with **insignificant reserves.**

Countries with significant fossil fuel reserves. Countries holding important unexploited fossil fuel resources will be affected by losing potential income.[45] This might be the situation in Mozambique, Senegal, and Uganda—so-called "newcomer countries" with little or no current oil and gas extraction in Africa.[46] To achieve a prosperous future, countries in this group are tempted to follow a business-as-usual, fossil fuel-reliant economic model. As for countries financially dependent on fossil fuels, the assets required to initiate or expand fossil fuel exploitation, such as energy plants, will demand upfront investment for skills-building and technology uptake. These assets would be at risk of becoming stranded in the not-so-distant future. Alternatively, mounting evidence shows that renewable energy technologies are viable alternatives as cheap, abundant fuel to power African economies. Nonetheless, a low-carbon development path will still require massive investment in Africa, where capital is not plentiful, and efforts to reduce risk will be necessary.[47]

Leapfrogging, bypassing a fossil-fuel-led economy and investing directly in renewables can present opportunities for African countries. Experts indicate that with the proper coordination, financing, and skills, African nations are likely to thrive and even lead in climate-resilient, low-carbon development. Leapfrog advocates argue that funding for renewable energy can be made available for initial investments to support both the environment and the people. Africa's young population and its trajectory for quick technological uptake, such as mobile financing and banking, make it a perfect candidate for fostering novel technological enterprises.

Countries with insignificant fossil fuel reserves. This subgroup of non-fossil fuel-dependent countries comprises mainly island nation states, such as Seychelles, Mauritius, Cape Verde, and Madagascar. These are economies minimally dependent on fossil fuels but highly dependent on the tourism industry. As a result, these countries often lead adaptation campaigns and highlight the significant impacts of climate change on island communities.

In countries without significant fossil fuel reserves, there is greater economic diversification. There is a greater chance that any combination of the service, fishing, agriculture, and forestry industries plays a significant role in the country's economy. This diversification must be up-scaled by incorporating other sectors, including renewable energy development and transportation. Existing diversification creates a potential for these countries to leapfrog to a robust low-carbon economy in the future.

Achieving a just transition in non-fossil fuel-dependent countries will primarily aim to distribute prosperity to all and leave no one behind. With most countries in this group considered LDCs, driving development to achieve this prosperity will likely be the priority for transformation. Ideally, this shall be accomplished without relying on fossil fuels to power development by leapfrogging to renewable energy.

Non-fossil fuel-dependent countries at low levels of development will need financing and technical assistance from the outside. These countries must provide suitable internal environments to attract investments from developed countries and other organisations.

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[45] Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.
[46] Isabelle Geuskens and Henrieke Butijn. 2022. Locked out of a Just Transition: Fossil fuel financing in Africa.
[47] KfW, GIZ, and IRENA. 2021. The Renewable Energy Transition in Africa: Powering Access, Resilience and Prosperity.

Appropriate environments may include a stable political landscape, supportive policies for foreign investments, and a clear commitment to driving development through sustainable methods, among others. Because these countries still find themselves at low levels of development, they will need financing and technical assistance from the outside. What is critical is that these countries provide suitable environments to attract inward investments from developed countries and other organisations.

TABLE B. Ways to build an enabling environment for attracting foreign investments and for the fair distribution of prosperity in the country

WAYS TO BUILD AN ENABLING ENVIRONMENT TO ATTRACT FOREIGN FINANCIAL AND TECHNICAL ASSISTANCE TO DRIVE DEVELOPMENT	WAYS TO BUILD AN ENABLING ENVIRONMENT FOR THE FAIR DISTRIBUTION OF PROSPERITY
• Establish a stable political landscape by fostering transparency and adopting measures to deter corruption. • Establish a robust and collaborative institutional framework to drive development and ensure the just transition of the country. • Create new business models with highlighted social protection aspects to ensure the transition is just. • Create an attractive investment framework. • Incorporate climate-conscious and just transition considerations in development efforts. • Establish policies that will ease and aid investments. • Develop policies that will demonstrate social protection as a result of investments.	• Establish tripartite working groups to foster dialogue to advance of a just transition. • Engage disadvantaged communities in decision-making processes through adequate consultation. • Ensure the inclusion of capable members of disadvantaged groups in managerial positions to assist in directing benefits toward their communities. • Comprehensive mapping of relevant stakeholders when planning for new developmental endeavours. • Conduct adequate socio-economic impact analysis for new developments to identify risks to relevant stakeholders. • Foster transparency through effective communication. • Create simple yet effective avenues for filing grievances. • Create avenues for monitoring and reporting just transition efforts for improvement in the future.

THE AFRICAN DEVELOPMENT BANK GROUP'S ROLE IN A JUST TRANSITION

Given Africa's unique context, the African Development Bank Group defines just transition as:

"A framework for facilitating equitable access to the benefits and sharing of the costs of sustainable development such that livelihoods of all people, including the most vulnerable, are supported and enhanced as societies transition to low carbon and resilient economies. A Just transition affirms Africa's right to development and industrialization based on the Paris Agreement negotiated language of equity and the principle of common but differentiated responsibilities and respective capabilities in the light of different national circumstances."[48]

This definition aligns with the Bank's Second Climate Change Action Plan (CCAP2), which highlights national policies and delineates how the Bank seeks to advance its "High 5s Agenda". The High 5s refer to top economic areas in the region and to Bank investments and overall support in sectors that contribute to them. The High 5s show the Bank's commitment to supporting human well-being and economic

[48] AfDB. Just Transition Initiative to Address Climate Change in the African Context. (Accessed 24 Jul 2022).

growth in the continent. Assessing the impact, challenges, and opportunities a transition may create in these five areas is imperative. To describe specific just transition potential effects and opportunities with more granularity, prominent economic sectors were linked to the High 5 areas. These include:

1. **Industrialize Africa:** industry, tourism, and mining
2. **Light up and Power Africa:** energy
3. **Feed Africa:** agriculture, forestry, and fisheries
4. **Integrate Africa:** transportation, infrastructure
5. **Improve the quality of life for the people of Africa:** Just Transition.

While some economic sectors could be linked to multiple High 5s, the high-level assessment aims to connect key economic sectors with the Bank's overarching priorities and describe the implications, potential impacts, and opportunities of just transition in these sectors.

This assessment describes the on-the-ground, practical implications of a just transition. It focuses on the impacts of just transition on specific sectors and highlights possible socio-economic ramifications and opportunities. For example, in the energy sector, the transformation will require actions such as:

1. Developing and maintaining distributed energy strategies based on renewable energy resources that reflect the local needs
2. Promoting a low-risk investment environment for renewable energy, ensuring success with adequate tax and fiscal reforms
3. Pursuing participatory policymaking to move away from fossil fuels. These actions will inevitably create social and economic ramifications such as losing fossil fuel-related jobs, risk of stranded assets, subsidies, or other policy reforms. Anticipating the impacts of just transition on a particular sector helps to plan more effectively so that no one is left behind and overburdened.

The impact of just transition on a sector can also enable new opportunities to emerge. In the energy sector example, these can include the potential to develop training and reskilling programs that will allow (directly and indirectly) impacted workers, including informal workers, to benefit and adapt to the new changes due to the transition. A transition can also promote policy energy reform to be more inclusive regarding energy access or in granting support for youth, indigenous or female entrepreneurs in renewable energy-related industries. Another positive outcome is the potential to increase overall investment in social capacity and development and training programs to prepare the workforce or others for a changing sector.

The energy example outlined illustrates the overarching implications and challenges of just transition implementation, so these may be anticipated for more effective planning. This analysis covering various sectors has identified key actions to enhance communities' economic and social opportunities arising from the transition. However, it is noted that circumstances will differ based on sectors and country context.

These insights can assist government officials and other stakeholders in better understanding and planning for a transition. While exploring just transition interventions and implications on economic sectors is critical to operationalizing just transition, it is also necessary to understand the process required to execute just transition. To this end, a theory of change for just transition in Africa is proposed.

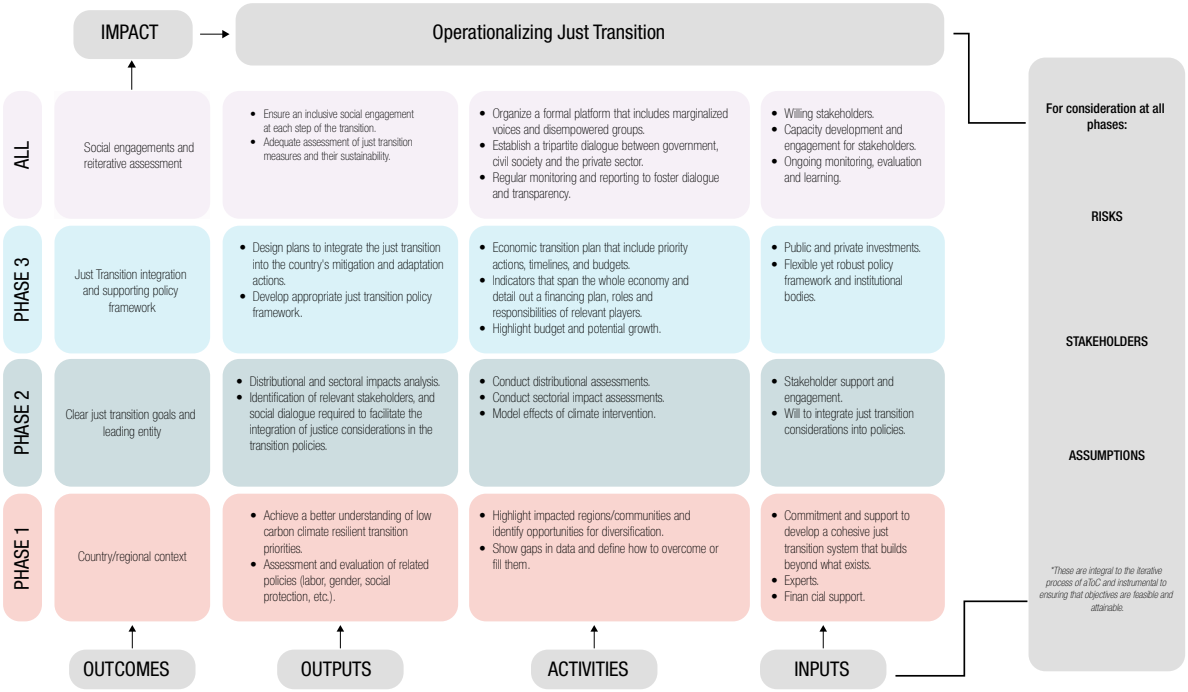
A THEORY OF CHANGE FOR JUST TRANSITION IN AFRICA

A theory of change is proposed to show how interventions are expected to lead to specific change. In this case, the overarching intervention is operationalizing just transition. A just transition leads to complex social and economic challenges and opportunities that are deeply embedded in a particular sociocultural context.[49] A theory of change is a tool to delineate the aspects of this context. In the context of a just transition, the collaborative process of developing a theory of evolution would push relevant stakeholders to review and revise what is needed for a just transition in their given context, including what specific actions would be necessary to ensure these requirements are met.

The theory of change proposed focuses on the four critical phases required to operationalize just transition at the country or sub-country level (see figure below). These are:

- **Phase 1:** Understanding the Context
- **Phase 2:** Defining goals and clarifying leadership and baseline information
- **Phase 3:** Implementing plans for just transition and designing a just transition framework and;
- **All phases:** Engage stakeholders via a meaningful process and ensure space for ongoing reflection and assessment of the operationalization process.

These phases show a logical, sequential order in the operationalization process; however, variations and exemptions are likely since different contexts may require alternative considerations. There are inputs, activities, outputs, and outcomes for each phase. These are specific requirements to ensure a phase is fulfilled.



[49] USAID. 2022. Learning Lab Theory of Change.

1. INTRODUCTION

All around the world, countries are undergoing transformations that are being driven by a variety of reasons. One of the primary drivers, especially for developing countries, is the need to achieve prosperity and uplift populations from poverty through economic development. Expanding local industries to drive economic growth will be critical in many nations.

At the same time, today's climate crisis has led to significant reconsiderations of the way economies and societies operate. To combat climate change, mitigating greenhouse gas (GHG) emissions will require carbon-intensive industries to transform and adapt to cleaner, low-carbon energy sources. Similarly, adaptation will require countries to redesign their infrastructures and systems to become more climate-resilient and to minimise the negative impacts of climate change on people's lives and livelihoods.

Thus, achieving prosperity for all, reducing GHG emissions, and building climate resilience will be crucial in transformations worldwide, with countries aiming to accomplish all three. However, because different countries will have other starting points in achieving all three, the overall transformation pathway will be specific to a given country. At the same time, typical ways can be deduced for countries at similar levels of development. For example, priorities for transformation pathways among developed countries can be expected to be equal, as well as among those considered developing countries and those considered least-developed countries.

Regardless of a country's starting point, transformation pathways will inevitably disrupt economies, livelihoods, and lives. Though they aim to deliver positive outcomes for society, negative impacts with undesirable outcomes are possible along the way. For example, a climate action aimed to reduce GHG emissions by transforming a carbon-intensive sector may lead to the phase-out of carbon-intensive economic activities that would eliminate jobs. As livelihoods are lost, prosperity for all becomes more difficult to achieve.

Thus, a just transition—a transition that considers and addresses potential disruptions to the socioeconomic landscape—will be necessary to ensure that no one is left behind. This would ensure that potential risks are averted and that all communities—especially historically disadvantaged and underrepresented groups, such as women, youth, older people, informal workers, people with disabilities, and migrants—reap development benefits.

Africa, a vast region comprising 54 countries and about 18% of the world's population,[50] is also embarking on its transformation pathway. Primarily, African countries, many of which are considered least-developed countries (LDCs), are aiming to increase development and uplift their populations towards prosperity. With the continent's extreme poverty rate of 35.5% (6.8 times that of the rest of the world), even without factoring in the continent's climate obligations, it is clear that a massive transformation is needed in the region, mainly to achieve prosperity for all. Of course, climate actions should still be considered both for currently fossil fuel-dependent countries that need to mitigate their GHG emissions and LDCs looking to increase development through sustainable means. Moreover, considering the vulnerability of African countries to climate change-induced weather disasters, adaptation will also be key in the region's transformation.

[50] United Nations, Department of Economic and Social Affairs, Population Division. 2022. World Population Prospects 2022, Online Edition.

The transformation of Africa will also need to incorporate the concept of a just transition to ensure that all communities are granted equitable access to the prosperity promised by development. The region's specific challenges and opportunities must be considered to understand how this can be best achieved, examining aspects such as poverty, gender equality, governance, and vulnerability to climate disasters.

This report intends to explain how a just transition can be accomplished in Africa. It provides the necessary regional environment for readers to recognise these specific challenges and opportunities. It also highlights what the African Development Bank (AfDB) is doing to push for development in Africa and just for transition. It is worth noting that, at this stage, because defining the just transition pathway for every country in the region will be tough, understanding common threads in sub-regions[51] can help narrow down specific just transition pathways for countries in the future. The technical report is organised accordingly:

Section 2 of this technical report focuses on "Considerations for a Just Transition in the Context of Africa." It begins by detailing the transformations expected worldwide, given the three major drivers identified: achieving prosperity, reducing GHG emissions, and building climate resilience. This considers typical pathways for countries at different stages of development, i.e., developed, developing, and least-developed countries. It then considers how a just transition will be needed to ensure that countries can deliver on all three transformation drivers. Finally, it briefly examines how a just transition applies to the African context, considering the types of countries in the region and the expected transformation pathways. This is further examined in the rest of the report.

Section 3, "Unpacking Just Transition," delves into the concept of a just transition. It explores foundations that guide the successful realisation of a just transition in any jurisdiction, such as the types of justices that should be considered. It also summarises different frameworks and guidelines set forth by international institutions and organisations, such as multilateral development banks (MDBs), Climate Investment Funds (CIF), and the World Bank.

Section 4 "African Regional Context" provides relevant information about the region. It is split into four different subsections: climate, economic, political, and social contexts. Through this section, the report aims to provide a picture of Africa regarding the various aspects relevant to realising a just transition in the region. With the region's specific context in mind, common threads among countries can be identified to determine opportunities and challenges in the just transition of Africa.

In Section 5 "Just Transition Implications in Different Contexts and Sectors," the just transition of the region is further explored. It recognises two distinct groupings of African countries: (1) fossil fuels-dependent countries; (2) non-fossil fuel-dependent countries. Then, the section presents the African Development Bank's just transition approach, particularly highlighting the High 5s, a set of development priorities for the Bank that are deemed essential in transforming the lives of the African people. Relevant sectors are explored in relation to each of the High 5s, identifying sectoral actions, potential socio-economic ramifications, and opportunities to mitigate the socio-economic impacts of these actions. It then explores the theory of change as a proposed method for how one or several interventions are expected to introduce a just transition for Africa.

Finally, Section 6 "Conclusion" presents the various takeaways from this report. It will consider the theories presented in the report and how they apply to the African context.

Annexes can be found in Section 7 "Annex."

[51] Western Africa, Northern Africa, Southern Africa, Central Africa, and Eastern Africa

2. CONSIDERATIONS FOR A JUST TRANSITION IN THE CONTEXT OF AFRICA

While just transition will be defined and operationalized differently according to the specific in particular contexts in which it will be implemented, there are some contrasts between developed and developing nations there are important to underscore. Similarly, there are commonalities between developing nations that can serve as lessons for similarly situated countries as they create a path toward just transition. This section first discusses the differences regarding expectations, priorities and the potential of just transition between the developed and developing world. After that, this section addresses some general challenges and opportunities Africa should consider as African countries plan for a just transition. They are included in this section in current global events, mainly the impacts and lessons of COVID-19 and the impact Ukraine-Russia war on Africa are discussed.

TRANSFORMATIONS UNDERWAY

Countries worldwide are undergoing transformation, spearheaded by the need to achieve economic prosperity and respond to climate change.

Developing nations in every region are driven to transform by their desire to achieve prosperity and uplift their populations from poverty, primarily by advancing economic development. Many are exploring how local industries can be expanded and generate revenue to drive economic growth. But just as important is ensuring that this is done sustainably and that equitable access to this envisioned prosperity is granted to everyone. To guide this process, many countries have put forth long-term development plans and strategies that shall act as roadmaps towards reaching sustainable development, achieving prosperity, and ensuring equitable distribution of the country's wealth. In this report, references to "achieving prosperity" as a transformation driver imply granting equitable access for all.

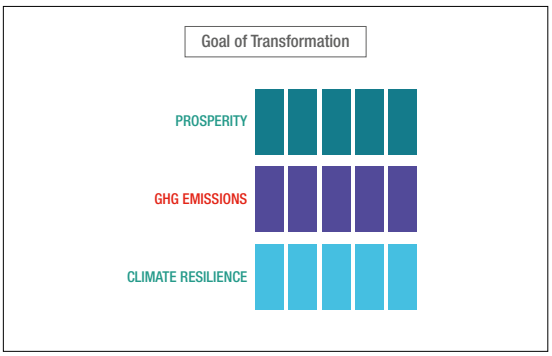
Also driving economic transformations around the world is climate change, the adverse impacts of which reach practically every corner of the planet. Developed and developing nations alike have felt and will continue to feel the effects of extreme weather conditions ravaging communities and livelihoods everywhere. Impacts include a loss and degradation of ecosystems, including tropical coral reefs; reduced water and food security; increased damage to infrastructure; additional mortality and morbidity; human migration and displacement; damaged livelihoods; increased mental health issues; and increased inequality.[52] The global community recognises that climate change-induced transformations must focus on two goals: reducing greenhouse gas (GHG) emissions and ensuring climate sustainability and resiliency.

Reducing GHG emissions will be vital to mitigating climate change, as it has been linked to excess anthropogenic GHG emissions from rapid industrialization during the past two centuries.[53] Because the burning of fossil fuels for energy—a significant source of GHG emissions—has been embedded in many activities that drive countries' economies,[54] the way industries access energy must change, involving an overall shift in current economic models worldwide.

At the same time, countries must realize that the adverse impacts of climate change are not going away soon; all that can be done for now is mitigate these impacts and adapt. Thus, in addition to changing how industries operate and access energy, countries must make their infrastructures and systems more resilient, minimizing the negative impacts of climate change on people's lives and livelihoods.

Achieving prosperity for all, reducing GHG emissions, and building climate resilience will be crucial in transformations worldwide. The goal for every country should be to accomplish all three. In other words, governments should aim for high prosperity, low GHG emissions, and high climate resilience. However, because different countries will all be at various stages of reaching prosperity, mitigating GHG emissions, and building climate resilience, not all three will be equally relevant in a country's transformation. Figure 1 illustrates the goal of transformations worldwide, regardless of their starting points.

Figure 1. Goal of transformation. The goal of countries in their transformation is to maximize prosperity, minimise GHG emissions, and maximize climate resilience.

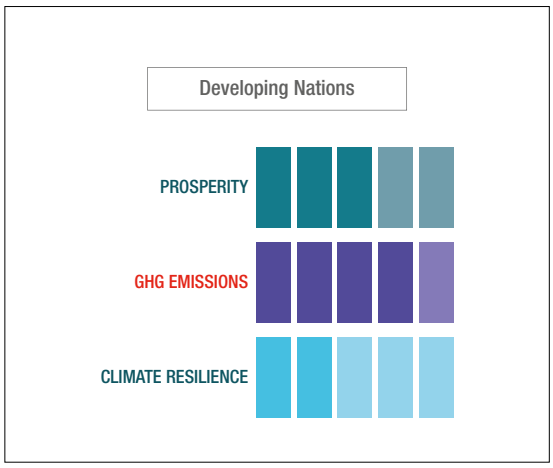


Source: Authors' own elaboration.

[52] Ara Begum, R., R. Lempert, E. Ali, T.A. Benjaminsen, T. Bernauer, W. Cramer, X. Cui, K. Mach, G. Nagy, N.C. Stenseth, R. Sukumar, and P.Wester. 2022. Point of Departure and Key Concepts. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
[53] Hans Baer. 2012. Global capitalism and climate change. In Handbook on International Political Economy.
[54] Matthew Huber. 2008. Energizing historical materialism: Fossil fuels, space and the capitalist mode of production.

Certainly, there are countries where all three must be substantially considered. In South Africa, for example, a medium level of prosperity has been achieved over the years, primarily powered by carbon-intensive activities. Achieving more prosperity by driving further development is key, but the path to it must be powered by energy increasingly derived from renewable sources.[55] Furthermore, disasters exacerbated by climate change—specifically droughts, floods, and wildfires—can impact communities nationwide. Figure 2 illustrates the typical case for a developing nation. Of course, since countries classified as developing nations have a wide range of national circumstances and are at different stages of each of the three drivers of transformation, this illustration does not apply to all developing countries.

Figure 2. Typical state of developing nations. Many developing nations are looking to increase prosperity, decrease GHG emissions, and increase climate resilience. All three will be crucial in these nations' transformations.

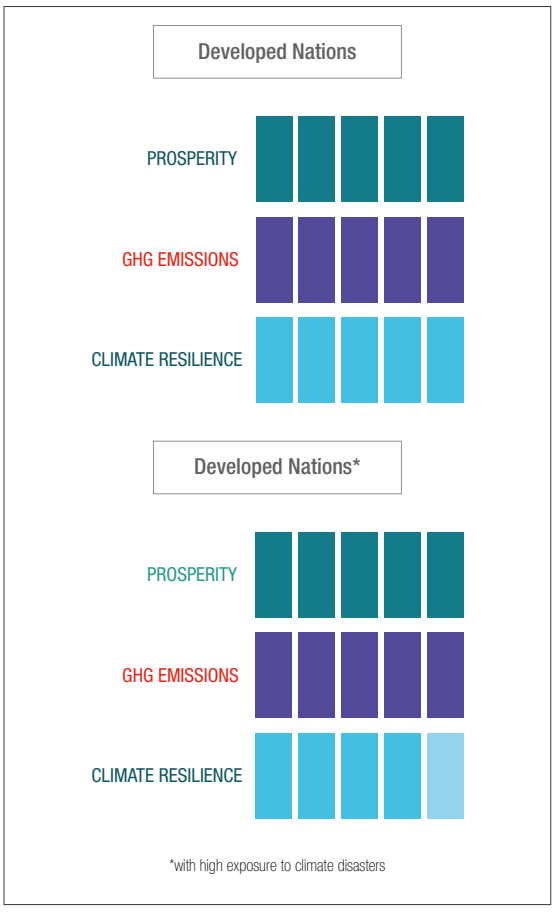


Source: African Union. 2020. First continental report on the implementation of Agenda 2063

But in many developed countries, given that many have already reached a level of development that lends to a good quality of life for a significant portion of society, the focus of transformation will only be on something other than driving development. Instead, transformations will focus primarily on reducing GHG emissions. This is the case for the United States, Japan, and many countries in the European Union, among others, where economic systems have highly relied on the burning of fossil fuels for growth.[56]

For some developed countries, such as Japan and the Netherlands, the added challenge of their high exposure to climate change-induced extreme weather conditions makes it necessary to consider building climate resilience.[57] Although they typically already have sufficient infrastructure and systems to withstand climate disasters and recover quickly, attention must still be paid to furthering resilience and ensuring that fewer and fewer people suffer. Figure 3 illustrates the typical case for a developed country. Again, given the wide range of national circumstances among developed nations, these do not apply to all.

Figure 3. Typical state of developed nations. Developed nations have typically reached a high level of prosperity that was propelled by a high level of GHG emissions. The reduction of GHG emissions will thus be a major driver of transformation. Current climate resilience can be lower in some developed nations given their higher exposure to climate change-induced extreme weather conditions, but they typically have the resources and systems to ensure that people's lives and livelihoods are protected. Still, climate resilience should be addressed.



Source: Authors' own elaboration.

[55] Maxensius Tri Sambodo et al. 2022. Breaking barriers to low-carbon development in Indonesia: deployment of renewable energy.
[56] Hannah Fodale. 2021. RESOLVED: The United States and Japan Are Aligned on Climate Strategy; Sam Van Hoof. 2021. European Commission launches proposals to reach 55% emissions reduction by 2030.
[57] Cecilia Tortajada. 2018. Japan's Climate Change Preparedness an Example for Asian Countries; Naomi O'Leary. 2019. When will the Netherlands disappear?

At the other end of the spectrum are the least developed countries (LDCs), where low economic activity has led to low fossil fuel usage and, thus, low contribution to climate change. Their focus will hardly be on reducing GHG emissions and will primarily be driving development and achieving prosperity. However, that is not to say that governments should not be mindful of their countries' GHG emissions as they strive for development. The path towards achieving prosperity from here on out should avoid being powered by fossil fuels and primarily rely on renewable sources. Such shall be the case for countries like Nepal, Lao People's Democratic Republic, and São Tomé and Príncipe.[58]

Many of these least developed countries are also highly susceptible to climate disasters and typically have insufficient infrastructure and underdeveloped systems to address the challenges associated with these disasters. Thus, building climate resilience and driving development will be essential for these countries. This has been observed in countries such as Niger and Cambodia and in many small island developing states (SIDS), such as Kiribati, Haiti, and the Solomon Islands.[59] Figure 4 illustrates a typical case for a least-developed nation. As before, this should only be seen as applying to some LDCs.

Figure 4. Typical state of least developed countries. Because of the lack of development in LDCs, prosperity and climate resilience remain low, but so does GHG emissions, as these nations did not embark on the fossil fuel-heavy pathways that led to the level of development in more developed countries.

Source: Authors' own elaboration.

Because transformations will have far-reaching effects throughout a country's socioeconomic landscape, governments must be mindful of these positive and negative impacts.

Certainly, carrying out a transformation based on any of the different transformation drivers aims to bring about positive impacts everywhere in a country. Achieving prosperity will deliver a higher quality of life as economies flourish and give way to higher-quality goods and services everyone can enjoy. Reducing GHG emissions will contribute to less air pollution and better health, leading to a more sustainable economy that does not rely on dirty and finite energy resources. Building climate resilience will ensure that people are not affected by the adverse impacts of climate change, preserving both lives and livelihoods all around.

However, despite good intentions, this transformation will inevitably disrupt economies, livelihoods, and lives. Transition paths may have negative impacts that may lead to undesirable outcomes. For example, an objective along the way to reducing GHG emissions may be to transform and electrify the currently carbon-intensive transport sector, but doing so may leave workers at various points of the value chain without jobs, such as those that have worked in manufacturing and maintenance of traditional internal combustion engine (ICE) vehicles. Thus, although the country pushes for one transformation path (reducing GHG emissions), it regresses in another (achieving prosperity for all). Such disruptions to the socioeconomic landscape should be anticipated and justly addressed.

[58] Susannah Fisher. 2013. Low-carbon resilient development in the least developed countries. Emerging issues and areas of research.
[59] W. Leal Filho et al. 2021. Whose voices, whose choices? Pursuing climate resilient trajectories for the poor; Phirum Am et al. 2013. Mainstreaming climate change resilience into development planning in Cambodia; Ramón Pichs-Madruga. 2017. Climate resilience and sustainable development: challenges and options for small island developing states. In Building a Climate Resilient Economy and Society.

THE ROLE OF JUST TRANSITION IN TRANSFORMATIONS

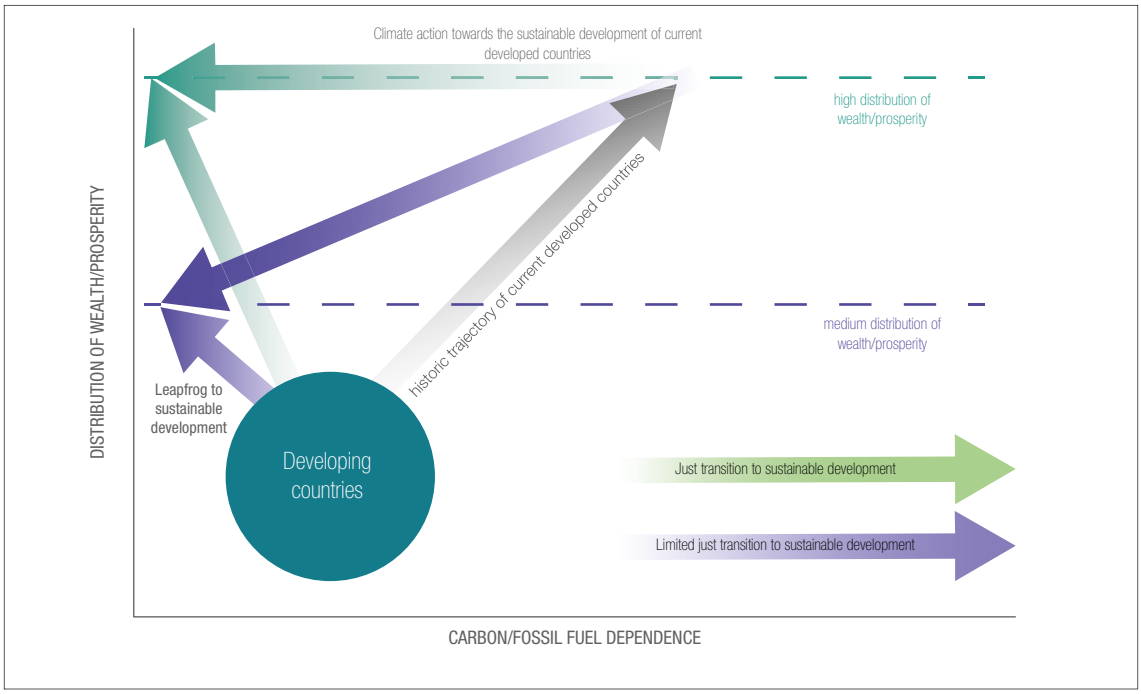
Therefore, a transition that considers and addresses potential disruptions to the socioeconomic landscape will be necessary to ensure that no one is left behind. Such a "just transition" can ensure potential risks are averted and that all communities—especially historically disadvantaged and underrepresented groups, such as women, youth, older people, informal workers, people with disabilities, and migrants—reap development benefits.

The role of a just transition is clear regarding climate change-led transformations, particularly in reducing GHG emissions. With carbon-intensive sectors and whole economies expected to be significantly transformed, livelihoods are at risk as jobs are modified or eliminated. Through a just transition, governments would anticipate which jobs are at risk, coming up with solutions to provide livelihoods for affected workers. Solutions include developing green industries to create decent jobs[60] and designing retraining and reskilling pathways to guide these workers' transitions. Considerations would also be made to ensure that gender equality is promoted and that women are not left behind.

Of course, this is the case for countries where the most relevant transformation driver is reducing GHG emissions and where considerable prosperity has already been achieved, i.e., developed nations. For developing nations and least-developed countries, however, achieving prosperity for all will be an essential transformation driver, along with the climate change-related goals. So, what role does transition play in transforming these countries?

One example of the role of just transition in a developed and developing country is illustrated in Figure 5. It shows that, for developed countries, as discussed, a just transition ensures that prosperity is not compromised as the countries aim to reduce GHG emissions. For developing countries, on the other hand, a just transition ensures that a more significant amount of prosperity is achieved for all as they, too, aim to reduce their GHG emissions.

Figure 5. An example of the role of just transition in the transformation developing countries.

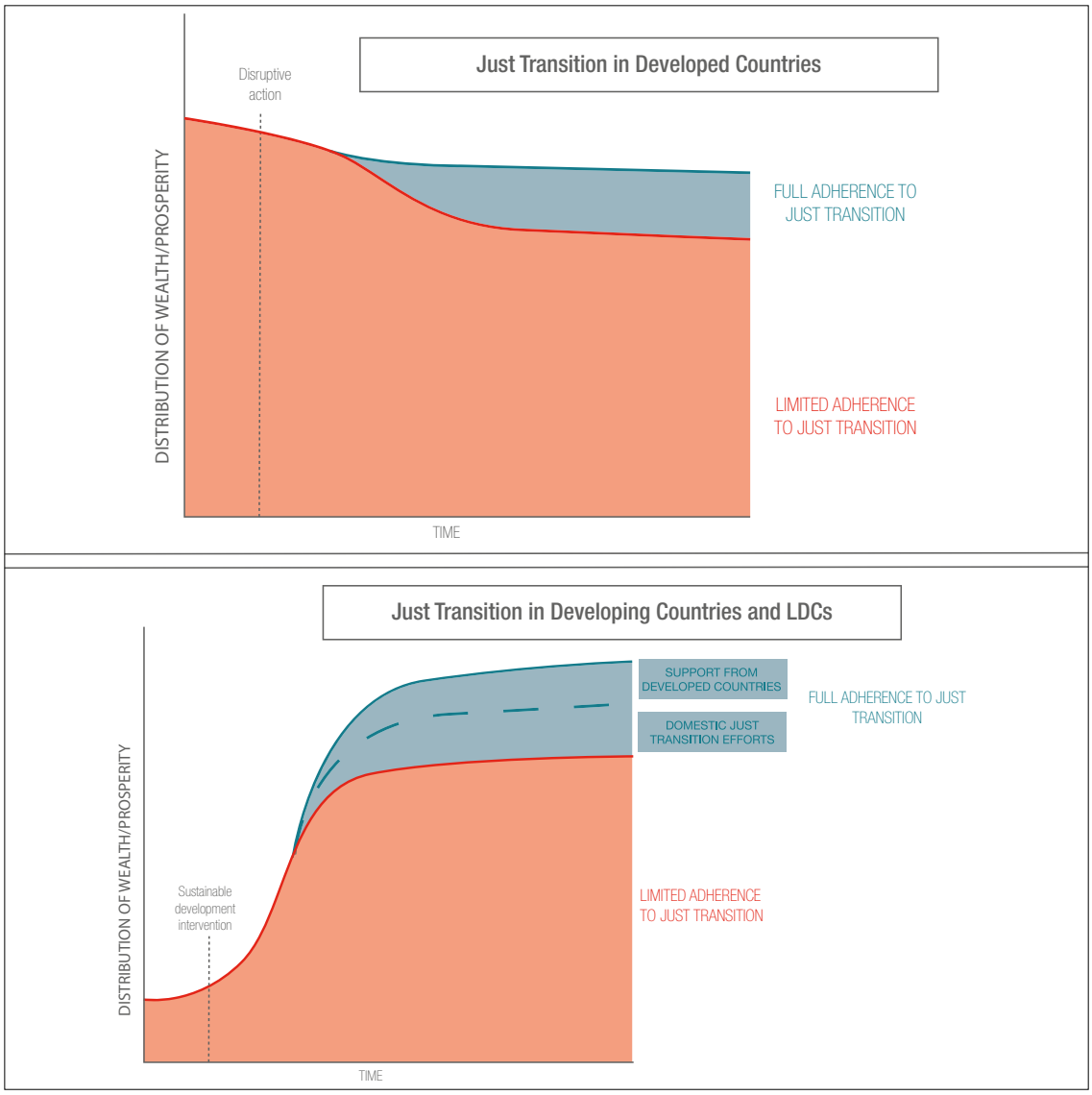


Source: Authors' own elaboration.

[60] The International Labour Organisation (ILO) defines "decent work" as work that "is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men."

In other words, just transition in developed countries can generally be considered "subtractive," as it aims to diminish or minimise the negative impacts on the prosperity of their transformation actions. In contrast, in developing countries and LDCs, it can generally be considered "additive," as it aims to amplify or maximize the development and prosperity aimed for by their transformation actions. It shall ensure that the prosperity reaped from transformation efforts reaches the entire population. To illustrate this idea, Figure 6 compares transitions in developed countries to those envisioned for developing countries and LDCs. It shows how domestic and international efforts for just transition can enhance the intended effects of sustainable regional development.

Figure 6. Difference in the role of just transition in developed countries and in Africa. For developed countries (above), a just transition constitutes a mitigation of the potential negative socio-economic impacts of a disruptive action, e.g., the phase-out of a fossil fuel-intensive sector, which can reduce the distribution of justice in the country. For Africa (below), especially for LDCs, a just transition will involve ensuring that the prosperity and justice envisioned for the region through a variety of developmental initiatives, e.g., providing light and energy to Africans, reaches everyone in the region. However, with such internal efforts, the potential overall distribution of wealth and prosperity can only be raised so much (dashed purple curve). To fully realize the potential of a just transition distributing the benefits of a low-carbon and climate-resilient future to everyone (solid purple curve), support must be provided by developed countries.



Source: Authors' own elaboration.

Without applying the principle of a just transition, transformations carried out by countries risk failing to achieve the goals illustrated in Figure 1.

Figure 7 explores how a lack of just transition measures could transform different types of countries.

Figure 7. Transformation without just transition (developed, developing and least developed countries).

Source: Authors' own elaboration.

One consideration that needs to be made for just transition in developing countries is the two different contexts that can frame what it looks like.

First, it should consider the internal distribution of wealth. This shall be addressed through the transformation of the socio-economic landscape within the country and shall be governed by the actions of local decision-makers and stakeholders. This shall consider how actions outlined in each country's Nationally Determined Contributions (NDCs), Long-Term Strategies, and National Adaptation Plans (NAPs) may negatively impact the internal distribution of wealth and how a just transition can mitigate those impacts.

Second, it should consider a global just transition, where developed countries support developing countries. This aspect considers two concepts: (i) the Paris Agreement's "principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances",[61] and (ii) climate justice or the idea that developed countries must provide reparations for the negative impacts of climate change that they had a large part in causing, and that is heavily affecting developing nations today.

Suppose all relevant players can adhere to these two concepts of just transition. In that case, it can be ensured that sustainable development in developing countries reaches everyone and leaves no one behind.

[61] UNFCCC. 2015. Paris Agreement.

A JUST TRANSITION IN AFRICA: GENERAL CONSIDERATIONS

Like the rest of the world, Africa is undergoing its transformation, evident in its commitment to sustainable development. African countries throughout the region—Liberia, Uganda, Ethiopia, and South Africa—have already derived tangible outcomes from the United Nations' 2030 Agenda by integrating the Sustainable Development Goals (SDGs) into their national visions and plans.[62] The 2030 Agenda envisages "a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination."[63]

Along with the 2030 Agenda, countries in the region have also committed to implementing the African Union's Agenda 2063, a vision and a plan to build a more prosperous Africa in 50 years. The objective of Agenda 2063 is to transform Africa into a "global powerhouse for the future"[64] by adhering to these seven aspirations:

1. A prosperous Africa based on inclusive growth and sustainable development
2. An integrated continent, politically united and based on the ideals of Pan-Africanism and the vision of Africa's Renaissance
3. An Africa of good governance, democracy, respect for human rights, justice, and the rule of law
4. A peaceful and secure Africa
5. An Africa with a strong cultural identity, common heritage, shared values, and ethics
6. An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children
7. Africa as a strong, united, resilient, and influential global player and partner.

Figure 8. Objectives of Africa's Agenda 2063.

Source: African Union. 2020. First continental report on the implementation of Agenda 2063

However, as with other transformations, a just transition will be needed in Africa. To better understand how a just transition would play out in Africa, it is essential to consider the regional context (to be discussed in further detail in Section 4). With more than half of LDCs and the rest being considered developing,[65] achieving prosperity will be an essential transformation driver in the region. And with the adverse impacts of climate change worsening year after year, building climate resilience will be just as critical for many countries. For some fossil fuel-dependent countries, reducing GHG emissions will also be key. In the end, however, it should be recognised that achieving prosperity by driving development will be Africa's most relevant transformation driver and that Africa has an opportunity to choose its path towards development.

Given that the development paths of today's developed countries have relied heavily on fossil fuels, it is tempting for the developing nations of Africa to follow suit and pursue their development goals by also exploiting fossil fuels. Such is the case of Morocco and South Africa, countries that need to reduce their GHG emissions while furthering economic development. Fossil fuel

[62] United Nations. n.d. Transforming our world: the 2030 Agenda for Sustainable Development.
[63] United Nations. 2022. What does the 2030 Agenda say about universal values?
[64] African Union. n.d. Agenda 2063: The Africa We Want.
[65] Thirty-three of the 54 countries in Africa are considered least developed countries by the UN.

production is even more enticing for countries who have yet to exploit the potential of their natural reserves, as some high-income countries have in the past. For example, Mozambique aims to take advantage of its gas resources for export revenues and domestic industrialization, with gas concessions estimated to increase the country's GDP by 40%.[66] Thus, to act on Africa's goal of driving regional development and achieving prosperity, some maintain that fossil fuel may need to remain an essential part of the continent's overall energy mix while it aims for low-carbon alternatives. But regardless of the challenges, countries in the region must ensure that their pathways adhere to just transition principles to achieve their goals.

Just like a conceptualization of just transition must be tailored for the African context, how just transition is operationalized and what it can achieve must also reflect the challenges and opportunities in Africa. The expectations of what just transition can achieve must be clearly outlined at the specific country level, given the African context and with greater granularity.

Delineating this difference between developed and developing countries is important to understand the scope of just transition and its potential and barriers.

The just transition discussion in developed countries often highlights the opportunities for increased technological innovation, the potential for re-skilling, and increased labour opportunities that are likely to emanate from the shift. These opportunities, however, can only be achieved if countries have supportive policy frameworks, sufficient institutional capacity, and financial and social safeguards. Most developed countries have economic and social protection systems to ensure these opportunities are available. Additionally, developed countries have a sizeable formal labour base. A substantial formal workforce allows for greater structure when assessing the intended or unintended impacts and implications of just transition. This assessment is much more challenging when formal labour and workers are found, as in much of the developing world.

It must be noted that developing nations must integrate transition into the policy or develop new policies and regulations that support a just transition. This requires identifying existing gaps in their institutional structures that can stand in the way. Complex governance structures and policies often exacerbate this challenge.

However, discussions on operationalizing just transition in the developing world also require a deeper consideration of the social impacts. Because developing nations may need more strength in their social protection systems, the potential to buffer adverse effects on communities and society may be limited. In this context, transitions could further exacerbate poverty, given the potential for job losses related to sector restructuring. Developing nations, therefore, must be strategic in the long and short term and consider how the transition is financed, executed, and implemented to ensure that no one is left behind.[67]

CONCLUSION

Transformations are already underway around the world. Whether primarily driven by the desire to achieve prosperity for all, reduce GHG emissions, or build climate resilience, countries must ensure that their transformation is just. They must ensure that their actions either do not lead to negative impacts on communities or that the prosperity that they are aiming to achieve reaches everyone.

As a vast and diverse region, Africa will be experiencing different transformations all over the continent. The country-specific circumstances will produce many pathways to achieve sustainable development incorporating low-carbon and climate-resilient activities. Regardless of the type of transformation a sub-region or a country embarks on; these transformations will require shifts in the socio-economic landscape, inevitably disrupting economies, livelihoods, and lives. The following section examines how just transition deployment is likely to vary in different contexts in the region and presents the impact of just transition on specific economic sectors.

[66] Tony Blair Institute for Climate Change. 2021. A Just Transition for Africa: Championing a Fair and Prosperous Pathway to Net Zero.
[67] Nokwanda Maseko. 2021. Unemployment and Sustainable Livelihoods: Just Transition in the face of Inequality. TIPS Working Paper.

3. UNPACKING JUST TRANSITION

Several international climate change-related agreements have formally introduced the concept of a just transition. First and foremost, signatories of the Paris Agreement recognised that livelihoods were at risk in achieving their mitigation and adaptation goals. They acknowledged that a "just transition of the workforce and the creation of decent work and quality jobs by nationally defined development priorities" was necessary.[68] Furthermore, with over fifty signatories at COP24, the Solidarity and Just Transition Silesia Declaration brought the concept of just transition into the climate change context, emphasizing that "just transition of the workforce and the creation of decent work and quality jobs are crucial to ensure an effective and inclusive transition to low greenhouse gas emissions and climate-resilient development".[69] At COP26, fourteen countries, along with the European Commission, signed the Just Transition Declaration, which aims to «ensure that no one is left behind in the transition to a net zero and climate resilient future".[70]

[68] UNFCCC. 2015. Paris Agreement.
[69] COP24. 2018. Solidarity and Just Transition Silesia Declaration.
[70] COP26. 2021. Supporting the Conditions for a Just Transition Internationally.

Despite attempts to delineate what a just transition may be, the concept is often nebulous given that just transition is highly context-dependent and that there is no singular widely accepted definition yet. There are, however, several ways to explore and examine the concept, which provide more insight and clarity. This section first reviews the theoretical justice underpinnings integral to just transition's equity and fairness aspects. Next, the foundations that comprise just transition are reviewed. Specific definitions or situations do not bind these core foundations; they aim to illustrate the objectives and goals just transition intends to achieve. This section wraps up with a brief discussion of prominent just transition frameworks that have contributed to the just transition discourse worldwide and have been instrumental in setting the stage for efforts to implement a just transition. These frameworks have also added to the just transition discourse and overall learning by synthesising the justice underpinnings, often highlighting the goals of a just transition and providing entry points to integrate transition into a given socio-economic and environmental.

THEORETICAL JUSTICE UNDERPINNINGS

The theoretical equity underpinnings clarify how justice may be considered in a just transition. Justice may be considered in three distinct ways and contribute to ensuring fairness in the process, outcome, and consequences of given situations. The three types of justice (distributive, procedural, and retributive/restorative) can be addressed independently or together to ensure fairness. A brief definition of each of these types of justice is provided in Table 1, followed by a brief discussion of how these may be applied in general terms. The particularities of these types of justices are also addressed from an African or developing country perspective.

Table 1. Three types of justice of a just transition.

DISTRIBUTIVE JUSTICE	PROCEDURAL JUSTICE	RETRIBUTIVE/ RESTORATIVE JUSTICE
Distributive justice is concerned with the fairness of the distribution of resources. However, fairness often differs depending on the parties involved, especially when the resource is valued highly.	Procedural justice emphasizes that the dispute resolution process should be fair and that decisions are impartially made and implemented. When people believe the process to be fair and impartial and that the rules apply equally to everyone, they are more likely to accept the outcome of the ruling.	Retributive and restorative justice pertains to the consequences for the offending party. Retributive justice is concerned with sanctions on those who break the rules and ensuring they are held accountable. Restorative justice helps the offender make amends and promotes dialogue between victim and offender.
INTENTION		
Intention refers to the underlying vision for transition planning and action. It defines the range of perspectives and approaches to driving the social, political, and economic change needed in the transition. It ranges from seeking reform, which relies on incremental change through existing social and economic systems, to seeking transformation, which requires an overhaul of existing political and economic systems to achieve inclusive sustainable development and social equity. In some approaches, the path to transformation can first be paved with reforms.		

Source: Authors' own elaboration of concepts from Just Transition Initiative.

DISTRIBUTIVE JUSTICE

In recent years, just transition has been primarily applied to phase out fossil fuel-heavy industries in developed countries (such as Europe and the USA) to reduce GHG emissions. To ensure that no one is left behind, just transition efforts in these countries have focused on ensuring that people involved in these fossil fuel-heavy industries were provided with alternative livelihoods to mitigate the negative socio-economic impacts associated with the transition to a low-carbon economy. Since development has already been achieved in these countries to varying degrees, just transition efforts have been focused on ensuring the continued distribution of wealth and that the impoverished fraction of the population is also given access.

However, the path to economic development is different in Africa, where many of the world's least developed and most impoverished nations are located.[71] Aiming to bring the region's population out of poverty, development in Africa has focused not on maintaining development, the distribution of wealth, and the overall well-being of society but on increasing it. Still, sustainability, inclusiveness and climate action should not be neglected, even if developmental initiatives can compete with climate action. Through a just transition, the region can secure the distribution of wealth and ensure that inclusive climate action does not run opposite to development. Without it, efforts towards distributive justice may fall short of the countries' intended goals.

PROCEDURAL JUSTICE

With the Silesia Declaration, just transition has been viewed in the global policy scene as a geopolitical priority recognizing that "the consideration of the social aspect of the transition towards a low-carbon economy is crucial for gaining social approval for the changes taking place".[72] Therefore, just transition's emphasis on social inclusion, vulnerable stakeholder participation, and social empowerment can ensure greater representation and overall societal engagement and acceptance. A just transition must ensure the proper design of the consultation process, considering how such processes are traditionally conducted in different parts of the world. These processes must also ensure the inclusion of groups whose perspectives have been historically ignored and allow them to advocate for their needs.

This approach to procedural justice will remain relevant in the just transition of Africa. The voices of women, the youth, indigenous groups, and other disadvantaged groups shall be amplified to ensure their meaningful participation and engagement in just transition efforts and to push for the inclusion of all communities in the path to sustainable development upstream of the undertaken actions. Furthermore, as many local communities have had generations of people living in the same areas and have thus amassed a tremendous amount of knowledge regarding their environments, they can become invaluable sources of information for climate action and other sustainable development initiatives. Involving women and men from communities throughout the climate-related action process and improving social participation can also increase visibility and overall understanding of the transition, fostering societal acceptance. When there is enhanced buy-in to the transition, more agents of change will occur across communities and regions.

RETRIBUTIVE/RESTORATIVE JUSTICE

The just transition in Africa can also be viewed from the broader global perspective. The Paris Agreement recognises "the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances".[73] The responsibilities of developed and developing countries shall thus differ based on their respective capacities, with developed countries expected to contribute more to the effort by supporting those with lesser capacities. Furthermore, the significant contribution of developed countries to historic GHG emissions that have led to the current climate crisis underlines their responsibility to the rest of the world. Under the idea of retributive justice, which encompasses the concept of climate justice, developed countries have the responsibility in this global effort to provide support to developing countries such as those in Africa.

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[71] According to the World Bank, in 2018, 66.6% of Sub-Saharan Africa was found to be in poverty, or living on less than US$3.20 a day. Although the poverty rate has been falling, the number of people living in poverty is actually increasing.
[72] Nick Robins. 2018. The just transition comes of age.
[73] UNFCCC. 2015. Paris Agreement.

The possibility of international cooperation has been formalized in Article 6 of the Paris Agreement, which promotes voluntary collaboration among countries to achieve their Paris Agreement targets, as reflected in their NDCs.

INTENTION

Intention defines the range of perspectives and approaches to driving the social, political, and economic change needed in the transition. It ranges from seeking reform, which relies on incremental change through existing social and economic systems, to seeking transformation, which requires an overhaul of existing political and economic systems to achieve inclusive sustainable development and social equity. In some approaches, the path to transformation can first be paved with reforms. The overarching goal, therefore, is to create transformational change, yet reform can assist in this process. As just transition is examined in greater detail in various African contexts, the notion of intent can provide insights on best understanding the scope and range of the process and its outcomes.

The theoretical underpinnings previously discussed and the notion of intent help us understand the concept of dress transition and provide insight into how justice may be exhibited. These underpinnings also help to define just transition, its scope and goals within a given context. The following subsection underscores the core foundations that adjusting transition can exhibit. While not all core foundations may be present simultaneously, they reflect the overarching goals and ideals that just transition can achieve.

JUST TRANSITION FOUNDATIONS

Multiple institutions have advanced just transition and proposed guidelines and core foundations to zero in on the concept and describe how it may manifest. Table 2 synthesizes and describes these core foundations, highlighting the possible social, economic, and political changes required to achieve a just transition. This table presents an overarching conceptualization of the potential of a just transition; however, different situations and contexts may require modifications. These foundations, however, delineate the scope of just transition and what it can and cannot achieve. A closer inspection of these foundations is provided below.

Table 2. Just transition foundations.

FOUNDATION	DESCRIPTION
Specific to national context	Governments, NGOs, and other players need to consider the country's specific context, including the stage of development, economic sectors, and types and sizes of enterprises. Knowledge of the interplay between a country's macroeconomic, labour, sectoral, and industrial policies is essential in creating an environment for businesses to flourish and directing public and private investments towards sustainable development to generate value-creating jobs along the supply chain across sectors.
Institutionalization	The multi-dimensional and cross-cutting nature of a just transition requires specific institutional frameworks. Designating an institution to lead on just transition ensures that processes are enacted consistently, demonstrates the coherence of communication around the subject, and allows greater ease of financing. Higher standards for improvement, along with facilitating feedback on processes, means that it will be more feasible to develop best practices that can be used as a learning process.

Coherent policy framework	A policy framework that supports a just transition should encompass aspects of the socioeconomic landscape that will assist in its realisation. These include: • Economic policies provide the framework for low-carbon, climate-resilient economic development and diversification. • Labour and training policies, which handle employment conditions, create pipelines to equip workers with necessary skills and devise the mechanisms for tripartite dialogues. These also include policies that foster entrepreneurship and business productivity and active labour market policies, which protect against the negative impacts of shifting labour market conditions. • Environmental, health, and safety policies govern the protection of natural habitats and thus help reduce pollution and natural hazards that risk people's health and safety. • Social policies call for building community resilience and promoting health for workers, their families, and communities. They ensure a basic level of protection for all levels of society, especially for disadvantaged groups, as well as. Provide support and compensation for displaced workers. • Educational policies guide the design of academic pipelines to equip future students with the skills relevant to jobs in emerging green sectors. These shall also spread awareness of the need to transition to a low-carbon, climate-resilient society.
Gender equality	Equitable outcomes inherently involve the consideration of comprehensive gender-responsive policies. Climate change has been found to disproportionately affect women due to less access to resources, information, and decision-making opportunities, among others. The adverse effects of climate action can have a similar disproportionate impact on women. Just transition efforts should actively aim to provide adequate support to women to ensure they are not left behind.[74]
Decent jobs	Providing decent jobs entails providing fundamental rights at work, inclusive procurement processes, equal salary compensations, social pensions for workers, including pensions and health benefits, inclusive corporate Social Responsibilities/Environmental Social Governance, etc. It also requires reskilling, retraining and providing compensation for workers affected due to climate action. It also entails creating an enabling environment for a more equitable business model to ensure the transition is just.
Strong social consensus	A solid foundation of social dialogue is necessary to build a transparent planning process. Strategies to target social participation must ensure that the voices of women, indigenous groups, and other vulnerable communities are heard and that their inputs are incorporated into the policy development process.
Meaningful stakeholder participation	A just transition requires that low-carbon and climate-resilient development pathways consider justice issues, including displaced workers, indigenous people, and other disenfranchised groups. Active, inclusive consultations with various stakeholders are needed to ensure transition policies meet equity goals rather than reinforce existing inequalities in the underrepresentation of marginalized groups and to decrease the risk of unintended harm of individual policies.
Sectoral analysis and data for decision-making	Sectoral analyses can determine the potential impacts of climate policies and actions, including distribution and fiscal impacts. For example, these can be done to understand the possible effects of the closure of a fossil fuel-intensive power plant on workers, their families, and communities. These can then lead to the identification of training and employment needs in the future, along with potential sources of new green jobs. A data-driven process clarifies to policymakers the effects of interventions and enables planning for gaps in employment location, skills needed, and timing of jobs.
Cooperation	Cooperative actions are needed to bolster climate resilience in considering mitigation and adaptation actions in implementing inclusive, sustainable development strategies, both among countries and between national and international actors. At a national level, social partners cooperate with governmental authorities to develop national policies. At an international level, countries can assist each with assistance and capacity building through global initiatives. International entities such as NGOs and MDBs can provide technical assistance to local and national governments. In this regard, opportunities exist for regional cooperation to build capacity in developing countries.

[74] Ayesha Tandon. 2020. Tackling gender inequality is 'crucial' for climate adaptation.

In an effort to synthesize the theory of just transition and its potential achievements, various institutions have designed frameworks and guidelines. These frameworks serve as a conduit to go from theory to action. The following several frameworks from leading institutions working on just transition are reviewed.

FRAMEWORKS AND GUIDELINES

The frameworks presented in this section are conceptualizations and designs of prominent just transition thought leader organisations. Most of these frameworks are broad in scope, guiding how complex concepts embedded within just transition interact. A few frameworks are more prescriptive and provide insights into planning for a transition. Because the more prescriptive frameworks provide more detail, they also tend to be more segmented, focusing on a particular economic sector, such as labour. Overall, the frameworks are not prescriptive; therefore, while identifying an approach and highlighting the important impacts and potential for addressing transition, the frameworks do not address how a just transition may be operationalized on the ground.

MULTILATERAL DEVELOPMENT BANKS (MDBS) HIGH-LEVEL PRINCIPLES

Multilateral Development Banks (MDBs), including the African Development Bank (AFDB), have joined together and committed to supporting a just transition. In 2021, following the High-Level MDB Statement[75] made in 2019, where MDBs declared their commitment to "working with national development banks and other financial institutions to develop, by COP26, financing and policy strategies supporting a just transition that promotes economic diversification and inclusion", MDBs released the MDB Just Transition High-Level Principles.[76]

These principles "provide high-level direction on the aims, approach, scope, scale, outcomes and processes associated with a just transition". Their objective is to guide MDBs' strategies and policies, optimizing assistance and supporting consistency in-country engagement, including efforts to integrate just transition considerations into NDCs and long-term low emissions and climate-resilient strategies. Still, they allow for flexibility for MDBs to adjust their activities to the context-specific nature of just transition challenges and opportunities in client countries. They also promote a clear and consistent framework for engagement with other stakeholders and sources of finance.[77] Annexe 1 presents a detailed explanation of how Just Transition High-Level Principles are envisioned by the MDBs.

As described in the summary below, MDBs' principles "provide high-level direction and context-specific challenges and opportunities. The principles are summarized below.

Principle 1: MDB support for a just transition aims to deliver climate objectives while enabling socio-economic outcomes, accelerating progress towards the Paris Agreement and the SDGs.

Principle 2: MDB support for a just transition focuses on moving away from GHG emissions-intensive economic activities through financing, policy engagement, technical advice, and knowledge sharing, in line with MDB mandates and strategies and country priorities, including NDCs and long-term strategies.

Principle 3: MDBs will encourage support for a just transition by building on existing MDB policies and activities, mobilizing other sources of public and private finance, and enhancing coordination through strategic plans to deliver long-term, structural economic transformation.

Principle 4: MDB support for a just transition seeks to mitigate negative socio-economic impacts and increase opportunities associated with the transition to a net zero economy, supporting affected workers and communities and enhancing access to sustainable, inclusive and resilient livelihoods for all.

Principle 5: MDB support for a just transition encourages transparent and inclusive planning, implementation and monitoring processes that involve all relevant stakeholders and affected groups and that further inclusion and gender equality.

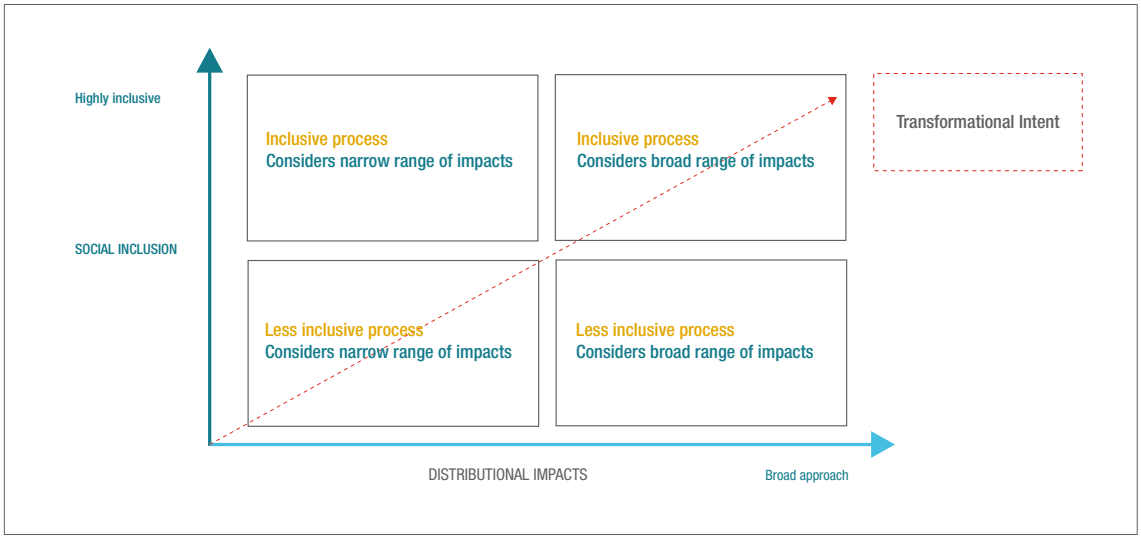
[75] MDB Group. 2021. High Level MDB Statement.
[76] MDB Group. 2021. MDB Just Transition High-Level Principles.
[77] MDB Group. 2021. MDB Just Transition High-Level Principles.

CLIMATE INVESTMENT FUNDS

The Climate Investment Funds' Just Transition Initiative (JTI) has developed the following framework based on procedural and distributive justice (Figure 9). This framework also highlights the concepts of intention and the notion of reform, and transformation as ways to conceptualize a just transition. The intention is critical to just transitions because it captures various perspectives and approaches to driving the social, political, and economic change that can be realized through just transitions. The reform approach, outlined in the framework below, refers to achieving change through the existing social and economic systems via incremental rather than radical change. At the other end of the spectrum, the transformation approach indicates an ambition to overhaul existing political and economic systems incompatible with sustainable development and social equity.

The Climate Investment Funds (CIF) has also developed the **Accelerating Coal Transition (ACT),**[78] an investment program to phase out coal. The ACT framework focuses on a three-pronged approach to phasing out coal: **governance, people, and infrastructure.** Through these three prongs, this framework addresses the scope, outcomes, and impacts of the transition, focusing on the potential to accelerate the transition away from coal, a recognised slow process, and creating lasting climate benefits. The objectives of this framework are to support developing country governments in meeting their climate priorities, leverage funding, and highlight the use and potential of renewables, among other benefits emanating from the transition.

Figure 9. Just Transition framework by the Climate Investment Funds. A) The promotion of socially inclusive processes for planning and implementing climate related transition (referred to in the framework as ensuring 'procedural justice'); B) Ensuring a fair distribution across society of the potential costs/negative impacts of transition (referred to in the framework as 'distributional justice'), and of the benefits of transition; and, C) A deliberate intention to support transformation of social or economic structures that perpetuate inequality or vulnerability, especially in regions that will be affected by climate-related transition (referred to in the framework as 'transformational intent').



Source: CSIS and CIF. 2021. A Framework for Just Transitions.

[78] CIF. 2021. Coal-to-Clean Transition.

INTERNATIONAL LABOUR ORGANISATION (ILO)

The International Labour Organisation (ILO) presents a set of guidelines for a just transition.[79] The ILO outlines several principles as instrumental for developing policies that reflect a just transition vision. These include:

- Strong social consensus on the goals and pathways to sustainability.
- Respect, promotion, and realisation of fundamental principles and rights at work.
- Strong gender dimensions of environmental challenges and opportunities.
- Coherence across economic, environmental, social, education/training, and labour portfolios.
- A just transition framework for all to promote the creation of more decent jobs.
- Policy and program design align with specific in-country conditions, including the stage of development.
- Fostering cooperation among countries.

The guidelines focus on the labour aspect of transition, emphasizing decent jobs and equity between genders in the workforce. These guidelines also seek to reform or shape work, workplace and education policy and capacity development to develop a more socially and economically just society. The ILO framework has been instrumental in the just transition discourse and has helped inform other frameworks and specific actions in specific just transition sectors.

THE EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT (EBRD)

The EBRD's vision for just transition is one in 'which the benefits of a green economy are shared and the vulnerable are protected'. The EBRD prioritizes three themes for their just transition interventions: **the green economy transition, worker support, and regional economic development.**[80] The EBRD recognises the challenges of a just transition and will work to support countries by creating private partnerships to ensure support throughout the transition process.

WORLD BANK: SUPPORT TO ENERGY TRANSITION IN COAL REGIONS

The World Bank Program, aimed to support the restructuring of the coal sector in coal-dependent regions, has three pillars, **1) governance systems, 2) people and communities,** and **3) land and environmental reclamation,**[81] which help better understand the needs, challenges, and shocks as nations phase away from coal, and as a way to channel assistance and support.[82]

The theoretical underpinnings of justice, the core foundations, and frameworks of just transition show the evolution of the just transition discourse and have been instrumental in helping to understand better the challenges, scope, and wide-ranging definitions of just transition. Unpacking the concept of just transition is a reference point as institutions, countries, and regions search for their definitions and ways to implement just transition. Subsequent sections of this report address the challenges, opportunities and nuances for a just transition in the African context. However, a general understanding of Africa's climatic, socio-economic and political situation is presented first.

[79] ILO. 2015. Guidelines for a just transition towards environmentally sustainable economies and societies for all.
[80] EBRD. 2020. The EBRD just transition initiative.
[81] The World Bank Group. 2021. Coal Mine Sector Adjustment and Just Transition Planning Assessment Framework.
[82] The World Bank Group. 2021. Just Transition for all: The World Bank Groups Support to Countries Transitioning Away from Coal.

4. AFRICAN REGIONAL CONTEXT

To better understand how a just transition may be conceptualized, defined, and implemented in the African context, an overview of the current climate, economic, political, and social conditions is reviewed in this section. While not exhaustive, this synthesis highlights some of the region's common challenges. It provides insights to ensure that just transition implemented in Africa reflects Africa's needs, advantages, and aspirations.

CLIMATE CHANGE CONTEXT

Africa's contribution to the global amount of greenhouse gas emissions is marginal. In 2021, Africans comprised 17.5% of the world's population,[83] but contributed only 2.7% of cumulative global CO2 emissions since 1751.[84] As illustrated in Figure 10, regarding absolute emissions, 50 out of 54 African countries produced less than 65 MtCO2 in 2020, except South Africa, Egypt, Algeria and Nigeria, which generated 452, 214, 155 and 126 MtCO2, respectively. In the same year, in terms of emissions per capita, South Africa again ranked first in the region (7.6 tCO2/person), followed by Libya (7.4 tCO2/person) and Equatorial Guinea (7.3 tCO2/person). For the rest of the continent, 44 of 51 African countries produced less than 1 tCO2/person,[85] compared to the world average of 4.5 tCO2/person.[86]

Despite its minimal contribution to the global amount of greenhouse gas emissions, the detrimental effects of climate change severely impact Africa. The marked anomalies in temperature and rainfall patterns have increased the frequency and intensity of extreme weather events across the continent. According to the World Bank's Africa's Pulse report in 2021, "relative to 1970-79, the frequency of droughts in sub-Saharan Africa nearly tripled by 2010-19. It has more than quadrupled for storms, and it has increased more than tenfold in the case of floods."[87]

To cite some cases, in 2020, heavy rainfall provoked the bursting of the Congo River and the collapse of the Palar Bridge in Cameroon, limiting transboundary exchanges between Cameroon and Chad. The city of Doula in Cameroon also experienced floods and landslides due to an annual count of up to 85 days with daily precipitation over 20mm. Similar weather conditions were experienced in Zambia, where nearly 2,720 ha of cultivated crops went underwater. In Western Africa, flooding caused by the bursting of the Niger River hit 557,800 people, destroyed 51,560 houses and huts, and covered 9,471 ha of crops. In Eastern Africa, Sudan and Kenya were the worst impacted countries by changes in precipitation patterns. Sudan alone reported over 800,000 people affected and 155 deaths.[88]

Figure 10. CO_2 territorial emissions in 2020 ($MtCO_2$).

Source: Global Carbon Atlas. (Accessed 19 May 2022).

[83] Statista. 2022. Distribution of the global population by continent 2021.
[84] Patrick Dupoux, Lucas Chaumontet, Pia Carona, Stefano Niavas, Tolu Oyekan, Younès Zrikem, Kesh Mudaly, and Fiona Tokple. 2021. Building a Climate-Resilient, Low-Carbon, Job-Rich Africa.
[85] Global Carbon Atlas. (Accessed 19 May 2022).
[86] World Bank. World Bank Open Data. (Accessed 18 Jul 2022).
[87] World Bank. 2021. Africa's Pulse report: an analysis of issues shaping Africa's economic future.
[88] WMO. 2021. State of the climate in Africa 2020.

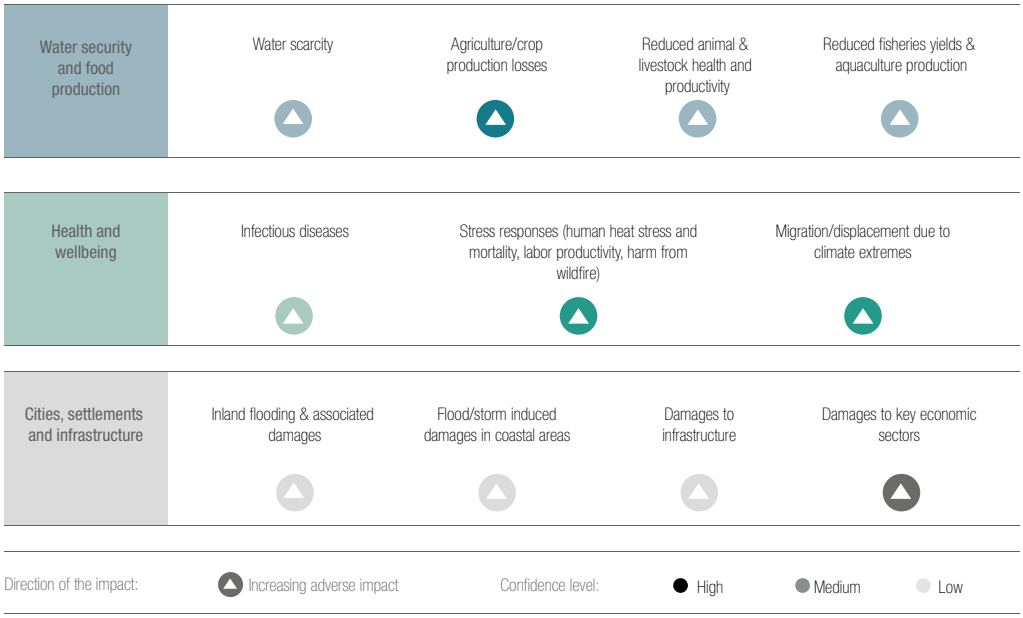
In South Africa, economic activities in the Northern Cape Province have been crippled by a drought lasting for almost a decade.[89] Likewise, very high temperatures and a shorter-term drought seriously affected 256 towns of KwaZulu-Natal Province in 2020,[90] but heavy rains destroyed approximately 12,000 houses and forced 40,000 people to abandon their homes in April 2022.[91] In Morocco and Algeria, the temperature exceeded 48°C in July 2020.[92]

As a result of natural disasters attributable to climate change, biodiversity, water availability, food production, people's living conditions, and economic growth have been hit.[93] In general terms, Figure 11 presents the level of climate change consequences affecting Africa.

According to the IPCC's latest report, African agricultural productivity growth has declined by 34% since 1961, the highest share at a global level (regionally speaking).[94] By 2050, in a high GHG emissions scenario, artisanal fishing might also decrease by 53% in Nigeria, 56% in Côte d'Ivoire, 60% in Ghana, and 26% all over West Africa.[95] The fishing situation has worsened since poor and corrupted management and control systems have allowed African ocean resources to overexploitation in recent decades.

In addition, it is projected that by 2030, 108-116 million African people will be exposed to impacts from the rise in sea level, a number that could potentially increase to 190-245 million by 2060 (compared to 54 million in 2000). These impacts are exacerbated by population growth and urbanization in low-elevation coastal zones. Even in scenarios of low population growth at 1.8°C global warming, sensitive population (people under 5 or over 64 years old) exposed to heat waves of at least 15 days above 42°C in African coastal cities is projected to increase from nearly 27 million in 2010 to 360 million by 2100.[96]

Figure 11. Observed impacts of climate change on African human systems.



Source: Authors' own elaboration based on Sixth Assessment Report of the Intergovernmentalw Panel on Climate Change.

[89] Bonthuys, Jorisma. 2022. Northern Cape drought takes its toll on young people's mental health.
[90] WMO. 2021. State of the climate in Africa 2020.
[91] Tandon, Ayesha. 2022. Climate change made extreme rains in 2022 South Africa floods 'twice as likely'.
[92] WMO. 2021. State of the climate in Africa 2020.
[93] IPCC. 2022. Technical Summary. H.O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, and A. Okem (eds.). In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
[94] C.H. Trisos, I.O. Adelekan, E. Totin, A. Ayanlade, J. Efitre, A. Gemeda, K. Kalaba, C. Lennard, C. Masao, Y. Mgaya, G. Ngaruiya, D. Olago, N.P. Simpson, and S. Zakieldeen. 2022. Africa. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
[95] CFFA. 2021. Living on the frontline: climate change will first impact African coastal fishing communities.
[96] C.H. Trisos, I.O. Adelekan, E. Totin, A. Ayanlade, J. Efitre, A. Gemeda, K. Kalaba, C. Lennard, C. Masao, Y. Mgaya, G. Ngaruiya, D. Olago, N.P. Simpson, and S. Zakieldeen. 2022. Africa. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

The negative impacts of climate change have also induced migration all over the continent. In 2018, over 2.6 million people were displaced in Sub-Saharan Africa; in 2019, the figures increased to 3.4 million.[97] In 2020, the East and Horn of Africa region saw an estimated 12% of all new population displacements worldwide, representing over 1.2 million new disaster-related displacements[98] and almost 500,000 new conflict-related displacements. This is nothing new: the four significant droughts that affected Kenya during the 2000s forced 3 million pastoralists to migrate, while one-off major droughts happening in Ethiopia's highlands caused both temporary human displacements and permanent migration of people looking for livelihoods that are not dependent on water availability.[99] By 2050, the situation may exacerbate under a 1.7°C global warming scenario, and between 17-40 million may be displaced due to climate impacts. Over 60% of these climate refugees[100] are expected to be in West Africa.[101] Beyond the dramatic impact on people's way of life, forced migration leads to unplanned social protection and climate resilience policies and measures.

In Africa, minimal GHG generation and severe climate change impacts contrast with high deforestation rates. Africa lost 3.94 million hectares of forest every year between 2010 and 2020, becoming the region with the highest net loss of forest area in the world.[102] Demand for land for crops, timber, fuel, wood and charcoal are among the main reasons for deforestation, alongside weak governance frameworks, land tenure insecurity, poor management policies, and corruption.[103]

Cocoa cropping is one of the major responsible for forest clearings across the continent. Nearly 75% of the world's cocoa (3 million tons per year) is produced by only four African countries: Côte d'Ivoire, Ghana, Nigeria, and Cameroon.[104] In particular, the destruction of one-quarter of Côte d'Ivoire's forests and 10% of Ghana's trees between 2001 and 2014 has been attributed to this activity.[105] Palm oil is another cash crop threatening Africa's forests, especially in Nigeria and Cameroon.[106]

Charcoal demand leads to further deforestation in Africa while generating significant carbon emissions. Being cheap, urban and rural households heavily rely on charcoal as the primary fuel for cooking and heating. Accordingly, charcoal production has been identified as the leading cause of forest destruction in Zambia, a country that holds one the highest deforestation rates at a global level: 250,000-300,000 hectares per year.[107] This dynamic poses a dilemma between forest preservation and meeting people's needs, which is closely related to low electricity access in Africa.

Overall, Africa's need for adaptation and resilience building is clear. However, Africa has limited adaptive capacities for future natural events and climate change response compared to other continents. Africans lack long-term technical skills and strategies to face environmental changes. As presented in Figure 12, the category of lowest adaptive capacities includes almost exclusively African countries except Haiti, Yemen, Afghanistan, Bangladesh, Myanmar, the Solomon Islands and Papua New Guinea.[108]

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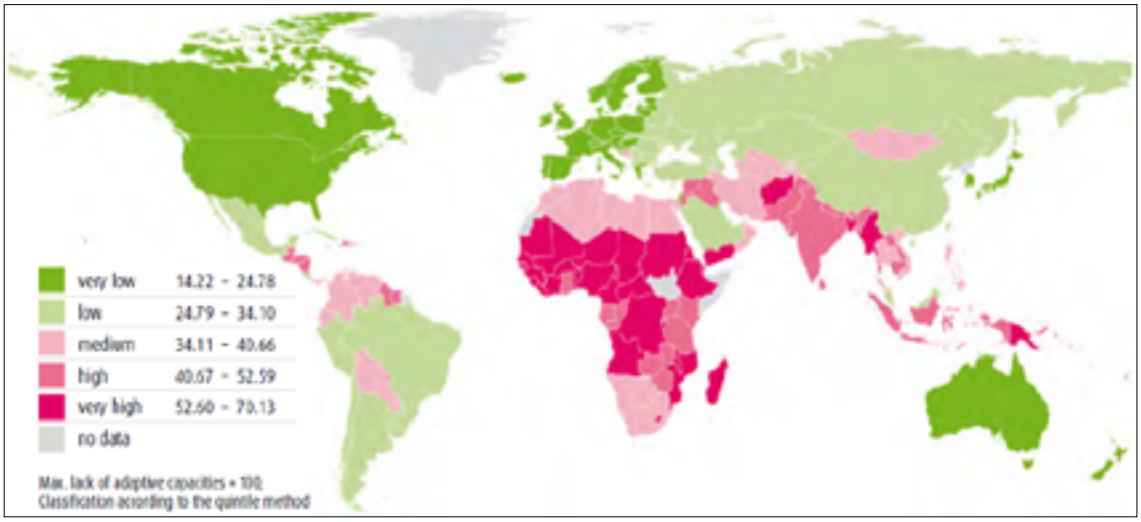
[97] C.H. Trisos, I.O. Adelekan, E. Totin, A. Ayanlade, J. Efitre, A. Gemeda, K. Kalaba, C. Lennard, C. Masao, Y. Mgaya, G. Ngaruiya, D. Olago, N.P. Simpson, and S. Zakieldeen. 2022. Africa. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
[98] World Meteorological Organisation. 2021. State of the Climate in Africa 2020.
[99] Timothy Doyle and Sanjay Chaturvedi. 2011. Climate Refugees and Security: Conceptualizations, Categories and Contestations. The Oxford Handbook of Climate Change and Society.
[100] The term climate refugee refers to people who have been forced to abandon their traditional habitat and to change their livelihoods – temporarily or permanently– due to major climate disruptions.
[101] C.H. Trisos, I.O. Adelekan, E. Totin, A. Ayanlade, J. Efitre, A. Gemeda, K. Kalaba, C. Lennard, C. Masao, Y. Mgaya, G. Ngaruiya, D. Olago, N.P. Simpson, and S. Zakieldeen. 2022. Africa. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
[102] FAO and UNEP. 2020. The State of the World's Forests 2020. Forests, biodiversity and people.
[103] Lovei, Magda. 2017. Telling real people's stories about forests and livelihoods in Africa.
[104] Igini, Martina. 2022. Deforestation in Africa.
[105] MightyEarth. n.d. Chocolate's dark secret.
[106] Igini, Martina. 2022. Deforestation in Africa; Uyi Ojo, Godwin. 2017. Oil palm in the wider landscape and threats to Nigeria's forests.
[107] Breitfeller, Jessica. 2015. Charcoal: An Important Driver of Deforestation in Africa.
[108] Bündnis Entwicklung Hilft and IFHV. 2021. WorldRiskReport 2021.

Figure 12. Level of lack of adaptive capacities to future natural events and climate change.



Source: Bündnis Entwicklung Hilft and IFHV. 2021. WorldRiskReport 2021.

Disasters triggered by natural hazards can impede Africa's overall pathway towards prosperity since they pull governments' efforts away from development priority areas and require massive investments. For instance, extreme weather events can disrupt industries such as agriculture and tourism, which many people in Africa rely on for income. Since recurring climate shocks threaten development, a negative feedback loop is created in Africa: poverty becomes both a cause and an effect of climate change. Hence, as the livelihoods of vulnerable people come under increasing pressure, generating and supporting alternatives that avoid unsustainable resource exploitation and building climate resilience are key issues to tackle simultaneously in Africa.

CLIMATE AMBITION IN AFRICA

Except for Libya, all African countries have submitted their first NDCs, and 38 have even submitted their updated NDCs. However, more progress has been observed in Long Term Strategies (LTS) and National Adaptation Plans (NAP): two and seven countries have delivered these policies, while other 12 and 44 nations still need to draft them, respectively.[109]

Overall, updated NDCs reveal the strengthening of climate ambition in Africa. In particular, five countries in the region show significant increases in their mitigation targets compared to the ones in their first NDCs: Liberia (54%), Rwanda (38%), Somalia (30%), Eswatini (19%), and Burkina Faso (11.2%). Regarding adaption, given the continent's vulnerability to climate change, most countries have increased their sectoral scopes and have aligned their targets with national climate policies. For instance, Nigeria's updated NDC now tackles sectors not part of the country's first NDC, such as water resources and other nature-based solutions, circular economy and waste management.[110]

Another noteworthy aspect is that most African-updated NDCs propose to involve diverse stakeholders in the revision process, including sectoral-level consultants and working groups at the local level. In the implementation plans, NDCs also highlight the need to involve youth and women in climate action. Namibia, for example, plans to establish a gender and youth climate and risk management working group to ensure the inclusion of these groups in climate action and discussions. Seychelles intends to integrate climate mitigation and adaptation content in formal and informal education institutions to build youth capacity around climate action and mainstream youth into the climate assessment agenda. Similarly, Ethiopia has added indicators to determine better women and youth participation in implementing the NDCs. In agriculture, for instance, the country plans to look at the proportion of women with management roles in irrigation initiatives.[111]

However, despite the above-mentioned efforts, most African countries still need to enhance climate-related investment plans in their updated NDCs, hindering the region from meeting their mitigation and adaptation goals. Only Nigeria, Rwanda, Ethiopia, and Morocco have improved the mobilization of climate finance.[112] Other challenges for NDCs implementation in Africa are summarized in Table 3.

Table 3. Summary of key challenges faced by African countries to develop and implement their NDCs.

CHALLENGES	DESCRIPTION
Coordination	Roles and responsibilities need to be better defined, which impedes aligning climate goals and financial allocation with local development priorities.
Technical development	Data collection, analysis, and storage systems must inform decision-makers and NDC's implementation process.
Policy development	Data collection, analysis, and storage systems must inform decision-makers and NDC's implementation process. Monitoring and evaluation systems are necessary for African countries to develop attractive pipelines of climate projects to attract investors.
Policy development	Absence of clear policies on climate change, particularly NAPs and National Adaptation Programmes of Action, limits countries' ability to plan and implement climate agenda.
Socio-economic factors	Poverty and literacy rate, among other factors, add to the challenge of making significant NDC progress and maintaining climate action at the top of the policy agenda.

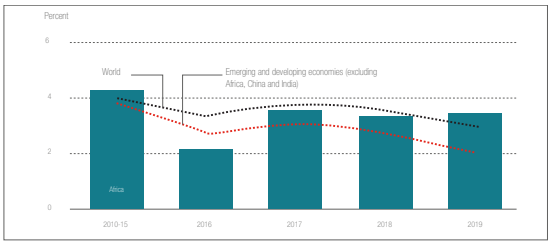
[109] Africa NDC Hub. 2021. Africa's NDC journey and the imperative for climate finance innovation.
[110] Africa NDC Hub. 2021. Africa's NDC journey and the imperative for climate finance innovation.
[111] Africa NDC Hub. 2021. Africa's NDC journey and the imperative for climate finance innovation.
[112] Africa NDC Hub. 2021. Africa's NDC journey and the imperative for climate finance innovation.

ECONOMIC CONTEXT

African countries exhibited accelerated economic development during the first decade of the 21st century. Between 2000 and 2010, the continent achieved an average annual GDP growth of 5.4%.[113] This growth was primarily supported by the rising minerals, metals and fuel prices, commodities that comprise a large part of African exports.[114] However, between 2010 and 2015, African economic growth slowed to 3.3% annually.[115] This significantly impacted oil-exporting countries (growth rates in Algeria, Angola, and Nigeria fell from 7.1% to 4%) and countries in Northern Africa that were affected by the Arab Spring in the early 2010s (Egypt, Libya and Tunisia showed no economic growth in this time period). The rest of the African economies maintained a similar growth in GDP to that of the previous decade due to slow but steady economic diversification.

Regional and global shocks in 2016 continued to slow the pace of growth in Africa, but recovery was manifested in 2017. Average real GDP reached 3.6% in 2017, up from 2.2% in 2016. The rally in commodity prices (mainly oil and metals), a sustained domestic demand (partly met by import substitution), and a strong agricultural performance were among the main factors bolstering this improvement. However, country-level variation was significant: growth in Sub-Saharan countries (excluding Nigeria) slowed from 3.8% in 2016 to 3.2% in 2017, while growth among net oil-importing countries grew at an average rate of 3.9% in 2017, up from 2.9% in 2016.[116] During 2018 and 2019, Africa showed a moderate average GDP growth of about 3.4% annually. The most remarkable performers included South Sudan (from 0.5% in 2018 and 5.8% in 2019), Mauritania (3.6% to 6.7%), and Côte d'Ivoire (7.4% in both years). But in Southern Africa, growth slowed from 1.2% in 2018 to 0.7% in 2019, mainly due to the devastation provoked by cyclones Idai and Kenneth.[117]

Figure 13. Average GDP growth in Africa (2010 – 2019), including world's average GDP growth.

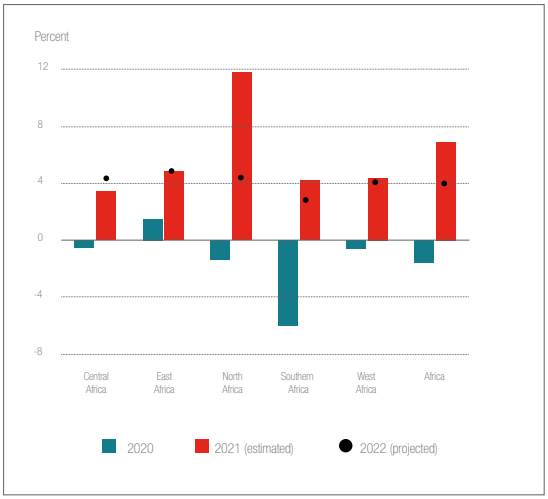


Source: AfDB. 2020. African Economic Outlook 2020.

As a result of the COVID-19 pandemic, Africa faced its worst recession in more than 50 years. In 2020, Africa's overall GDP declined by 2.1%. Southern Africa was the most affected region, with an economic contraction of 7%. In Central Africa, real GDP is estimated to decrease by 2.7%. Due to less restrictive lockdowns, Western Africa's GDP contracted by 1.5%. Northern Africa showed the lowest GDP contraction (1.1%). However, the most resilient region was Eastern Africa: it even revealed a GDP growth of 0.7% during 2020, largely due to a more significant economic diversification.[118]

[113] Acha Leke and Dominic Barton. 2016. 3 reasons things are looking up for African economies.
[114] Mehmet Arda. 2016. Economic development in Africa: salient trends and priorities. Florya Chronicles of Political Economy.
[115] Acha Leke and Dominic Barton. 2016. 3 reasons things are looking up for African economies.
[116] AfDB. 2018. African Economic Outlook 2018.
[117] AfDB. 2020. African Economic Outlook 2020.
[118] AfDB. 2021. African Economic Outlook 2021.

Figure 14. GDP growth in Africa by region (2020 – 2022).



Source: AfDB. 2022. African Economic Outlook 2022.

After the 2020s economic contraction, Africa showed a strong recovery. In 2021, Africa's GDP grew nearly 7%, mainly due to the recovery in oil prices, the resurgence in household consumption, and increasing investment after restrictions were eased. North Africa revealed the highest growth (11.7%) in the region, as illustrated below in Figure 14.[119]

However, economic growth achieved during 2021 is expected to decline in 2022. The lasting pandemic effects, mainly due to low vaccination rates and the Russia-Ukraine armed conflict, are linked with an expected GDP reduction of 4.1%.[120]

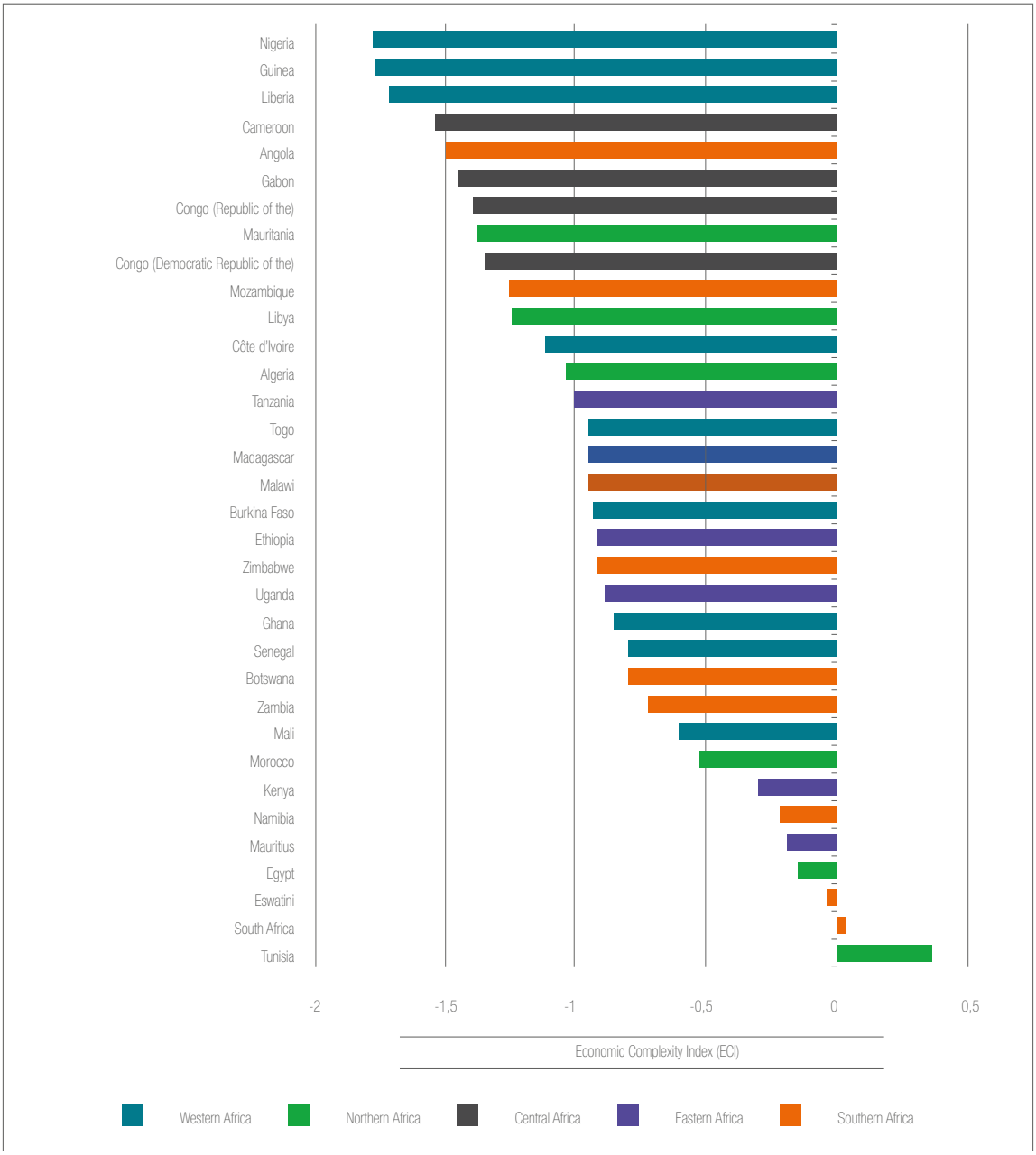
Although these indicators and projections provide a practical picture of Africa's economic situation, they also mask that economic growth can coexist with severe poverty. This upholds and exacerbates significant disparities between and within countries and regions. Limited economic diversification and the need to align local needs to international investment and cooperation criteria also highlight the existing economic disparities in the continent.[121]

The African continent is home to eight of the world's fifteen least economically diversified countries. Due to slow productivity growth and limited progress in technology and industrialization, Africa's share of global merchandise exports has remained almost unchanged between 1998 (1.9%) and 2018 (2.5%).[122] Figure 15 illustrates the Economic Complexity Index (ECI) of 34 African countries in 2019 to understand the lack of economic diversification in Africa. The ECI measures the knowledge society has regarding the goods it produces and exports.[123] A higher ECI reflects a higher diversified economy, which can be translated as a nation with more opportunities when facing disruptions in its different labour sectors. As the 45th most complex global economy, Tunisia is Africa's best-positioned nation. South Africa follows in the 60th position globally. The rest of the analyzed African countries (32 states) show negative ECIs. Even as GPD shows economic improvement, the lack of consistent economic diversification slows economic development for the continent as a whole.

Economic diversification matters because it increases resilience in front of unexpected national, regional and global phenomena, such as the COVID-19 pandemic. Since economic diversification often requires upgrading technological systems, it is linked to boosting productivity and creating better-paid jobs. Accordingly, economic diversification is touted as a key element for economic growth and essential to reducing poverty, especially in low-income and natural resource-dependent countries such as Africa.[124] Indeed, economic diversification has already been prioritized in Africa, including it as a high-priority area in Agenda 2063.[125]

[119] AfDB. 2022. African Economic Outlook 2022.
[120] AfDB. 2022. African Economic Outlook 2022.
[121] Yao Guimei. 2007. The Main Trends and Characteristics of African Economic Development.
[122] Zainab Usman and David Landry. 2021. Economic Diversification in Africa: How and Why It Matters.
[123] Atlas of Economic Complexity. Glossary.
[124] Zainab Usman and David Landry. 2021. Economic Diversification in Africa: How and Why It Matters.
[125] African Union Commission. 2015. Goals & Priority Areas of Agenda 2063.

Figure 15. Economic complexity of 34 African countries (2019).



Source: Authors' own elaboration based on data provided by the Atlas of Economic Complexity.

POLITICAL CONTEXT

African political context is analyzed in light of governance and corruption levels exhibited by African countries. Governance, defined as the appropriate provision of goods and services by national governments,[126] performs differently across the continent. During the last decade (2010-2019), 26 African nations have improved their governance-related indicators, while in 15, these indicators have started to decline. Corruption, as one of the main hurdles to economic development in the continent, must be better faced in 35 African countries.

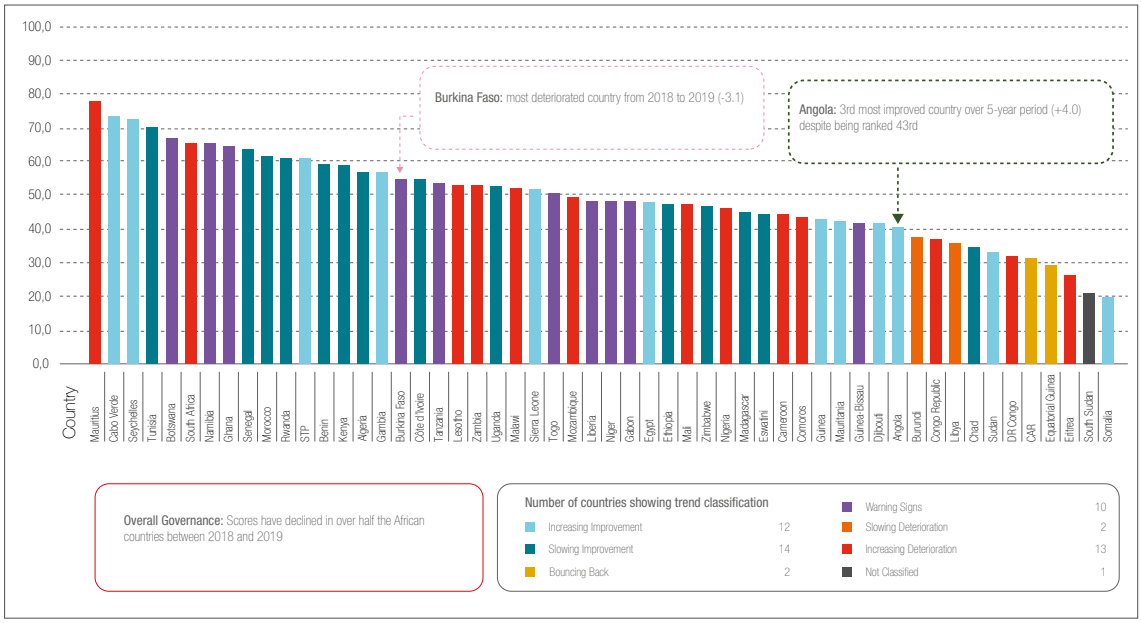
GOVERNANCE

Poor governance has significantly impacted the economic development of most African nations. According to the 2020 Ibrahim Index of African Governance (IIAG),[127] the African continent improved overall governance during the last decade (2010 - 2019). Nonetheless, the annual rate of progress slowed since 2015, declining sharply since 2019. The IIAG assesses four governance categories: 1) Foundations for Economic Opportunity, 2) Human Development, 3) Participation, Rights and Inclusion, and 4) Security and Rule of Law. The former, 'Foundations for Economic Opportunity' and 'Human Development' reveal improvements (by +4.1 and +3.0 points, respectively), while 'Participation, Rights & Inclusion' and 'Security & Rule of Law' show a decline (by -1.4 and -0.7 points, respectively).[128]

The decline of the later categories is attributed to deteriorating security and an increasingly hostile environment to ensure human rights and civic participation. According to the Center for Strategic and International Studies (CSIS), Africa faces multiple security threats related to extreme groups, civil wars, piracy, and drug trafficking, among other causes. For example, the Sahel, Lake Chad Basin, Somalia, eastern Democratic Republic of the Congo, and Mozambique have to deal with the brunt of extremist threats. The ongoing civil war in Ethiopia "has displaced 2 million people, has contributed to massive human rights violations, and risks the onset of famine in the northern Tigray region".[129]

Figure 16 illustrates African nations' overall governance index on a scale from 0 to 100 points. It shows that, by 2019, 26 African countries had improved their governance level, with the Gambia leading (+9.2 points) mainly due to increased transparency in state processes and expansion of opportunities for civil society participation. On the contrary, in 15 African countries governance level started to decline in 2015. Specifically, Libya has experienced the most significant deterioration (-5.5 points) due to weak security and limited social protection systems.[130]

Figure 16. Overall Governance scores and trend classifications by 2019.



Source: Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance: Index Report.

[126] Ibrahim Index of African Governance (IIAG). (Accessed 14 Jul 2022).
[127] The IIAG assesses governance performance in 54 African countries on a decade basis. It comprises indicators of four key sectors: political, social, economic and environmental, which are measured by a set of significant variables for the African context.
[128] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance: Index Report.
[129] Judd Devermont. 2021. Africa's Security Challenges: A View from Congress, the Pentagon, and USAID.
[130] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance: Index Report.

Given this context, governance is a key aspect of Agenda 2063, listing it as the third of its seven overarching aspirations for the continent.[131]

CORRUPTION

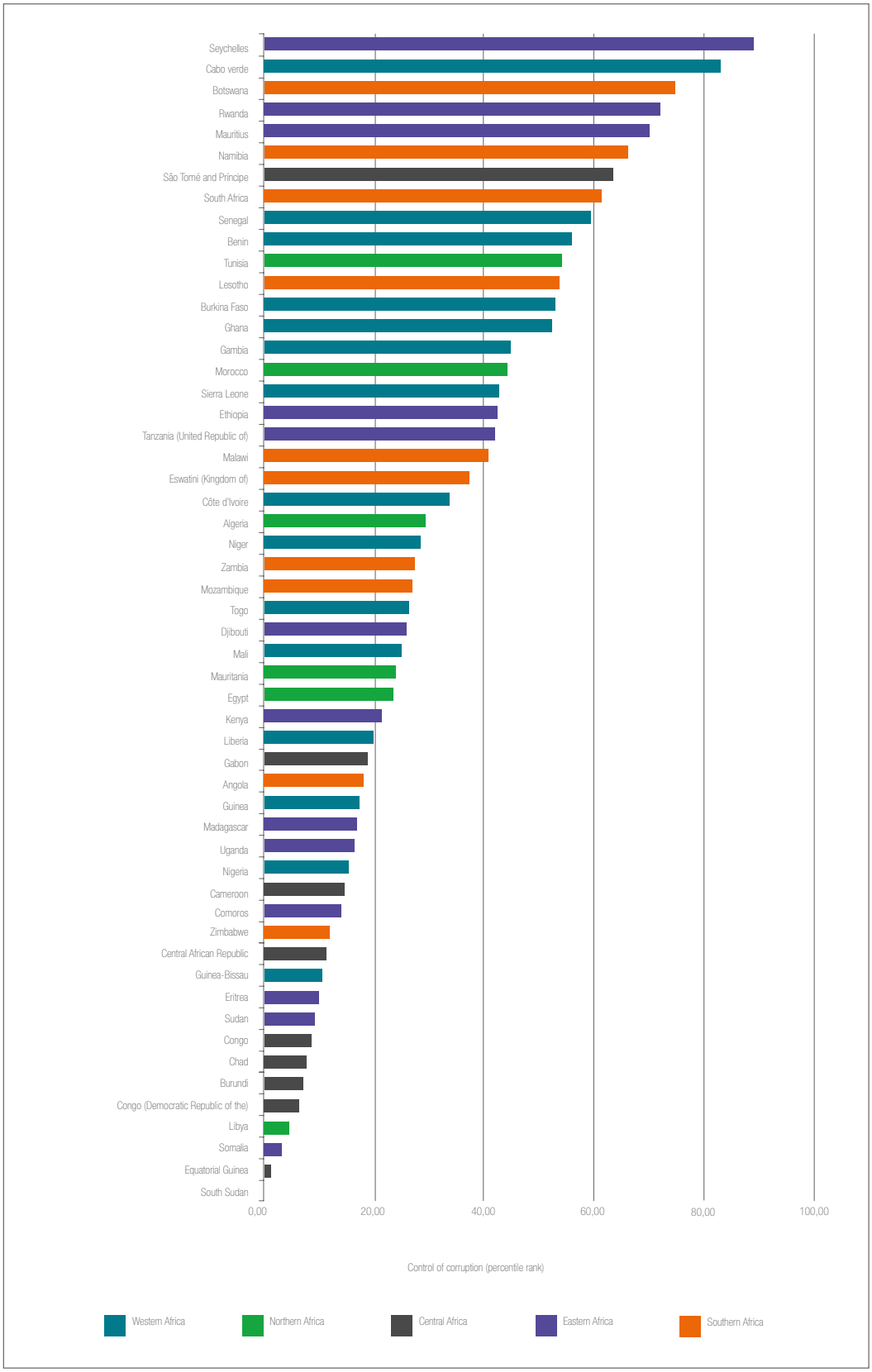
Since corruption seriously threatens Africa's economic development and governance, curbing it is a top priority in Agenda 2063. Subscribing to a continental strategy, the African Union supports national plans and actions that reduce illicit financial flows (IFFs) in the public and private sectors. In Africa, IFFs come from three sources: a) commercial activities; b) criminal activities; and c) corruption in the public sector, each one accounting for nearly 65%, 30% and 5% of continental IFFs, respectively. The main IFFs generators include false invoicing and mispricing of imported/exported products.[132] Due to these illegal practices, Africa loses about $88.6 billion (3.7% of its GDP) annually.[133]

Corruption is key in determining a country's governance stability. The World Bank's *Worldwide Governance Indicators* encompass six key dimensions of governance. One of these dimensions is corruption control, an indicator aimed to "capture perceptions of the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests".[134] Some of the main variables to calculate this measure include corruption among public officials, irregular payments in public utilities, irregular payments in tax collection, and corruption, among others.[135] Figure 17 classifies African countries based on the corruption control they performed in 2020. 35 out of 54 countries were situated in Q1 and Q2, which shows that nearly 65% of African governments had poor management of corruption in their nations.

Some corruption leading causes are attributable to "poor working conditions, lack of training and resources, and low salaries". Because corruption has been directly linked to limited economic development, it has also negatively impacted lower-income and vulnerable populations, hindering their access to essential services such as health and education. José Ugaz, former chair of the Transparency International board, says, "Corruption creates and increases poverty and exclusion. While corrupt individuals with political power enjoy a lavish life, millions of Africans are deprived of basic needs like food, health, education,[136] housing, access to clean water and sanitation".[137]

[131] African Union Commission. 2015. Goals & Priority Areas of Agenda 2063.
[132] ECA, AfDB and AUC. 2021. African Statistical Yearbook 2020.
[133] Mhaka, Tafi. 2022. Corruption: Africa's undeclared pandemic.
[134] Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi. 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues.
[135] Worldwide Governance Indicators. n.d. Control of corruption.
[136] ECA, AfDB and AUC. 2021. African Statistical Yearbook 2020.
[137] Transparency International. 2015. Corruption in Africa: 75 million people pay bribes.

Figure 17. Control of corruption (percentile rank) performed by African countries in 2020.



Source: Authors' own elaboration based on data from the Worldwide Governance Indicators' database.

SOCIAL CONTEXT

LEAST DEVELOPED COUNTRIES

The UN established the "least developed country" status in 1971 to recognise states that "are deemed highly disadvantaged in their development process, for structural, historical and also geographical reasons."[138] LDCs face a greater risk of deeper poverty and remaining in a situation of underdevelopment. More than 75% of the LDCs' population still live in poverty. The following three criteria are used to determine LDC status: (1) per capita income (gross national income per capita); (2) human assets (indicators of nutrition, health, school enrolment and literacy); and (3) economic vulnerability (indicators of natural and trade-related shocks, physical and economic exposure to shocks, and smallness and remoteness).[139]

Thirty-three of the world's 46 least developed countries are in Africa (Figure 18), highlighting the persisting need to increase development and uplift the region's population from poverty. Three African countries have graduated from LDC status since the UN began to recognise LDCs: Botswana (1994), Cape Verde (2007), and Equatorial Guinea (2017).[140] Angola, São Tomé, and Príncipe are expected to graduate from LDC in 2024.[141]

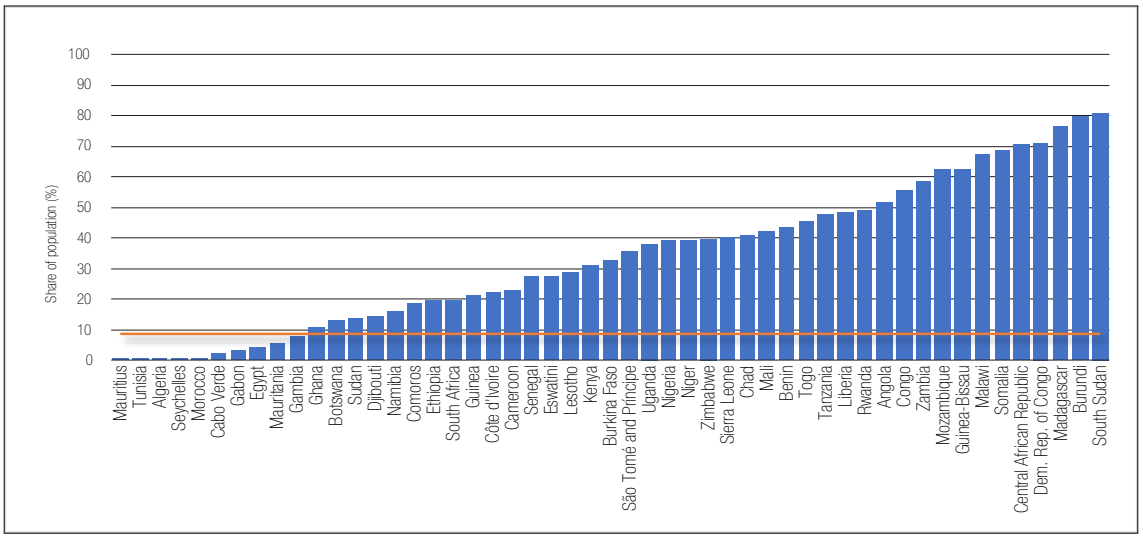
Figure 18. Map of the world's least developed countries.

Source: UNCTAD. Map of the least developed countries. (Accessed 14 Jul 2022).

[138] UNCTAD. n.d. UN recognition of the least developed countries.
[139] UNCTAD. n.d. UN recognition of the least developed countries.
[140] UNCTAD. n.d. UN recognition of the least developed countries.
[141] United Nations. Committee for Development Policy. 2021. List of Least Developed Countries.

Extreme poverty is an income below the international poverty line of $1.90 per day. Before the COVID-19 crisis, over 445 million people in Africa—equaling 34% of the region's population—lived below the poverty line, nine times the average for the rest of the world. When COVID-19 broke out in 2020, about 30 million more Africans fell into extreme poverty. Most of the poverty in Africa is concentrated within the Sub-Saharan region, with Central Africa having the highest excessive poverty rate of 54.8%.[142] However, when looking at individual countries, the poverty rate can be much higher, such as in South Sudan, which has a poverty rate of over 80%. North Africa, on the other hand, met the SDG target of a poverty rate below 3% in 2019. Figure 19 shows the poverty rates for African countries in 2019.

Figure 19. Share of the population in African countries that lives under the extreme poverty line ($1.90 per day) in 2019. Also included is the share of the world population living under the extreme poverty line.



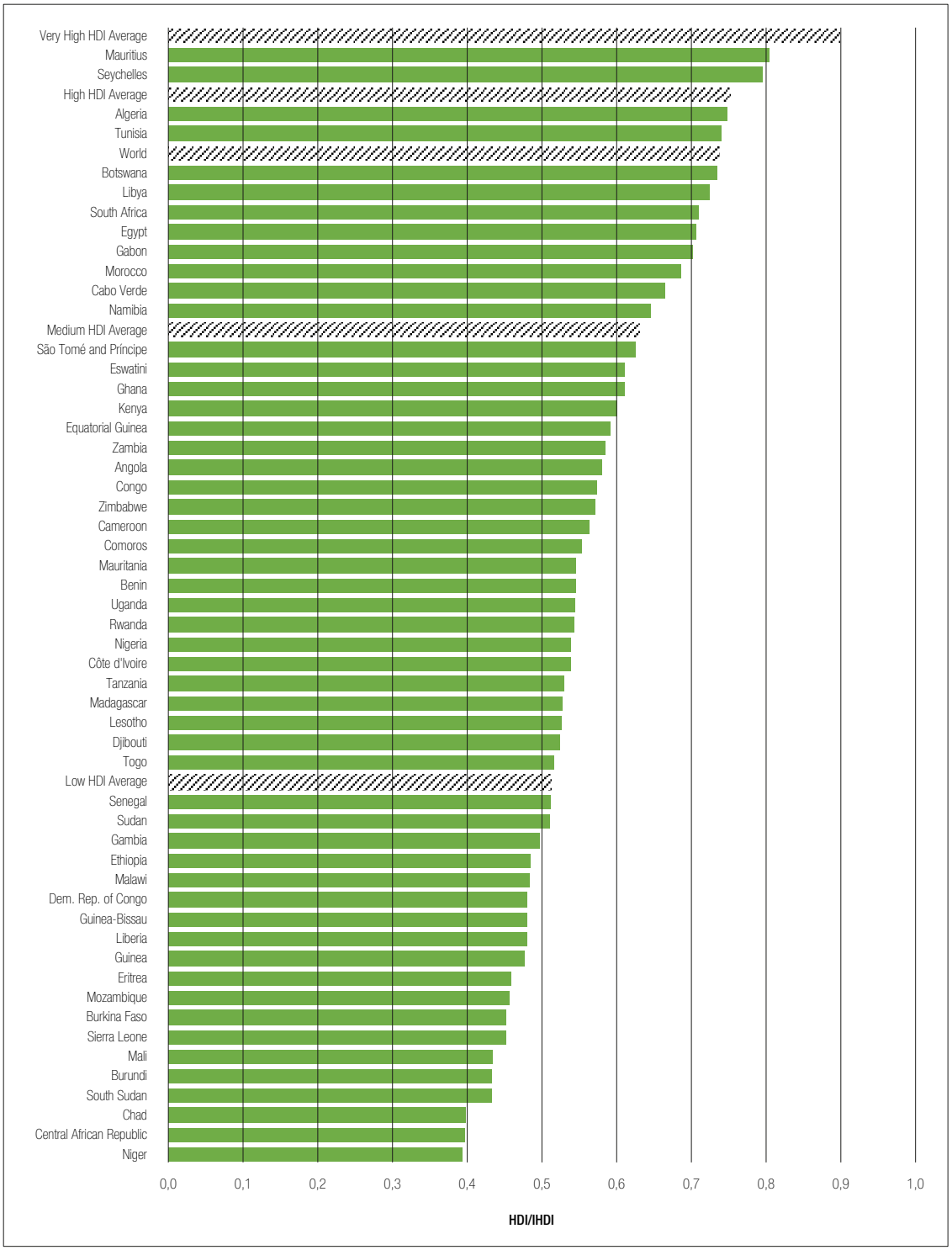
Source: Authors' own elaboration based on data from OurWorldinData and the World Bank Database.

SOCIAL DEVELOPMENT

The Human Development Index (HDI) is a metric that can be used to assess policy and governmental priorities. It is calculated considering three dimensions: health, education, and standard of living. Health is measured by life expectancy at birth; education is measured by the mean years of schooling for adults aged 25 years and older and expected years of education for children of school entering age; and standard of living is measured by gross national income per capita.[143] In 2019, 30 of the 33 countries in the low human development group were from Africa. Fourteen were in the medium human development group, while eight were in the high human development group. Only one African country qualifies for the high human development group. While the HDI by itself does not specify inequality, gender disparity, or poverty, it can be used as a snapshot to assess the extent of development in countries regarding the overall well-being of their citizens. Figure 20 shows the HDI for countries in Africa.

[142] Enoch Randy Aikins and Jacobus Du Toit Mclachlan. 2022. Africa is losing the battle against extreme poverty.
[143] UNDP. n.d. Human Development Index (HDI).

Figure 20. HDI for countries in Africa (2019). No HDI was provided for Somalia.



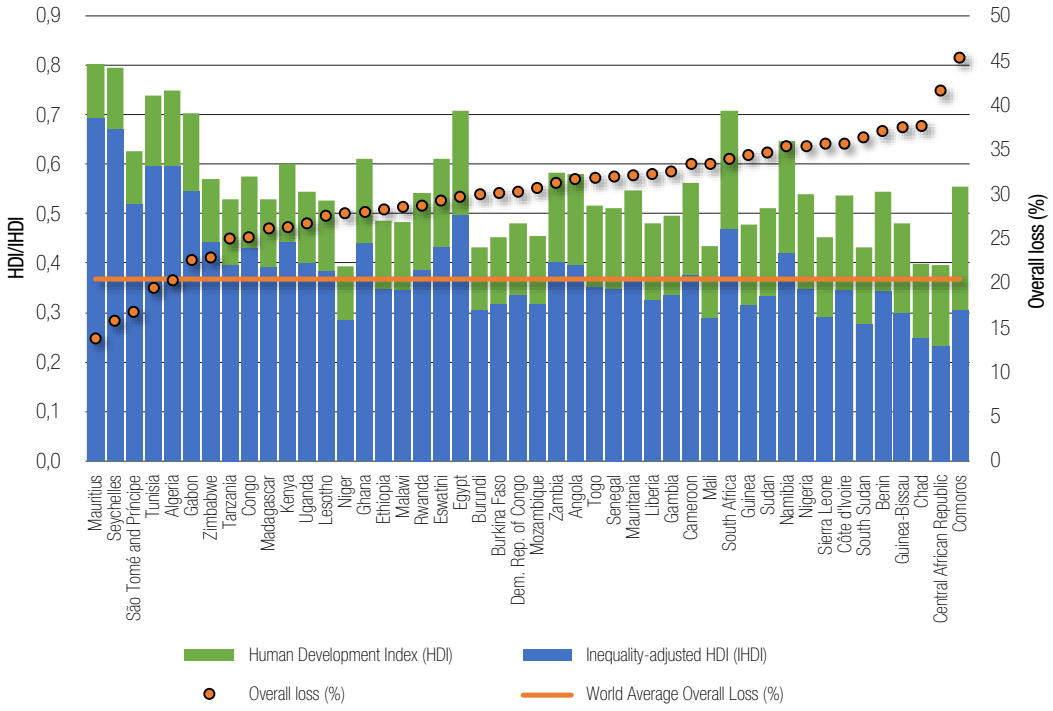
Source: Authors' own elaboration based on data from UNDP's Human Development Report 2020: Table 1.

INEQUALITY

While the HDI alone does not illustrate inequality, the inequality-adjusted human development index (IHDI) shows how much inequality is present in a country. The IHDI is obtained by decreasing each HDI dimension, i.e., health, education, and standard of living, according to the level of inequality in the country. In other words, if there is no inequality in the country, the IHDI value would equal the HDI value. On the other hand, the higher the inequality, the larger the deviation would be.[144]

In Africa, a high percentage loss in the HDI when inequality is accounted for is observed in many African countries. Figure 21 compares African countries' HDIs with their IHDIs in 2019.

Figure 21. HDI and IHDI in African countries (2019). Countries for which IHDI was not provided are Botswana, Libya, Morocco, Cape Verde, Equatorial Guinea, Djibouti, Eritrea, and Somalia.



Source: Authors' own elaboration based on data from UNDP's Human Development Report 2020: Table 3.

[144] UNDP. n.d. Inequality-Adjusted Human Development Index (IHDI).

LABOUR RIGHTS

African governments are firmly committed to improving and accomplishing laws that ensure labour rights. 53 out of 54 African countries have ratified the Forced Labour Convention (1930 No. 29), the Abolition of Forced Labour Convention (1957 No. 105), and the Discrimination (Employment and Occupation) Convention (1958 No. 111). In addition, 52 countries have ratified the Right to Organize and Collective Bargaining Convention (1949 No. 98); 51 have ratified the Equal Remuneration Convention (1951 No. 100); 50 have ratified the Worst Forms of Child Labour Convention (1999 No. 182); 49 have ratified the Minimum Age Convention (1973 No. 138); and 48 have ratified the Freedom of Association and Protection of the Right to Organize Convention (1948 No. 87).[145]

However, national laws and policy enforcement still need to be stronger in some labour areas. For example, effective implementation of laws and policies regarding wages, social security, occupational safety and health, forced and child labour, migrant workers, human resource development, maritime activities, fishing laws, and the rights of indigenous people is still a matter of concern. Consequently, the African labour landscape still harbours discrimination, fosters stereotypes, and a recurrent lack of coherence and adequate enforcement of national equality policies.[146]

For decades, forced labour has been a painful and persistent reality in Africa. Forced labour in the continent is often unrecognised and accepted by society mainly because it is a direct consequence of poverty and a traditional form of servitude. Indeed, men, women and children continue to be exploited in domestic servitude, farming (including the cocoa industry), fishing, and construction sectors. Due to these circumstances, in 2012, Africa held the second highest prevalence rate of forced labour victims globally, reaching 3.7 million victims of forced labour in the continent, only after the Asia-Pacific region, which accounted for 11.7 million. But, considering that many victims are part of the informal economy, the accurate estimation could be higher.[147]

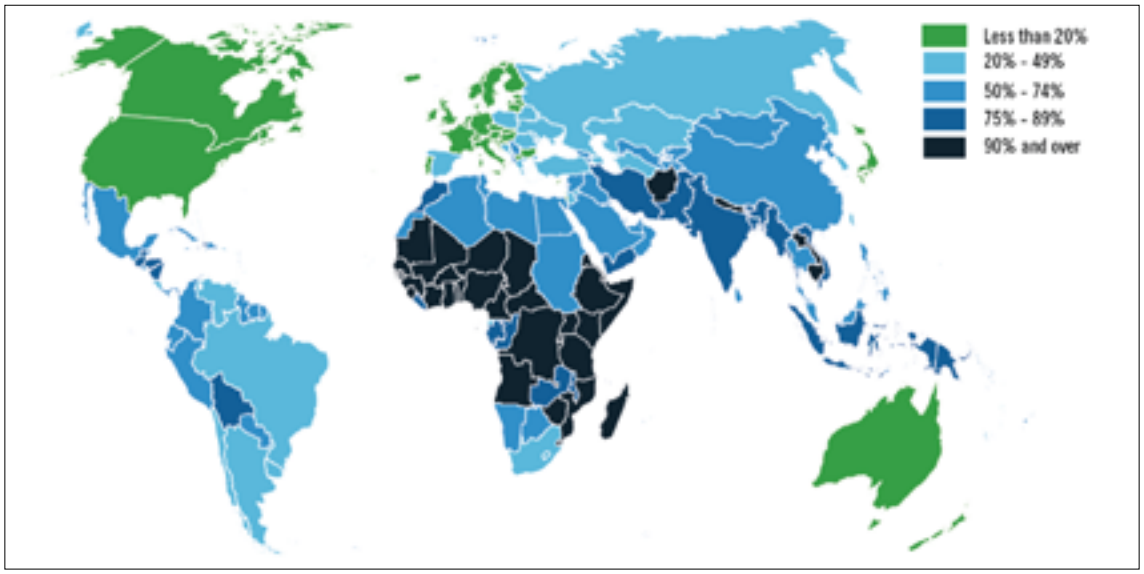
Efforts to eradicate child labour in Africa have not been sufficient. By 2016, one-fifth of all African children (72.1 million) were involved in child labour, with nearly half working in hazardous spaces. In Sub-Saharan Africa, child labour increased over the 2012 to 2016 period, partly due to the fragile state institutions operating in the African countries. The agriculture sector holds Africa's most significant share of child labour, accounting for 61.4 million children (85%). The service sector is second, 'employing' 8.1 million children (4%). Third, the industry sector accounts for 2.7 million child labourers (4%) working in factories.[148]

INFORMAL LABOUR SECTOR

In 2018, the International Labour Organisation (ILO) calculated that nearly 86% of the employed population in Africa was part of the informal economy, including agriculture activities (the highest share at a global level). As shown in Figure 22, Western, Eastern and Central African countries show the highest share of informal employment, accounting for 92.4%, 91.6% and 91.0%, respectively. Southern Africa is the only sub-region with less than 50% of its employed population participating in the informal economy, accounting for 40.4%.[149]

[145] ILO. n.d. Labour standards in Africa.
[146] ILO. n.d. Labour standards in Africa.
[147] ILO. 2012. ILO Global Estimate of Forced Labour: Results and Methodologies.
[148] ILO. Child labour in Africa.
[149] ILO. 2018. Women and men in the informal economy: a statistical picture.

Figure 22. Share of informal employment in total employment, including agriculture sector.



Source: ILO. 2018. Women and men in the informal economy: a statistical picture.

Informal sector workers lack "decent working conditions", such as fair compensation, safe working conditions, equal treatment, access to social protection systems for workers and their families, professional development opportunities, and freedom of expression and association.[150] Table 4 reveals that across all African sub-regions (except for Northern Africa), women's share in the informal economy is higher than that of men.

Table 4. Informal employment rate by sex: female and male, including agriculture.

Sex	Africa	Northern Africa	Central Africa	Eastern Africa	Southern Africa	Western Africa
Female	89.7%	62.2%	95.2%	94.0%	42.4%	95.0%
Male	82.7%	68.5%	87.1%	89.1%	38.4%	89.8%

Source: ILO. 2018. Women and men in the informal economy: a statistical picture.

[150] European Commission. Employment and decent work.

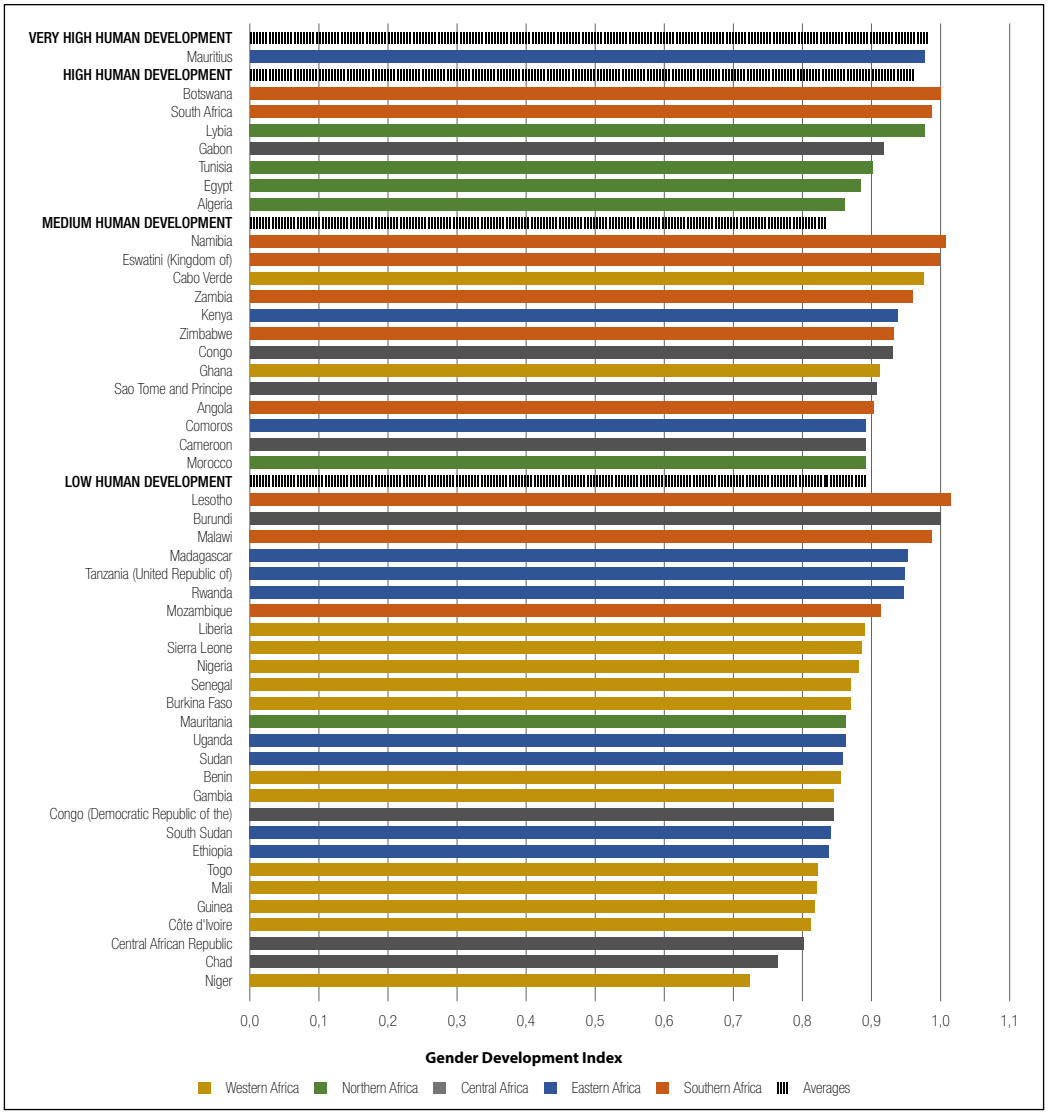
As discussed in the upcoming subsection, the data show that women living in Northern African countries hold better working and professional development conditions.

OPPORTUNITIES FOR WOMEN

In the last two decades, African countries, by large, have significantly improved their gender indexes,[151] with increased and better opportunities for women's well-being. Figure 23 shows the Gender Development Index (GDI) of all African countries with available data in 2019. The GDI represents the ratio of female to male HDI. This measures three key dimensions of human development: health (analyzed by the life expectancy at birth), education (analyzed by the expected years of schooling for children and the mean years of education for adults ages 25 years and older), and standard of living (analyzed by the national income per capita).

A GDI near or over 1 means that women have achieved the same or better development conditions as men regarding health, education and personal incomes. Out of the 48 African countries assessed, only five have reached a GDI equal to, or over 1. 18 countries have a GDI over 0.9. The rest show a GDI below 0.9, with Niger in the last ranking position (0.72). The region with the most significant gender disparity is Western Africa. On the contrary, Southern Africa is the best-positioned region regarding women's equality.

Figure 23. Gender Development Index of African countries with available data by 2019.



Source: Authors' own elaboration based on data from UNDP's Human Development Report 2020: Table 4.

[151] UNDP. 2016. Africa Human Development Report 2016.

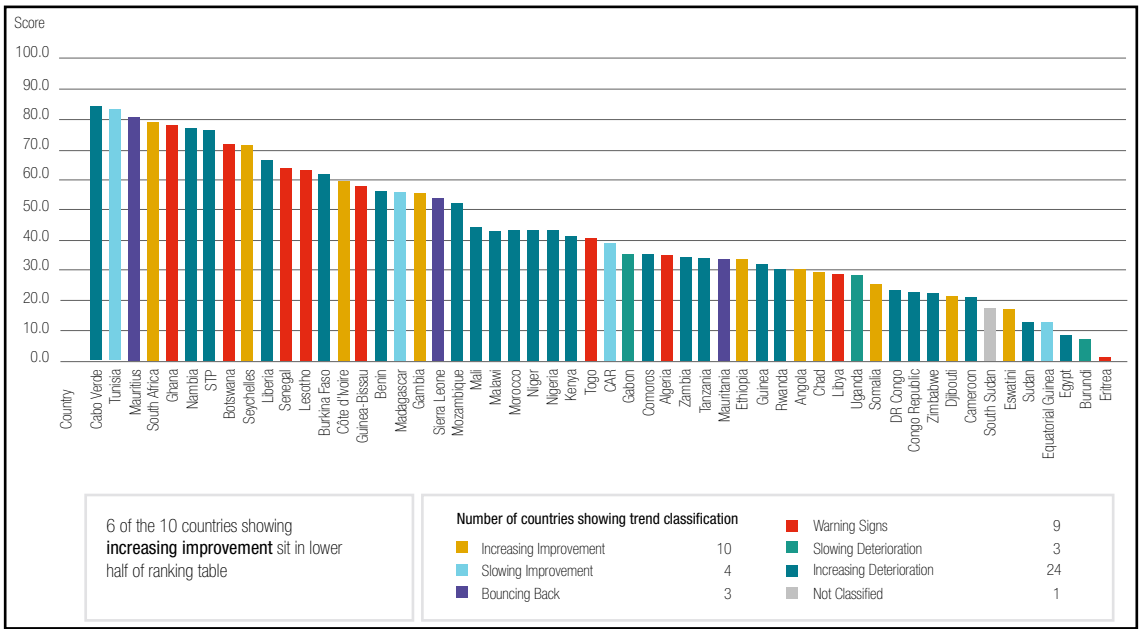
Although the gap between women and men has been reduced in Africa, gender equity has not been reached. Figure 23 also shows that over half of African countries (most in Western Africa) are still considered low human development nations. This has import and implications for sectors such as education, where African women are expected to receive an average of 8.7 years of formal education, versus very high-development countries where women are expected to study for an average of 16.6 years. This disparity is further exacerbated in South Sudan, Chad, and Niger, where women's schooling is less than six years.[152]

Likewise, although women's enrolment in the labour force has increased in Africa in the last decades, few women hold senior positions. A study carried out in Sub-Saharan countries concluded that 33% of women are in senior roles, with countries –such as Burkina Faso, Botswana, Côte d'Ivoire and Togo– where the number of men and women in senior positions is almost equal, and other countries –such as Malawi, Gambia and Mali– where less than 20% of senior roles are women held. This disparity is evident in the political system as well. While women in Rwanda, Mozambique, South Africa and Namibia constitute over 46% of political power positions, less than 20% of women are seniors in ministries and parliaments in half of the Sub-Saharan countries.[153]

CIVIL SOCIETY PARTICIPATION

Civil Society participation is key for Africa. Of the four categories assessed by the 2020 Ibrahim Index of African Governance (IIAG), 'Participation, Rights & Inclusion' is the lowest-scoring, with an average score of 46.2 out of 100 points. Within this category, 'Participation' is the lowest ranking, showing a decline of -2.2 points between 2010 and 2019.[154] 'Participation' is composed of four primary indicators: freedom of association and assembly, political pluralism, civil society space, and democratic elections.[155] Per Figure 24, 27 out of 54 African countries reveal a decline, while only 14 nations manifest improvements. These results demonstrate that half of the African countries are regressing in public participation and creating a space for participation and dialogue in the political processes.

Figure 24. Participation scores & trend classifications by 2019.



Source: Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance. Index Report.

[152] World Economic Forum. 2021. Global Gender Gap Report 2021.
[153] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance. Index Report.
[154] Mo Ibrahim Foundation. 2022. 2020 Ibrahim Index of African Governance. Methodology.
[155] Mo Ibrahim Foundation. 2022. 2020 Ibrahim Index of African Governance. Methodology.

'Civil Society Space' is the most deteriorated indicator between 2015 and 2019. Civil society and non-governmental organisations face two significant obstacles in Africa: (a) an increased number of restrictions and (b) a high level of repression and persecution of leaders.[156] According to Amnesty International, in recent years, the Togo government stopped financing and granting license renewals to several NGOs. In contrast, the Ugandan government suspended 54 organisations under the suspicion that they did not comply with adequate policies. Amnesty International also revealed that NGOs in Zimbabwe were ordered to submit work plans to authorities before carrying out their activities.[157] This situation reflects the overall diminished freedoms African have experienced since 2010.[158]

Political parties have also faced curtailed rights, such as less free operation and access to state resources (state-owned media and finance campaigns). Thus, while democratic elections processes have improved during the last decade, since 2015, the "integrity of elections and the functioning of election monitoring bodies" have declined.[159]

EXTERNAL CONTEXT

COVID-19

The COVID-19 pandemic impacted countries worldwide, leading to increased vulnerability due to increased unemployment, economic hardships, and of course, the significant public health crisis, the discussion of a just transition becomes even more critical. According to ILO, 14% of worldwide working hours (400 million full-time jobs) were lost in the second quarter of 2020 relative to the last quarter of 2019.

The Covid-19 pandemic halted and even reversed many positive development trends in Africa. Africa's gross domestic product (GDP) contracted by 2.3% in 2020, plunging it into its first economic recession in 25 years. Recovery, however, has been stronger than expected. According to the International Monetary Fund (IMF), sub-Saharan GDP growth is estimated at 4.5%.[160] The impact of the pandemic on growth has varied substantially across the continent, and the hardest on economies were those that substantially rely on commodity exports and tourism. As global oil prices fell, the top-ten fossil fuel exporters, which account for around half of Africa's GDP, saw their contribution to Africa's GDP shrink by 2% in 2020.

The economic shock of the pandemic hit the poorest people hardest. In 2021, more than 40% of sub-Saharan Africans lived in extreme poverty. This economic down spiral is exacerbated by increasing government debt, which was already climbing in Africa before the pandemic. However, now many countries face the risk of default due to the dual economic crisis. In sub-Saharan Africa, debt rose from around 35% of GDP in 2014 to 55% in 2019 and more than 60% in 2020 – the highest level in almost two decades.[161]

Currently, as countries move from immediate relief to recovery and, over the longer term, reform their economic systems, there is increased pressure to use the lessons learned in COVID times to ensure a recovery process that is inclusive of considers vulnerable communities, including those most affected as a result of the pandemic. There are also several lessons from the Covid 19 pandemic to draw from in planning a just transition. The pandemic highlighted the importance of underscoring equity issues regarding COVID; this meant equitable distribution of vaccines, access to medical treatment, and access to remote or online education. The pandemic revealed that inequality affects those at the bottom of the social strata and the entire social fabric. This overarching lesson has spurred international cooperation and collaboration- the ability to come together toward a common goal has become a reality.[162] This could be tapped into as countries shift toward a low-carbon, climate-resilient society.[163] The pandemic also revealed that no one can be left behind and that there must be social, community, and individual buy-in.

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[156] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance. Index Report.
[157] Amnesty International. 2021. African Regional Overview.
[158] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance. Index Report.
[159] Mo Ibrahim Foundation. 2020. 2020 Ibrahim Index of African Governance. Index Report.
[160] IMF. 2022. Regional Economic Outlook Sub-Saharan Africa. A new shock and little room to maneuver.
[161] Heitzig, Chris, Aloysius Uche Ordu, and Lemma Senbet. 2021. Sub-Saharan Africa's debt problem. Mapping the pandemic's effect and the way forward.
[162] Jhon Morrisey and Patrick Heidkamp. 2022. Sustainability after COVID-19: pillars for a just transition.
[163] WEF. 2021. 5 Key Lessons from COVID 19 recovery.

AFRICA AND THE RUSSIA-UKRAINE CONFLICT

Africa has significant exposure to variations in global prices of food commodities, as it is highly dependent on imports. According to the United Nations Food and Agriculture Organisation (FAO), in recent years, the continent has imported more than 30% of its cereals demand; in North Africa, the share is more than 50%. As a result, the Russian invasion of Ukraine and the subsequent price spikes in cereals has significantly impacted Africa. The rising prices of mineral nitrogen-based fertilisers have also negatively affected agriculture in Africa. Countries that rely on imported fertiliser remain highly exposed to price volatility; the burden of higher subsidy costs can strain fragile government balance sheets, while the ability to pass on costs in the form of higher food prices may be limited by a lack of purchasing power.

It is expected that Russia's invasion of Ukraine and related inflation may push more than 25 million additional sub-Saharan Africans to extreme poverty by the end 2022.[164] Mounting inequalities are adding to existing civil conflict, social unrest, and political instability in several countries, with protests over prices already unfolding in Morocco, Egypt, Kenya, Tunisia and Sudan.

Soaring international food and fuel prices are causing severe economic hardship in the African countries most heavily dependent on imports. Surging global prices for fuel and food due to Russia's invasion of Ukraine are adding to the economic duress across Africa. The prices of liquefied petroleum gas (LPG) increased by more than 60%, and diesel doubled in some countries, such as Nigeria, over the year to April 2022. Retail price controls have prevented higher wholesale prices of natural gas and electricity from being passed on to consumers but have added to the financial difficulties of utilities and governments. Disruptions to wheat and other food supplies from Ukraine and Russia have caused international prices to soar.

Many African countries rely heavily on fuel and food imports, with net imports reaching over 5% of GDP in several countries in 2020. Many of these countries have depleted their fiscal reserves – drained by Covid-19-related emergency support, measures to make fuel and food more affordable, and increased the cost of servicing debt.

CONCLUSION

Although not exhaustive, this section has aimed to provide a glimpse into Africa's current circumstances to offer a starting point not just for the types of transformations that countries will need to undertake towards sustainable development but also for the kinds of considerations that need to be made to make these transformations just.

Considering this context, a just transition in Africa aims to achieve prosperity by building climate resilience and reducing GHG emissions. The region's high poverty rates and low development underscore the need for African countries to increase development and achieve prosperity. However, the traditional development path that today's developed countries undertook relied heavily on fossil fuels to support nations' economic growth. Given the current climate situation, this path is not an option for Africa. Instead, this region faces the challenge of designing a tailor-made model for the economy towards sustainable development, prioritising renewable energies over fossil fuel exploitation to achieve prosperity and reduce inequality. In light of this, the needed transition in Africa should pursue not only the transformation of the energy system and the economy but also the transformation of the socio-economic circumstances faced by the African population.

[164] Iryna Sikora and Daryna Grechyna. 2022. Consequences of the Russian-Ukrainian war for African countries.

Africa's exposure and vulnerability to the adverse impacts of climate change should also be significantly considered in the region's transformation. Although African countries have played a small role in causing climate change, they must still embed in their development pathways ways to build climate resilience and minimise the negative consequences of climate change on their populations.

Governments will play a significant role in effecting this transformation. Governments should assess the robustness of the regulatory framework, i.e., their current policies and institutional framework, i.e., how the government is made up, its integrity, and how the ministries collaborate to reach a common goal. Though reforms have been taken up in the past, more than reforms will be needed to implement a just transition. Instead, a transformation is necessary, where a wholly new approach with long-term and widespread goals guides the creation of new policies and the organisation of government institutions. This transformation shall aim to take care of people and the environment as much as it takes care of the economy.

The following section delves into general considerations to achieve a just transition in Africa. Although more in-depth analyses will be needed to understand each sub-region or country's circumstances and the strategies that need to be employed to enact a just transition, this section highlights some commonalities with respect to just transition in the region.

5. JUST TRANSITION IMPLICATIONS IN DIFFERENT AFRICAN CONTEXTS AND ECONOMIC SECTORS

Africa has considerable reserves of fossil fuels—oil, coal, natural gas, etc. The future of fossil fuels in Africa is uncertain, especially if the continent adheres to the global climate commitments and pushes for a low-carbon, climate-resilient development path.[165] Africa's ability to economically develop without fossil fuels is highly contested, as are the specifics of what constitutes an effective energy mix at the regional, national, and subnational levels. The conditions for a fossil-fuel phase-out plan in the continent are also debated, particularly as fossil fuels and countries' individual circumstances differ widely. The concept of leapfrogging, or the potential to skip a fossil fuel economic path and directly invest and build an economy reliant on renewables, is also raised. Africa is touted as being particularly well placed to leapfrog due to its young, quickly adapting population and the overwhelming push to increase energy access, among other key reasons.[166]

To deepen this discussion, in this report, the African continent is divided into two main groups: a) fossil-fuel-dependent countries and (b) non-fossil fuel-dependent countries. Dividing the continent this way enables us to provide a more comprehensive view of what a just transition would entail in different contexts. While recognizing that a just transition will inevitably be shaped by a country's "socio-economic, political ambition and current dependence on fossil fuels,"[167] categorizing countries reveals commonalities among countries facing similar challenges and opportunities.

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[165] Financial Times. 2022. Can Africa Grow Without Fossil Fuels?
[166] David Vetter. 2021. Africa Could Be Locked into Fossil Fuel Future.
[167] IRENA. 2020. The Renewable Energy Transition in Africa. Country Studies for Côte d'Ivoire, Ghana, South Africa, Morocco and Rwanda.

FOSSIL FUEL-DEPENDENT COUNTRIES

The dependence of a country on fossil fuels can be framed in the following ways:

I. Financial dependency
II. Energy dependency
III. Employment dependency

The presence of any combination of these three types of fossil fuel dependence in a country can make the country's socio-economic landscape vulnerable to transitions away from fossil fuels. These types of fossil-fuel dependency will be discussed in further detail in the rest of the subsection. Table 5 summarises relevant figures for five African countries where at least one type of fossil-fuel dependency is exhibited.

Table 5. Examples of fossil fuel-dependent countries in Africa.

COUNTRY	NIGERIA	EQUATORIAL GUINEA
Emissions ($MtCO_2eq$, 2019)[168]	354.33 $MtCO_2eq$	15.24 $MtCO_2eq$
Emissions per capita (tCO_2eq, 2019)[169]	1.76 tCO_2eq	11.24 tCO_2eq
GDP main economic sectors (%, 2021)[170]	• Agriculture: 23.36% • Industry: 31.41% • Services: 43.79%	• Agriculture: 2.63% • Industry: 51.32% • Services: 46.26%
Contribution of fossil fuel to GDP (%, year)	6.33% (oil industry) (2nd quarter of 2022)[171]	60% (oil and natural gas industry) (2015)[172]
Fossil fuel imports (Mt, year)[175]	8.91 Mt (2019)	0.0 Mt (2020)[176]
Export structure by product group (2020)[177]	• Fuels: 90% • All food items: 4% • Manufactured goods: 4% • Other: 3%	• Fuels: 93% • Manufactured goods: 4% • Other: 3%
NDC unconditional mitigation goal (%, baseline year, target year)	20%, 2018, 2030	20%, 2010, 2030
NDC conditional mitigation goal (%, baseline year, target year)[178]	47%, 2018, 2030	50%, 2010, 2050
NDC unconditional key measures (%, MtCO2 of mitigation target)	• End gas flaring; • Implement off-grid solar PV of 13GW; • Install efficient gas generators; • Achieve 2% annual energy efficiency improvements; • Shift transport from car to bus; • Improve the electricity grid; • 1/3 of farmers switching to climate-smart agriculture; • Reforestation.[179]	• Design of an Energy Law; • Renewable energy deployment (wind, solar, and hydropower); • Boost public transportation; • Implementation of the REDD+ Initiative; • Implementation of NAMAs in the AFOLU sector; • Implementation of climate-smart agriculture measures aimed to ensure food security and economic diversification; • Energy efficiency measures in the industry sector; • Build waste management facilities.[180]
Just Transition and NDC	Nigeria's updated NDC (2021) briefly mentions "green jobs and a just transition" as co-benefits of implementing mitigation measures in the energy sector.[184]	Ghana's INDC (2015) does not include a perspective on just transition or any of its related topics (e.g. green jobs, gender equality, consultation processes, among others).[131]

[168] Climate Watch. Historical GHG Emissions (total). (Accessed 29 Sept 2022).
[169] Climate Watch. Historical GHG Emissions (per capita). (Accessed 03 Oct 2022).
[170] Mariam Saleh (Statista). 2022. Agriculture sector as a share of GDP in Africa 2021, by country; The Global Economy (The World Bank). 2022. Share of industry - Country rankings; Mariam Saleh (Statista). 2022. Service sector as a share of GDP in Africa 2021, by country; Agriculture includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production; Industry comprises mining, manufacturing, construction, electricity, water, and gas; Services include retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services.
[171] National Bureau of Statistics. 2022. Nigerian Gross Domestic Product Report Q2 2022.
[172] U.S. Energy Information Administration. 2017. Equatorial Guinea.
[173] Lars Kamer. 2022. Share of the oil and gas industry in Angola's GDP 2010-2021.
[174] IISD and GSI. 2022. South Africa's Energy Fiscal Policies: An inventory of subsidies, taxes, and policies impacting the energy transition.
[175] NationMaster. 2022. Imports of Fossil Fuel. (Accessed 03 Oct 2022).

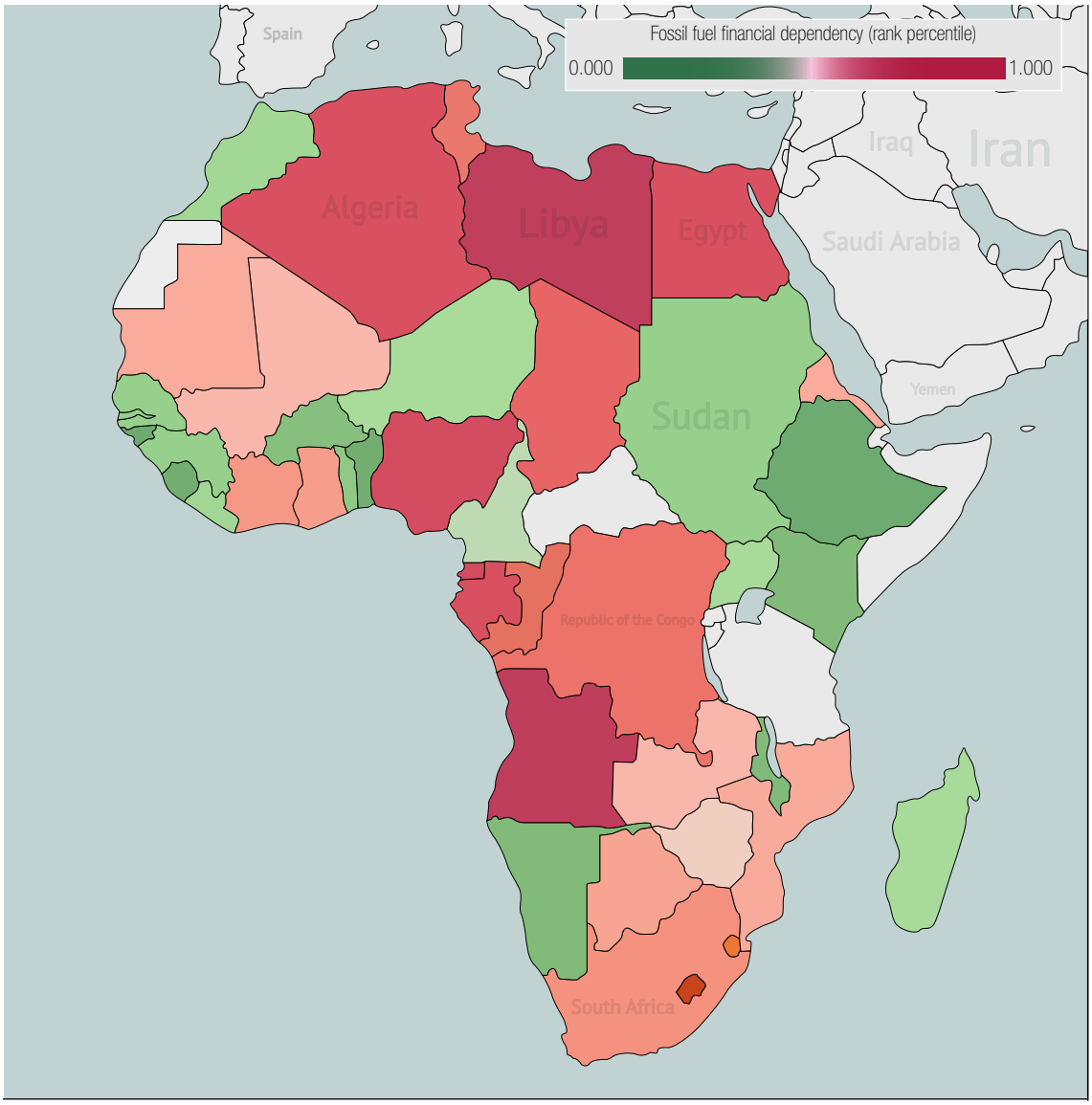
ANGOLA	SOUTH AFRICA	MOROCCO
128.29 $MtCO_2eq$	562.19 $MtCO_2eq$	91.15 $MtCO_2eq$
4.03 tCO_2eq	9.60 tCO_2eq	2.50 tCO_2eq
• Agriculture: 9.02% • Industry: 43.39% • Services: 47.49%	• Agriculture: 2.43% • Industry: 24.46% • Services: 62.75	• Agriculture: 12.65% • Industry: 26.81% • Services: 49.14%
28.9% (oil industry) (3rd quarter of 2021)[173]	2% (fossil fuel industry) (2019/2020)[174]	--
7.29 Mt (2019)	37.35 Mt (2019)	25.27 Mt (2019)
• Fuels: 92% • Ores and metals: 4% • Manufactured goods: 4% • Other: 1%	• Manufactured goods: 37% • Ores and metals: 31% • All food items: 12% • Other: 12% • Fuels: 8%	• Manufactured goods: 72% • All food items: 22% • Ores and metals: 4% • Other: 1%
15%, BAU scenario, 2025 21%, BAU scenario, 2030	Annual GHG emissions in a range from: • 398-510 Mt CO_2-eq (2021 – 2025). • 350-420 Mt CO_2-eq (2026 – 2030).	18.3%, BAU scenario, 2030
25%, BAU scenario, 2025 36%, BAU scenario, 2030	--	45.5%, BAU scenario, 2030
• Renewable energy deployment (38.41%): ~ Biomass plants: 500 MW. ~ Mini-hydro: 100 MW. ~ Hydroelectric stations: 700 MW. ~ Large- and small-scale solar plants (PV): 206 MW. ~ Wind farms: 100 MW. • Composting of municipal solid waste: 500 ton/day (13.13%); • Reforestation: 227,000 ha (6.45%); • Reduce flaring: 295 MMSCF/day (42.35%).[181]	• 50% reduction in the energy consumption of public buildings, 20% of municipal services, and 33% of new household appliances; • Installation of 6 GW solar power plants; • 17.8 GW of renewable energy generated by independent power producers; • Improve productivity and Soil Organic Carbon stocks in 6'000,000 ha of cropland; • Rehabilitate and sustainably manage 6'892,006 ha of land (forest, grassland, savanna); • Divert 40% of waste from landfill by 2025 and 55%.[182]	• Renewable energy deployment (wind, solar, and hydropower): 49.7 $MtCO_2$ (2020/30); • Energy efficiency measures in the industry and residential sectors: 25.7 $MtCO_2$ and 18.4 $MtCO_2$ (2020/30), respectively; • Energy efficiency measures in the cement and phosphate industries: 11 $MtCO_2$ and 53.7 MtCO2 (2020/30), respectively; • Waste management measures: 11 MtCO2 (2020/30); • Implementation of sustainable agriculture measures: 32.5 $MtCO_2$ (2020/30).[183]
Angola's updated NDC (2021) mentions that all climate change-related actions will promote gender equality in consultation processes.[132]	South Africa's updated NDC (2021) places just transition "at the core of climate action." Accordingly, the government will keep implementing measures for "workforce reskilling and job absorption, social protection and livelihood creation […], and diversifying coal-dependent regional economies."[185]	Morocco's updated NDC (2021) briefly touches on respect for human rights and gender equality as relevant elements in climate action. In addition, consultation processes to develop this document engaged indigenous peoples and local communitiess.[186]

[176] CIA. 2022. Equatorial Guinea: Energy. (Accessed 03 Oct 2022).
[177] UNCTAD. 2020. Country profile: General profile. (Accessed 30 Sept 2022).
[178] Data on NDCs were collected from the NDC Registry of the UNFCCC.
[179] UNDP NDC Support Programme. 2021. Nigeria Green Jobs Assessment Report: Measuring the socioeconomic impacts of climate policies to guide NDC enhancement and a just transition.
[180] Ministerio de Pesca y Medio Ambiente. 2015. Contribuciones previstas y determinadas a nivel nacional (Contribuciones Nacionales) (CPDN).
[181] Ministério da Cultura, Turismo e Ambiente. 2021. Nationally Determined Contribution of Angola 2021.
[182] Department of Forestry, Fisheries and the Environment. 2021. South Africa's 4th Biennial Update Report to the UNFCCC.
[183] Royaume du Maroc. 2021. Contribution Determinée au Niveau National – Actualisée.
[184] Federal Ministry of Environment. 2021. Nigeria's Nationally Determined Contribution.
[185] Department of Forestry, Fisheries and the Environment. 2021. South Africa: First Nationally Determined Contribution under the Paris Agreement.
[186] Gender Climate Tracker. 2022. Morocco: Analysis of updated NDC.

FINANCIAL DEPENDENCY

Financial dependency on fossil fuels can be defined through the country's total company investment in USD and the percentage of fossil fuel rents by GDP.[187] This can reveal the country's economy's vulnerability when fossil fuel industries are phased out. The more significant these industries contribute to GDP, the larger the revenues lost will be, which can lead to overall economic decline and impacts throughout the socio-economic landscape. Figure 25 shows the countries that are most financially dependent on fossil fuels. Countries in North Africa—except Morocco—are economically reliant on fossil fuels. Outside of this region, Nigeria, Angola, Equatorial Guinea, and Gabon have also been found to be dependent on fossil fuels financially.[188]

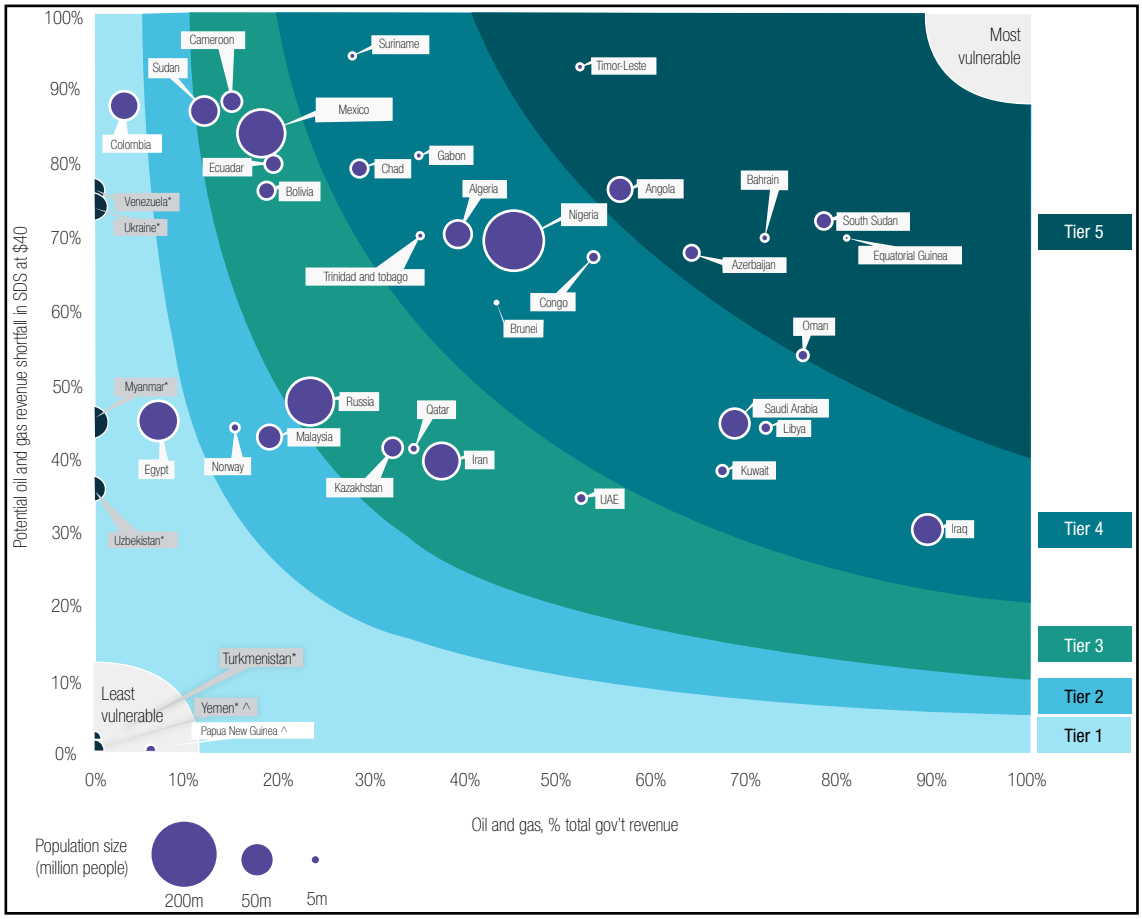
Figure 25. Fossil fuels financial dependency (rank percentile) of African Union states (average data 2011-2020). RED indicates HIGHEST fossil fuel dependency and GREEN indicates LOWEST. Fossil fuels financial dependency is defined as company investment in USD, and the percentage of fossil fuel rents by GDP.



[187] Darren McCauley, Kerry Andrea Pettigrew, Iain Todd, Tedd Moya Mose, and Tracy Humby. 2022. Assessing national performance on delivering a just energy transition in Africa: A Deeper analysis of the African Union member states 2010-2020 through global data.
[188] Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.

Despite, or due to, volatile prices, oil and gas development is likely to continue in Africa. Some estimates state that 10% of oil and 9% of natural gas production globally will come from Africa by 2035 unless a substantial shock to the current energy and economic system and investments to support renewables happen now.[189] At the same time, it is evident that a transition towards a low-carbon economy is inevitable, leading Africa's oil-producing countries to deprioritize further development in this sector to limit their risk of having stranded assets.[190] Considering a 1.65°C global warming scenario (50% probability) and a flat, accurate long-term oil price of $40 per barrel, Figure 26 forecasts the revenue shortfall for the main African oil- and gas-producing countries by 2040. This projected deficit has been categorized into five tiers: <5% (tier 1), <10% (tier 2), <20% (tier 3), <40% (tier 4), and >40% (tier 5). For countries that have not diversified, have failed to reinvest in social safety nets adequately and, or are undergoing political or social instability, the impacts of a transition can be detrimental, pushing them further into debt and exacerbating their[191] political instability. According to Carbon Tracker, Equatorial Guinea, South Sudan, and Angola are the most vulnerable African countries to a decarbonisation process.[192]

Figure 26. Vulnerability of main oil- and gas-producing countries to low oil and gas demand and population size.



Source: Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.

[189] The Guardian. 2022. Africa must forgo gas exploration to avert climate disaster.

[190] Stranded assets are investments whose value falls (or 'sunk' assets whose profitability is lower than expected). These are assets that have been prematurely retired, and may be subject to costly retrofitting.

[191] IEA. 2022. Africa Energy Outlook 2022.

[192] Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.

The path towards a low-carbon and climate-resilient future may put further pressure on government spending and impact development priorities. In Nigeria, for example, petroleum exports make up 90% of the government's total export revenues.

What is concerning for many fossil fuel-dependent countries as they look toward a just transition is how to most effectively and efficiently manage stranded assets. Likely, assets for these countries' fossil fuel-intensive operations have long been a part of the country's economic landscape. For example, power plants can be found in countries where fossil fuel-fired electricity generation has become a mainstay. As African countries aim to advance development, energy demand to power this development will increase. Pressured by heightened energy demand, countries that have relied on fossil fuel-fired electricity generation may push for the continued construction of power plants. Because power plants typically have lifespans of decades, the development of these assets in the near future can lead to economic losses as countries shift towards electricity generation powered by renewable energy, which will require different technology altogether, rendering assets used for fossil fuel-fired electricity generation to be stranded or obsolete. Investments are thus at risk. Fossil fuel-dependent countries should thus be wary of constructing new fossil fuel assets since the urgency of climate action will likely push for clean energy development before the projected end of their lifespan.

At the same time, existing assets will also need to be addressed. Planning policy and financing of these stranded assets must be addressed to ensure an effective transition. Pure divestment poses risks, including risks to energy security, if green alternatives have not been developed. In addition, divestments may lead to state bailouts, thus drawing funds away from social programs that seek to help people experiencing poverty.[193]

One proposed way to finance the move away from stranded assets is through "phase-down finance." Through phase-down finance, financing is not entirely taken away from these operations. Still, access is made stricter, contingent on the adherence of the emitting assets to pre-agreed Paris-aligned decarbonisation trajectories. Moreover, phase-down finance can compensate the entity for lost economic value due to the earlier closure if they abide by emission-reducing pathways—something that simple divestment does not aim for.

Although there are vast differences, nuances and particularities between fossil fuel-dependent countries in Africa, recognizing the extent to which they have diversified their economies helps to understand the trajectory they might follow in a path toward low-carbon climate-resilient development. African oil- and gas-producing countries rely on oil and gas exports for more than 50% of their total export revenues.[194] Even when fossil-fuel-dependent countries in Africa, especially those with more developed economies such as South Africa and Nigeria, can draw on some of the just transition lessons from similarly positioned countries in Europe or the Americas, they will still have to forge their path towards just transition.

ENERGY DEPENDENCY

Even if economic activity and revenues within a country are not significantly linked to fossil fuel industries, a country can still depend on fossil fuels through energy dependency. This can be defined as coal, gas, oil, and oil shale/sands production and total consumption, electricity and heat output, imports and exports.[195] Figure 27 shows the fossil fuel energy dependency of countries in Africa. Many countries financially dependent on fossil fuels are also energy dependent on them, such as North Africa (except Morocco, which imports 90% of its energy needs and is thus not financially reliant on fossil fuels)[196] and countries such as Nigeria and Angola. Countries such as Gabon and the Democratic Republic of Congo are not as energy dependent on fossil fuels as they are financially dependent. In contrast, countries such as Africa and Mozambique are more energy dependent on fossil fuels than they are financially.

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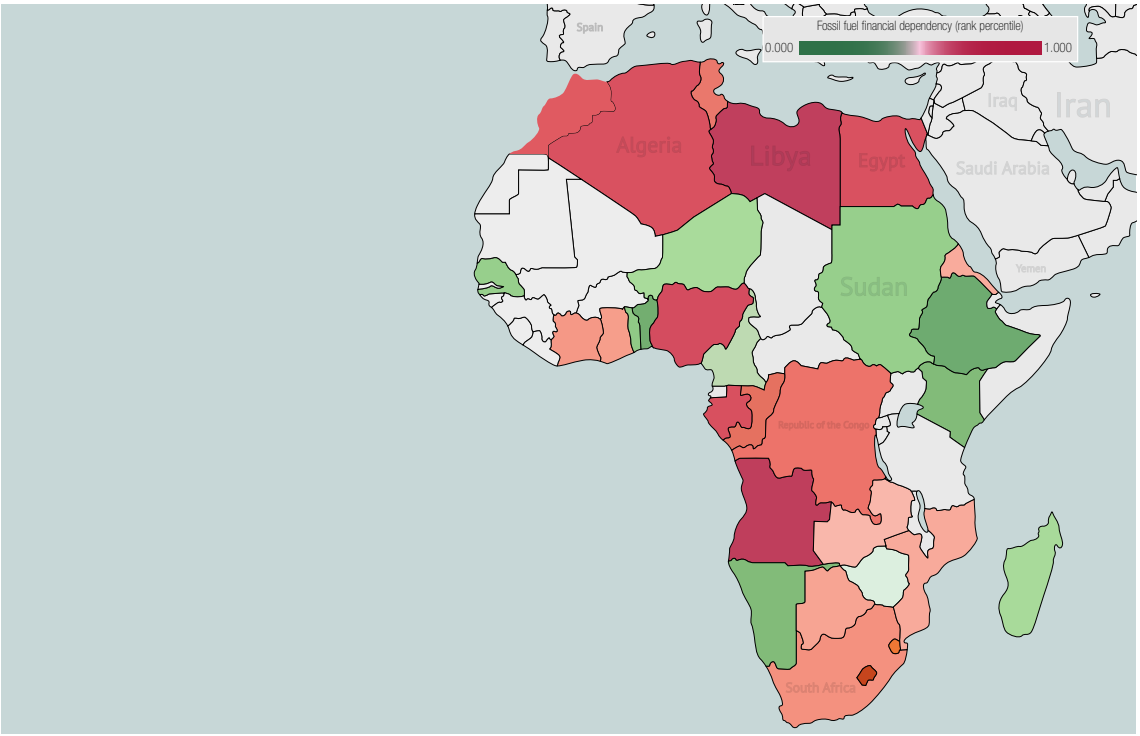
[193] E. Tyler and C. Renaud. 2022. What is 'Phase Down Finance' and why it's better than divestment to achieve decarbonisation. World Economic Forum. 11 July.

[194] Acha Leke, Peter Gaius-Obaseki, and Oliver Onyekweli. 2022. The future of African oil and gas: Positioning for the energy transition.

[195] Darren McCauley, Kerry Andrea Pettigrew, Iain Todd, Tedd Moya Mose, and Tracy Humby. 2022. Assessing national performance on delivering a just energy transition in Africa: A Deeper analysis of the African Union member states 2010-2020 through global data.

[196] International Trade Administration. 2019. Morocco – Energy.

Figure 27. Fossil Fuel Energy Dependency (rank percentile) of African Union states (average data, 2011-2020). RED indicates HIGHEST fossil fuel energy dependency and GREEN indicates LOWEST. Fossil fuel energy dependency is defined as coal, gas, oil, and oil shale/sands production and total consumption, electricity and heat output, imports and exports (data from IEA 2021).



Source: Darren McCauley, Kerry Andrea Pettigrew, Iain Todd, Tedd Moya Mose, and Tracy Humby. 2022. Assessing national performance on delivering a just energy transition in Africa.

Because energy dependence, as defined here, can be due to various reasons, it will be essential to determine the specifics of a country's energy dependence to understand the potential impacts a transition away from fossil fuels can have on the socioeconomic landscape.

When it comes to countries with high fossil fuel production and consumption, stranded assets are also an issue. The same can be said for those with a high electricity and heat output powered by fossil fuels. As with countries with high financial dependency on fossil fuels, these countries should reconsider further constructing fossil fuel assets and find ways to manage existing assets towards early decarbonisation properly. Similarly, renewable energy generation will be a crucial step towards ensuring energy security for the populations in these countries.

Renewable energy also presents an opportunity for countries that rely on fossil fuel imports for their energy supply. By establishing renewable energy within, countries can become more independent energetically and financially, freeing themselves of the burden of foreign transactions to obtain fuels from other countries. Consequently, funds spent on foreign fossil fuels can be diverted to further efforts to support the people. In addition, the country's development of renewable energy industries can lead to more significant economic activity, leading to more jobs and higher quality of life for the people.

EMPLOYMENT DEPENDENCY

A country that sees a significant portion of its population employed in fossil fuel industries can also be considered vulnerable to the impacts of

a transition away from fossil fuels. Vulnerable industries include fossil fuel extraction and electricity generation powered by fossil fuels, but they can also include other industries along the fossil fuel value chain, such as transport. If these industries are well-developed in a country, they are expected to employ a significant number of people. The phase-out of one of these industries can lead to unemployment for these people. In addition, because these industries are linked along the value chain, the phase-out of one industry can lead to lower, if not the complete loss of, economic activity in other parts of the value chain, leading to further loss of employment.

Employment dependency also does not merely consider those workers directly employed by the fossil fuel industries but those in surrounding communities whose employment depends on the economic activity produced by the carbon-intensive operation. For example, fossil fuel extraction sites may have led to establishing a service industry in the surrounding areas supporting those working in extraction. This also considers informal workers directly employed by fossil fuel industries and those working in surrounding communities. Thus, the phase-out of carbon-intensive fossil fuels can impact livelihoods.

It is worth noting that the high dependence of a country on employment in fossil fuel industries can have a broader impact on the country's finances. If workers in these carbon-intensive sectors lose their source of income, they participate less in the economy through fewer taxes being paid and lower expenditures in general. This can thus have overarching impacts on the economy as a whole.

The loss of livelihoods will increase the risk of these workers and their families falling into poverty and suffering a lower quality of life. In addition, an overall loss of revenues leading to lower economic activity throughout the country can lead to further unemployment and lower quality of life. Thus, the transition away from fossil fuels in countries where employment is highly dependent must consider how workers can be supported before, during, and after the transition.

Unfortunately, data availability for employment dependence in a country on fossil fuels is underdeveloped. Substantial research needs to map the workers throughout these vulnerable sectors. Once this information has been obtained, a socio-economic impact assessment should be conducted to determine how vulnerable these communities are to the phase-out of a specific sector.

JUST TRANSITION CONSIDERATIONS

As fossil fuel-dependent countries in Africa engage with the just transition discourse, whether stemming from international pressures or due to internal pulls to pursue a more sustainable path forward, they must be able to address the expected and possibly also the unexpected impacts of decarbonisation. This means countries must be able to provide some guarantees for their citizens and possible investors that this transition will indeed distribute wealth. The economic growth that resulted from fossil fuel exploitation has yet to deliver on the promise of uplifting communities and eradicating poverty. In many instances, while countries' overall GDP increased, an uneven distribution of wealth created a significant wealth disparity and exacerbated poverty in the region.[197] For example, gas and oil reserves discovered in Africa between 2010 and 2015 have minimally contributed to meeting the continent's energy demand, boosting economic development, or reducing poverty.[198]

Table 5 summarises some mitigation actions the five highlighted countries have outlined in their NDCs. As these countries strive to fulfil their Paris-aligned climate goals, they must ensure the transition is just. Table 6 summarises these actions and presents the general impacts such actions may have on the socio-economic landscape. It also provides potential mitigation actions for these impacts to ensure a just transition for all. These do not represent the mitigation actions that countries considering carrying out similar climate actions should realize to further a just transition. Determining those actions will require adequate analysis of the country's specific context.

[197] Africa Centre for Energy Policy. 2020. 6th Africa Oil Governance Summit Report.
[198] Darren McCauley et al. 2022. Assessing national performance on delivering a just energy transition in Africa: A DeePeR analysis of the African Union member states 2010-2020 through global data.

Table 6. Potential socio-economic impacts of NDC actions and possible responses to support a just transition.

NDC ACTIONS	JUST TRANSITION IMPACT	JUST TRANSITION RESPONSE
• Early retirement of fossil fuel-fired power plants. • Renewable energy deployment: ~ Solar ~ Biomass plants ~ Mini-hydro ~ Hydroelectric stations ~ Large- and small-scale solar plants (PV) ~ Wind farms • Energy efficiency in industrial and residential sectors. • Shift transport from car to bus. • Improve electricity grid. • Composting of municipal solid waste. • Divert waste from landfill.	• Loss of jobs in the early retirement of fossil fuel-fired power plants. • Loss of jobs indirectly related to the fossil fuel industry, including jobs in the informal sector. • Stranded assets. • Energy security if fossil fuels do not provide alternative energy sources. • Increased electricity prices if renewables are unable to meet demand. • Increased social disruption (correlation between job loss and gender-based violence, decreased student school attendance and participation). • A renewable power plant may not easily replace a fossil fuel-fired power plant in a given location due to the scarcity of renewable energy sources, such as wind or sunlight, potentially stripping a community of a significant source of income. • Greater energy efficiency in some sectors may result in job displacement for redundant workers. • Energy efficiency upgrades may require financial capital that only wealthier building and homeowners can afford without enough economic incentives. • Lower-income communities may need help to afford housing in newer, energy-efficient buildings. Thus, They may continue to incur high heating costs from living in low energy efficiency residences and using inefficient energy appliances. Such energy poverty may thus be exacerbated if not enough financial support is provided. • Shift from cars to buses may cause employment needs in the manufacturing, assembly and maintenance of cars to shrink. Fewer parts and less maintenance will also affect the automotive industry's supply chain.	• Promote economic diversification and the development of green sectors to increase the number of decent jobs available for the people. This should consider existing sectors the country already relies on or new ones altogether. • Develop training and reskilling programs to enable impacted workers to adapt to clean energy and other green sectors. • Consider phase-down finance and other financing schemes to phase out existing fossil fuel assets responsibly. • Conduct adequate socio-economic impact assessments to understand how these climate actions can impact populations. • Increase investment in social capacity development programs that enhance or support local knowledge. • Increase the robustness of social protection programs to assist displaced workers and ensure that they do not fall into poverty during the transition. • Promote policies that guarantee 24/7 distributed energy.

NON-FOSSIL FUEL-DEPENDENT COUNTRIES

Countries that are considered not dependent on fossil fuels have no significant dependency on fossil fuels for the countries' finances, energy, or employment. Figure 25 shows that many countries in East and West Africa and island countries have little financial dependence on fossil fuels. Many of these countries are considered the least developed countries and have had minimal contributions to global GHG emissions. It will be necessary for these countries to achieve prosperity through economic development, ideally by taking on pathways that are not reliant on fossil fuels.

Non-fossil fuel-dependent countries are divided into two subcategories: those with significant fossil fuel reserves yet to be exploited and those with insignificant reserves. Table 7 summarises relevant figures for five African countries exhibiting either one of these situations.

Table 7. Examples of non-fossil fuel-dependent countries in Africa (both with yet-to-be-exploited fossil fuel reserves and those with insignificant reserves).

COUNTRY	MOZAMBIQUE	UGANDA
Emissions ($MtCO_2eq$, year)[199]	106.74 $MtCO_2eq$, 2019	59.15 $MtCO_2eq$, 2019
Emissions per capita (tCO_2eq, year)[200]	3.52 tCO_2eq, 2019	1.34 tCO_2eq, 2019
Least developed country?[201]	Yes	Yes
Small Island Developing State?[202]	No	No
GDP main economic sectors (%, 2021)[203]	• Agriculture: 23.9% • Industry: 19.3% • Services: 56.8% (2017)[204]	• Agriculture: 23.8% • Industry: 27.09% • Services: 41.94%
Electricity access (% of total population, year)[206]	35% (2019)	29% (2019)
Export structure by product group (2020)[207]	• Fuels: 35% • Ores and metals: 30% • All food items: 20% • Other: 6% • Manufactured goods: 5% • Agricultural raw materials: 4%	• Other: 51% • All food items: 36% • Manufactured goods: 13%
NDC unconditional mitigation goal (%, baseline year, target year)[208]	--	5.9%, BAU scenario, 2030
NDC conditional mitigation goal (%, baseline year, target year)	40 $MtCO_2eq$, BAU scenario, 2025	24.7%, BAU scenario, 2030

[199] Climate Watch. Historical GHG Emissions (total). (Accessed 29 Sept 2022).
[200] Climate Watch. Historical GHG Emissions (per capita). (Accessed 03 Oct 2022).
[201] UNCTAD. UN list of least developed countries.
[202] United Nation. List of SIDS.
[20] Mariam Saleh (Statista). 2022. Agriculture sector as a share of GDP in Africa 2021, by country; The Global Economy (The World Bank). 2022. Share of industry - Country rankings; Mariam Saleh (Statista). 2022. Service sector as a share of GDP in Africa 2021, by country; Agriculture includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production; Industry comprises mining, manufacturing, construction, electricity, water, and gas; Services include retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services.
[204] CIA. 2022. Mozambique: GDP composition, by sector of origin. (Accessed 03 Oct 2022).
[205] CIA. 2022. Madagascar: GDP composition, by sector of origin. (Accessed 03 Oct 2022).
[206] CIA. 2022. The World Factbook (Energy profile by country). (Accessed 03 Oct 2022).
[207] UNCTAD. 2020. Country profile: General profile. (Accessed 30 Sept 2022).
[208] Data on NDCs were collected from the NDC Registry of the UNFCCC.

SENEGAL	MADAGASCAR	SEYCHELLES
33.60 $MtCO_2eq$, 2019	40.22 $MtCO_2eq$, 2019	0.776 $MtCO_2eq$, 2019
2.06 tCO_2eq, 2019	1.49 tCO_2eq, 2019	7.95 tCO_2eq, 2019
Yes	Yes	No
No	No	Yes
• Agriculture: 15.32% • Industry: 24.67% • Services: 49.6%	• Agriculture: 24.0% • Industry: 19.5% • Services: 56.4% (2017)[205]	• Agriculture: 2.24% • Industry: 14.42% • Services: 67.14%
71% (2019)	39% (2019)	100% (2020)
• All food items: 32% • Manufactured goods: 25% • Other: 20% • Fuels: 16% • Ores and metals: 7%	• All food items: 40% • Manufactured goods: 30% • Ores and metals: 20% • Other: 10%	• All food items: 68% • Fuels: 18% • Manufactured goods: 14% • Other: >1%
5%, BAU scenario, 2025 7%. BAU scenario, 2030	--	--
23.7%, BAU scenario, 2025 29.5%, BAU scenario, 2030	14%, BAU scenario, 2030	26.4%. BAU scenario, 2030

COUNTRY	MOZAMBIQUE	UGANDA
NDC unconditional key measures (%, $MtCO_2$ of mitigation target)	• Promotion of renewable energy sources: hydro (68 MW), wind (240 MW), solar PV (420 MW). • Construction of 450 MW thermal power plants based on natural gas; • Replacement of 2,500,000 incandescent lamps with efficient lamps in all households; • Increase gas stove use. • Waste management measures; • Sustainable agriculture measures.[209]	• Sustainable land use and agroforestry measures (e.g. 40 million tree campaign since 2021); • Rainwater harvesting and improved irrigation systems to reduce new farmland expansion; • Sustainable production of wood fuel and improved charcoal kilns; • Promote tree plantations to fulfil timber commercial demand; • Promote, among households and institutions, clean cooking solutions and biomass use efficient technologies for stoves; • Improve cattle breeds and feeds, and water availability for livestock; • Improve national fleet fuel standards.[210]
Just Transition and NDC	Mozambique's updated NDC manifests that NDC implementation "will take into account the most vulnerable communities" and will "promote inclusive development" by "prioritising environmental integrity, human health, and green jobs creation." Alongside this, gender sensitivity will be strengthened through NDC-specific actions.[162]	During Uganda's updated NDC (2022) elaboration, consultation processes included representatives of youth and women groups and indigenous peoples. In particular, gender sensitivity was a criterion explicitly used to select and prioritize adaptation and mitigation measures included in the NDC and to design the NDC implementation plan.[163]

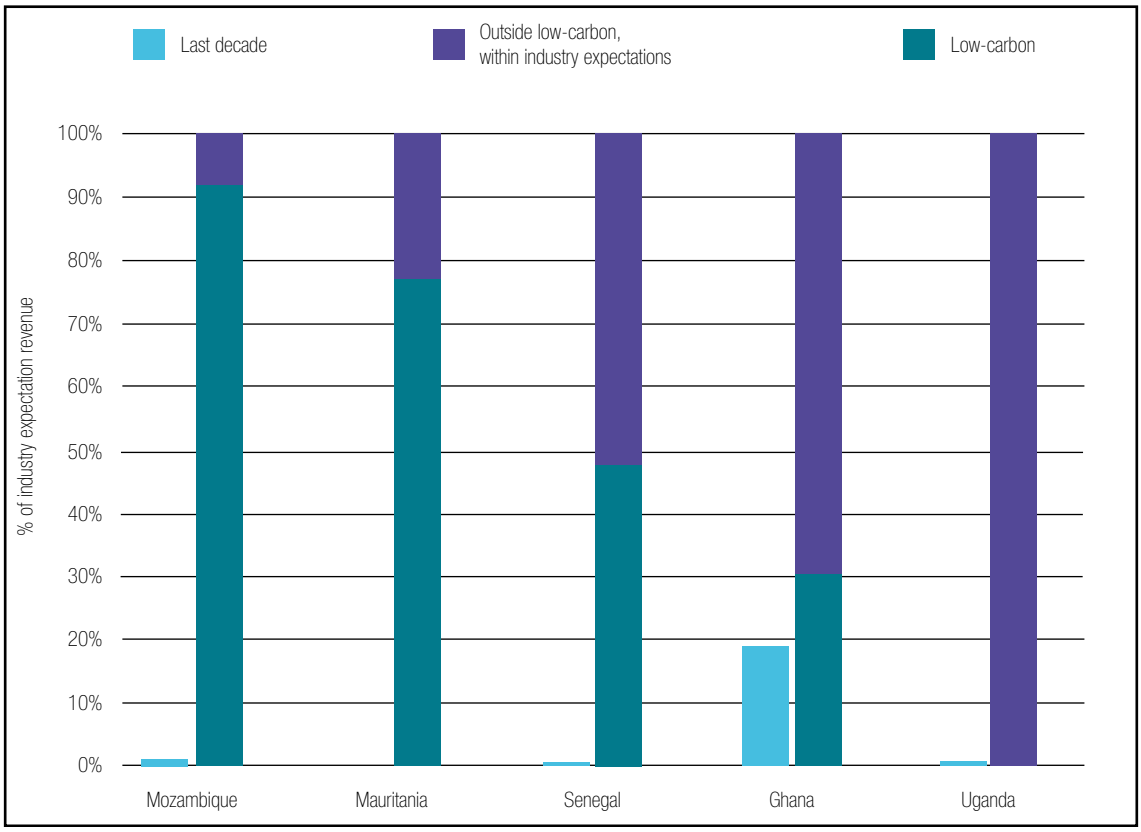
[209] Ministry of Land and Environment. 2021. Update of the First Nationally Determined Contribution to the UNFCCC (Mozambique): Period 2020-2025.
[210] Ministry of Water and Environment. 2022. Uganda: Updated Nationally Determined Contribution (NDC).
[211] Republique du Senegal. 2020. Contribution Déterminée au Niveau National du Senegal.
[212] République de Madagascar. 2015. Contribution Prévue Déterminée au niveau National (CPDN) de la République de Madagascar.
[213] Ministry of Agriculture, Climate Change and Environment. 2021. Seychelles' Updated Nationally Determined Contribution.
[214] Gender Climate Tracker. 2022. Senegal: Analysis of original NDC.

SENEGAL	MADAGASCAR	SEYCHELLES
• Increase renewable energy installed capacity to 699 MW by 2030; • Installation of 6.18 MW of off-grid solar plants; • Distribution of 800,000 improved cook-stoves annually till 2030; • Boost bio-digester installations (27,000 in 2030); • Promote bio-charcoal use; • Energy efficiency measures to save up to 627,028 GWh; • Substitution of clinker in the cement industry; • Assisted Natural Regeneration measures on 99,624 ha of cropland; • Reforestation/ restoration of 1,297 ha of mangrove and 21,000 ha of other species.[211]	Conditional measures: • Boost renewable energy (hydraulic and solar) to reach 79% of the energy mix; • 50% of households adopting improved stoves; • Implementation of climate-smart agriculture measures; • Arboriculture (5,000 ha/year since 2018); • Reforestation and conservation actions; • Biogas production from wastewater; • Compost production from organic household waste.[212]	Conditional measures: • Boost renewable energy, including marine technologies and bio-energy (biomass and waste-to-energy); • Shift progressively to low-carbon transport, including active mobility (walking and cycling), international maritime transport, and public transportation; • Use renewable energy to secure a sustainable and resilient water management system; • Ensure that sewage systems and wastewater treatment facilities include nutrients and energy recovery; • Integrate circular economy principles in the tourism sector.[213]
In its NDC (2020), Senegal's government argues that NDC measures implementation "should stimulate economic growth, create jobs and reduce poverty."[166] In addition, using modern energy technologies in homes "to reduce women's workload" and improving children's academic performance are also mentioned as NDC goals.[214]	Madagascar's INDC (2015) briefly points out that overall implementation, as well as monitoring and evaluation of the INDC, will "emphasize the participatory and inclusive process of all stakeholders".[165]	The consultation process to update Seychelles' NDC engaged women and youth representatives. Moreover, as part of the adaptation measures, the government of Seychelles is committed to "ensuring that agricultural resilience action is gender-sensitive, gender-responsive and gender-transformative to eliminate gender inequality and achieve a just agricultural sector".[166]

COUNTRIES WITH SIGNIFICANT FOSSIL FUEL RESERVES

Although countries with sizeable financial dependence on developed fossil fuel industries are concerned with losing current incomes, countries holding significant undeveloped fossil fuel resources (regarding the size of their economies) will be affected by losing potential cash flows.[215] This might be the situation in Mozambique, Senegal, and Uganda—so-called "newcomer countries" with little or no current oil and gas extraction in Africa.[216] Figure 28 illustrates the scenario for five countries in the continent that might lose potential revenues from fossil fuel production.

Figure 28. 2021-2040 government oil and gas revenues in low-carbon, industry expectations and last decade scenarios in five African countries with large yet-to-be-exploited fossil fuel reserves.



Source: Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.

[215] Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.
[216] Isabelle Geuskens and Henrieke Butijn. 2022. Locked out of a Just Transition: Fossil fuel financing in Africa.

To achieve a prosperous future, countries in this group are tempted to follow a business-as-usual, fossil fuel-reliant economic model. These countries can draw on neighbours' 'success stories', connections with known investors, and international or internal pressures to exploit their natural resources. The challenge for these newcomers is deciding on a fossil fuel-reliant future or to leapfrog and invest in renewable energy sources and adequate social protection to promote a just transition.

Required assets (e.g. energy plants) to initiate or expand fossil fuel exploitation will demand upfront investment for skills building and technology uptake, and they would be at risk of becoming stranded in the not-so-distant future. Alternatively, mounting evidence shows that renewable energy technologies are viable alternatives to oil and coal as cheap, abundant fuels to power African economies. Still, a low-carbon development path will also imply massive investment in Africa, where capital could be more plentiful, and efforts to reduce risk will be necessary.[217]

In an attempt to prepare for the transition, some countries have already started creating social safety nets linked to fossil fuels, but whose overarching goal is to improve social mobility and further inclusion. In Ghana, for example, the government has integrated strong social elements into its fossil fuel subsidy reform.[218] The reform was widely circulated with relevant stakeholders, including financing social measures from subsidy reform savings. For instance, they introduced a conditional cash transfer program to link fuel subsidy reductions to eliminating school fees for primary and secondary education, additional funding for the healthcare system, and a rise in the minimum wage. Furthermore, the National Petroleum Authority was established, an independent governing body comprised of government officials, trade union and oil company representatives, experts and some NGO representatives, and conducted a Poverty and Social Impact Assessment.[219]

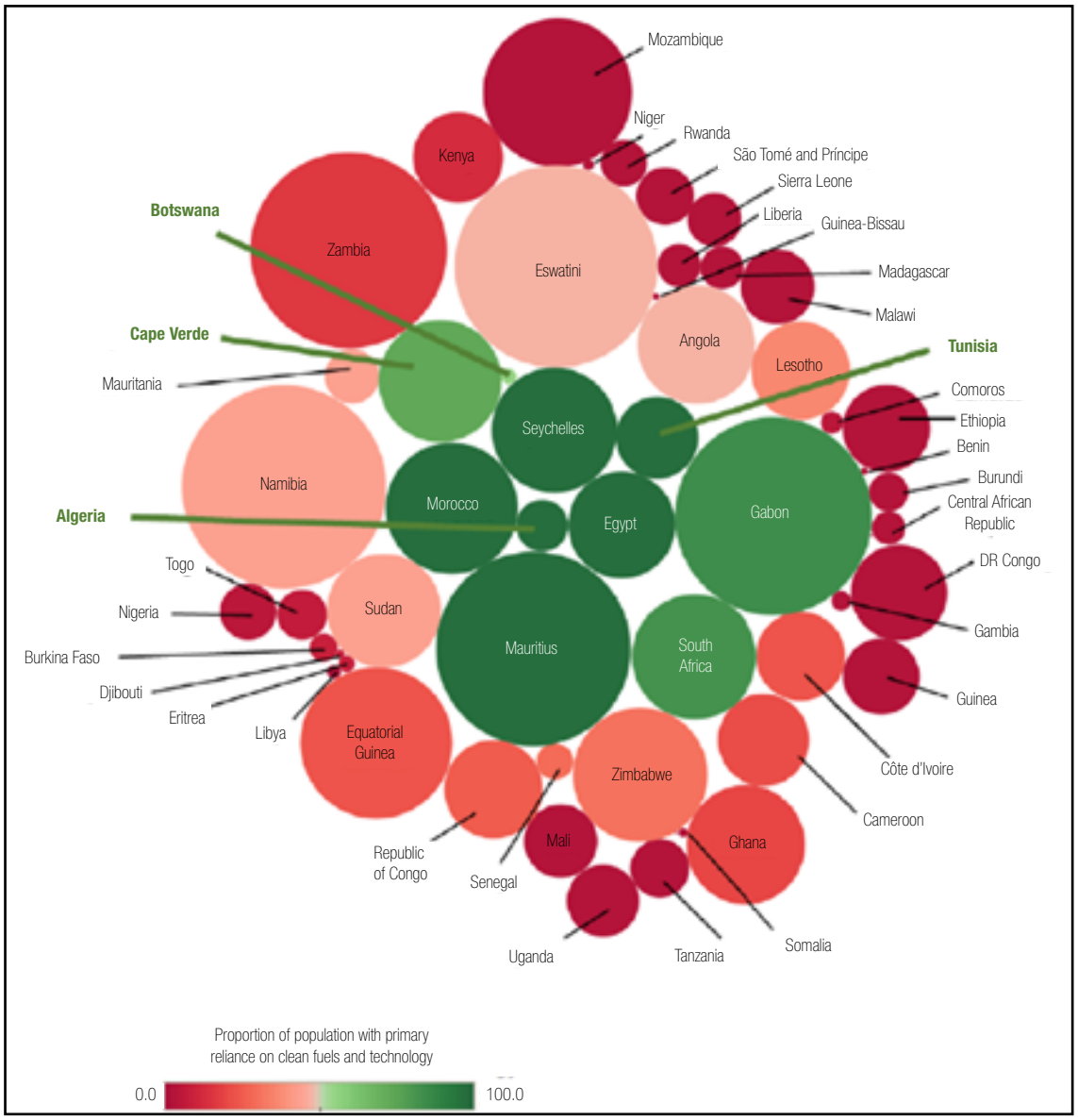
Some experts argue that preparation of this kind is since many countries could develop fossil fuel resources, especially in light of changing geopolitical circumstances; others argue for leapfrogging. These experts indicate that with the proper coordination, financing, and skills, African nations are likely to thrive and even lead in a low-carbon, climate-resilient development. Leapfrog advocates state that financing for renewable energy can be made available for initial investment, which would support both environment and people. Africa's young population and its trajectory with quick technological uptake, such as mobile financing and banking, make it a perfect candidate for novel technological enterprises.

COUNTRIES WITH INSIGNIFICANT FOSSIL FUEL RESERVES

This subgroup of non-fossil fuel-dependent countries comprises mainly island nation states, such as Seychelles, Mauritius, Cape Verde and Madagascar. These are economies minimally dependent on fossil fuels but highly dependent on the tourism industry. As a result, these countries often lead adaptation campaigns and highlight the significant impacts of climate change on island communities. This is exemplified in the continent's highest levels of installed renewable energy per capita (except Madagascar) since they attract high inward investment (Figure 29).[220]

[217] KfW, GIZ, and IRENA. 2021. The Renewable Energy Transition in Africa: Powering Access, Resilience and Prosperity.
[218] UNDP. 2021. Fossil Fuel Subsidy Reforms: Lessons and opportunities.
[219] Sangji Lee. 2022. Unpacking just transition: what is it and how can we achieve it in Africa?
[220] Darren McCauley et al. 2022. Assessing national performance on delivering a just energy transition in Africa: A DeePeR analysis of the African Union member states 2010-2020 through global data.

Figure 29. Installed renewable energy (Watts per capita) vs. primary reliance on clean fuels and technology (% of population).



Source: Carbon Tracker. 2021. Beyond Petrostates: The burning need to cut oil dependence in the energy transition.

The review for this group of countries is similar to those with resources but have yet to develop them. In both instances, there is limited, if any, fossil fuel exploitation. However, in the groups of countries mentioned here, the service industry—possibly also fishing, agriculture, and forestry—plays a significant role in the country's economy. This diversification must be up-scaled by incorporating other sectors, including renewable energy development and transportation. The potential for these countries to leapfrog is significant because they have already adapted and diversified their economies to various degrees. Moreover, African countries with the potential to leapfrog could collaborate, learn from one another, and develop large- and small-scale projects to ensure energy access, poverty reduction, and greater social inclusion.

JUST TRANSITION CONSIDERATIONS

Achieving a just transition in non-fuel fossil-dependent countries will also aim to distribute prosperity to all and leave no one behind. However, given that most countries in this group still have a low level of development—with many of them considered least-developed nations—driving development to achieve prosperity will be the priority for transformation. Ideally, this shall be accomplished without relying on fossil fuels to power development by leapfrogging to renewable energy. Thus, driving development will be the first step towards a just transition in non-fuel fossil-dependent countries.

Because these countries still find themselves at low levels of development, they will need financing and technical assistance from the outside. What is critical is that these countries provide suitable environments to attract investments from developed countries and other organisations. These include a stable political landscape, supportive policies for foreign investments, and a clear commitment to driving development through sustainable methods, among others. Table 7 shows some of the different sectors that non-fossil fuel-dependent countries rely on for their economy and how they are looking to advance climate action in their countries, as stated in their NDCs.

Countries must be mindful while pushing for development that transition considerations are made in the process. Disadvantaged communities such as women and indigenous groups need to be engaged in the process to reap the benefits of the prosperity promised by economic development.

Table 8 lists some ways countries can create an enabling environment to attract foreign investments and help ensure the country's fair distribution of prosperity.

Table 8. Ways to build an enabling environment for attracting foreign investments and for the fair distribution of prosperity in the country.

WAYS TO BUILD AN ENABLING ENVIRONMENT TO ATTRACT FOREIGN FINANCIAL AND TECHNICAL ASSISTANCE TO DRIVE DEVELOPMENT	WAYS TO BUILD AN ENABLING ENVIRONMENT FOR THE FAIR DISTRIBUTION OF PROSPERITY
• Establish a stable political landscape by fostering transparency and placing measures to deter corruption. • Establish a robust institutional framework that collaborates to drive development and ensure the just transition of the country. • Create new business models with highlighted social protection ensures the transition is just. • Create an attractive investment framework. • Incorporate climate-conscious and just transition considerations in development efforts. • Establish policies that will ease and aid investments. • Develop policies that will demonstrate social protection as a result of investments.	• Establish tripartite working groups to foster dialogue for the advancement of a just transition. • Engage disadvantaged communities in decision-making processes through adequate consultation. • Ensure the inclusion of capable members of disadvantaged groups in managerial positions to assist in directing benefits towards their communities. • Comprehensive mapping of relevant stakeholders when planning for new developmental endeavours. • Conduct adequate socio-economic impact analysis for new developments to identify risks to relevant stakeholders. • Foster transparency through effective communication. • Create simple yet effective avenues for filing grievances. • Create avenues for monitoring and reporting just transition efforts for improvement in the future.

Source: Authors' own elaboration.

The objective of dividing the continent illustrates how just transition considerations and possibilities differ in different contexts. The following section presents the impacts of a just transition on specific economic sectors. It focuses on pinpointing the challenges and opportunities to ensure that no one directly or indirectly involved in these sectors is left behind as the transition evolves.

THE AFRICAN DEVELOPMENT BANK GROUP'S ROLE IN A JUST TRANSITION

The African Development Bank Group works to "spur sustainable economic development and social progress in its regional member countries (RMCs), thus contributing to poverty reduction".[221] To ensure these remain at the forefront of their efforts, the African Development Bank Group has developed its definition of just transition as:

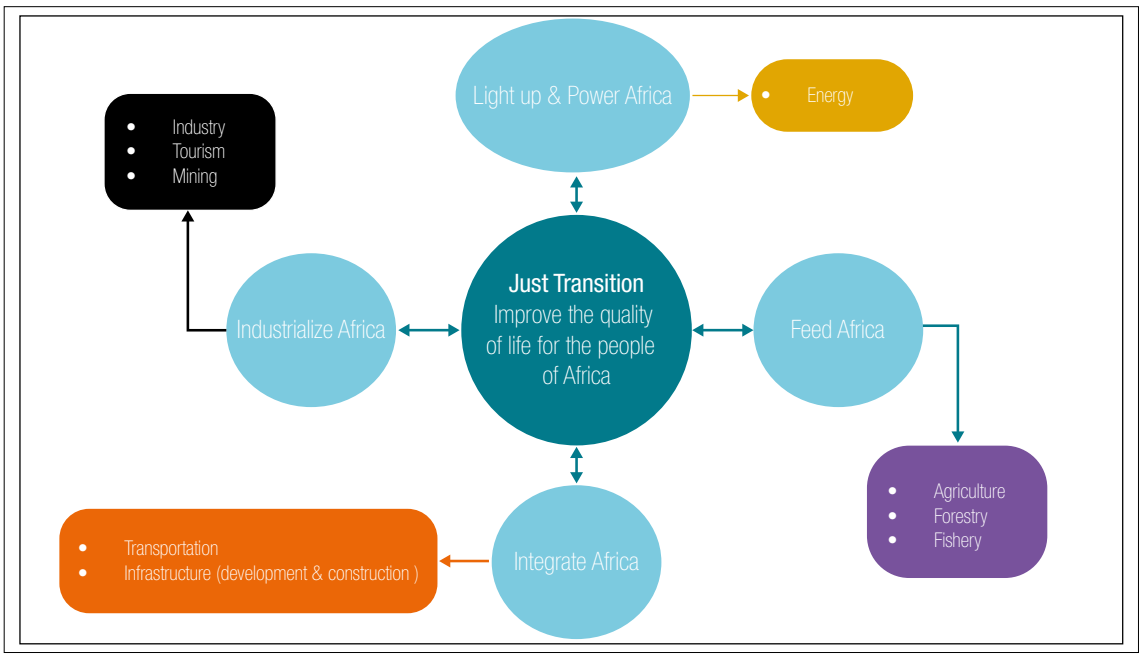
"A framework for facilitating equitable access to the benefits and sharing of the costs of sustainable development such that livelihoods of all people, including the most vulnerable, are supported and enhanced as societies transition to low carbon and resilient economies. A Just transition affirms Africa's right to development and industrialization based on the Paris Agreement negotiated language of equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances."[222]

This definition aligns with the Bank's Second Climate Change Action Plan (CCAP2), which provides insight into implementing national policies and programs, including national development and adaptation plans and nationally appropriate mitigation actions. The CCAP2 also illustrates how the Bank can advance its "High 5s Agenda" and describes the relationship between the High 5s and the Paris Agreement, NDCs, and development strategies. Moreover, the CCAP2 showcases opportunities which support adaptation, mitigation, and resilience in the context of the High 5s and addresses financial flow and enabling environments, including technology development and transfer, capacity building and other cross-cutting issues.[223]

Since the High 5s encompass the critical economic priority areas for the continent, it is essential to understand the impact, challenges and opportunities of just transition on these areas and the people that directly or indirectly rely on them. To provide a more comprehensive analysis, the High 5s are linked to specific economic sectors (Figure 30). While some economic sectors would fit into different or multiple High 5s, the corresponding analysis focus on the implications and potentials that must be considered due to a just transition deployment. The goal of just transition in the centre of the diagram is equated with the High 5 priority to improve the quality of life for the people of Africa since this overarching priority reflects the advances in the rest of the priorities. Specifically, this Hi5 priority aims to help the African population to overcome poverty by means of improving access to social and economic opportunities via job creation and skills building. Improving access to water and sanitation and improving healthcare systems are also crucial.

[221] AfDB. Mission & Strategy.
[222] AfDB. Just Transition Initiative to Address Climate Change in the African Context. (Accessed 24 Jul 2022).
[223] AfDB. Africa Thriving and Resilient: The African Development Bank's Second Climate Change Action Plan (2016-2022).

Figure 30. Economic sectors linked to High 5s.



Source: Authors' own elaboration.

The following analysis (Table 9 to Table 17) provides another way to understand the on-the-ground implications of a just transition and focus on the impacts on specific sectors, highlighting possible socio-economic ramifications and opportunities that may result. The objective of these tables is to show the implications of the transition and to identify what must be taken into account to ensure that no one is left behind and that the processes and outcomes of this shift are fair and just.

HIGH 5: LIGHT UP AND POWER AFRICA-ENERGY SECTOR

Energy access is considered a significant roadblock to development in Africa. Currently, energy development could be more sparse and distributed. Light up and power Africa seeks to increase energy production (including clean energy) and access and improve its affordability, reliability, and efficiency to guarantee, by 2025, universal access to modern energy in the whole continent.

Through this strategy, AfDB is significantly supporting the transition to a low-carbon and just development in Africa, given that energy is crucial for economic prosperity, job creation, and industrialization. Similarly, it is key for educational, health, and other social-wellbeing aspects.

Table 9. Energy sector: impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
ENERGY SECTOR		
• Distributed energy strategies —based on renewable energy resources— that reflect the local needs must be developed and maintained. • A low-risk investment environment for renewable energy must be promoted, and its success must be ensured with adequate tax and fiscal reforms. • Policy making to move away from fossil fuels must be participatory. • Fossil fuel industries should have a working phase-out/ energy mix plan. • Increasing fossil fuel production through new facilities must be avoided. • A fiscal reform that decreases energy subsidies both at the production and user fronts must be participatory, developed and supported. • Investment in energy-related capacity building must be designed and implemented in close collaboration with the academic sector.	• Loss of fossil fuel-related jobs. • Transformation of fossil fuel-related jobs. • Loss or reduction of jobs indirectly related to the fossil fuel industry, including informal sector jobs. • Potentially stranded assets. • Distributional impacts of carbon/oil/ fossil fuel pricing. • Negative socio-economic impacts of subsidies and other policy reforms. • Land use changes, re-zoning due to decommissioning or infrastructure development/ changes. • Loss of land/land tenure concerns. • Low initial investment. • Increased power prices if renewables are unable to meet demand. • Increased social disruption (correlation between job loss and gender-based violence/ decrease in student school attendance/ participation, etc.)	• Develop training and reskilling programs to enable impacted workers (direct, indirect and currently informal workers to benefit) to adapt to the upcoming energy sector. • Increase investment in social capacity development programs that enhance or support local knowledge. • Promote policies that guarantee 24/7 distributed energy. • Reconsider devolving decision-making and responsibility on infrastructure and distributive energy systems to local governments. • Support youth, women, indigenous peoples, and other marginalized groups as entrepreneurs in renewable energy-related industries. • Increase women's participation in leading roles within the energy industry. • Support the development of the national manufacturing sector to reduce foreign dependence on spare parts and repairs for the new energy plants and other premises.

Source: Authors' own elaboration.

HIGH 5: FEED AFRICA- AGRICULTURE, FORESTRY, AND FISHERIES SECTORS

Due to the more frequent events of droughts and floods attributable to climate change in Africa, increasing agriculture is critical to ensure food security, diversify economies and create overall social and economic stability. AfDB seeks to transform traditional agriculture into climate-smart agriculture to achieve this goal. This process will feed the continent's growing population and make Africa a net food exporter by 2025.

By capitalizing on Africa's agriculture potential, AfDB will contribute to generating resources, creating jobs, improving the lifestyles of women in agriculture, recovering lands that could be degraded by coal-mining activities and providing access to food for all, goals targeted by a just transition framework.

Table 10. Agriculture: impacts, socio-economic ramifications and opportunities

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
AGRICULTURE		
• Climate-smart agriculture programs that reflect the local needs reduce carbon footprint, and increase climate resilience must be created and supported. • Sustainable management projects that protect and restore natural systems must be supported. • Climate-conscious farming must be promoted, including curbing or eliminating the use of chemicals. • Land tenure issues must be addressed. • Support food diversification and the consumption of local products. • Irrigation and territorial development planning initiatives. • Promote a market for organic products and permaculture opportunities. • Provide adequate subsidies for farmers to cover losses due to the transition. • Implement early warning systems to help local communities prepare for hazardous climate-related events. • Improve weather data generation and collection in agricultural zones to better anticipate hazardous climate-related events that can negatively affect crops. • Design and implement policies that prevent large agricultural companies from monopolizing water resources.	• Large-scale technical strategies to reduce GHG emissions may affect smallholder farmers and rural communities. • Support for small scale and female farmers will likely require support and capacity building. • Include farmers and agricultural workers regardless of land tenure status. • New and different skill-building will be required. • Income to farmers may be disrupted. • Land value may be impacted. • Land use may change. • Technological solutions to farming only benefit wealthy farmers who can afford the technology and thus eliminates sources of livelihood for poor farmers, particularly women.	• Develop context-appropriate technology that is accessible to all. • Build on existing traditional/ indigenous/local knowledge of farming practices and techniques. • Design participatory policy to harness arable (to expand local, small-scale farming). • Improve farmers' wages and access to social security. • Assess impacts and plan at regional and national levels. • Link agriculture with other sectors and issues. • Link agriculture with climate policies: NDCs, NAPs. • Regulate corporate control/ power and the potential for monopolies in this sector. • Capacity building will be instrumental in developing a work base with the skills necessary to remain in rural areas (decreasing brain drain and migration to urban areas). • Reduce hunger and malnutrition in Africa. • Develop local food and beverage industries.

Source: Authors' own elaboration.

Table 11. Forestry: impacts, socio-economic ramifications and opportunities

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
FORESTRY		
• Develop and maintain programs to reduce the deforestation rate, including forest management. • Sustainable forestry practices and protected land areas must be ensured, and policies must be in place to support this process. • Provide sustainable energy solutions for people who depend on firewood for heating during cold winters. • Policies that uphold conservation and biodiversity must be developed and enforced. • The role of nature protection in climate change actions must be effectively communicated to local communities, and the benefits they receive highlighted. • Illegal logging must be stopped through effective government decisions and measures. • The agriculture frontier must not be allowed to expand into forests and other protected zones.	• Banning logging can lead to job losses and diminished revenues. • Banning deforestation takes away the ability of many communities that experience harsh and cold winters to gather firewood for heating. • The informal sector (mainly women) will likely be severely impacted if they cannot access the forest to father charcoal or non-timber forest products. • Communities adjacent to forests may suffer unintended effects, including increasing biodiversity (wild animals). • Landowners must be compensated if they cannot 'profit' from their land in timber sales. • Land tenure issues may arise.	• Design and implement social forestry programs. • Develop capacity building, re-skilling and re-training programs that can provide jobs and ensure forest health. • Develop mechanisms that ensure access to forests for non-timber forest products or medicinal plants. • Develop sustainable forestry practices and education centres to ensure current and future generations learn and benefit from forests. • Assess payment for ecosystem services schemes REDD+ or carbon offset schemes and ensure these are devolved to the community.

Source: Authors' own elaboration.

Table 12. Fisheries: impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
FISHERIES		
• Ensure that conservation and biodiversity protection policies are designed and implemented. • Promote local/traditional/ artisanal fishing practices. • Adopt sustainable certified practices and initiatives on fisheries. • Develop and uphold policies that restrict fishing and maintain/restore riverbeds, seas, deltas, riparian zones or other sensitive areas. • Ensure that mechanisms or institutions are in place to enforce legislation and safeguard sensitive areas.	• Loss or reduction of jobs associated with the existing fishing industry; will also impact informal workers- many of whom are women. • Women who are heavily involved in pre-and post-harvesting activities will likely be negatively impacted as their role in the community will change, and economically, they will lose income. • New sustainable practices may incur start-up costs that lower-wage-earning workers or informal workers may be unable to afford. • New techniques will require access to tools, funds, knowledge and technology that may not be available. • Job and income loss will increase unemployment in the immediate area. • Women and those indirectly impacted along the fisheries value chain will be affected.	• Develop capacity building and skills sharing to strengthen understanding of sustainable fishing practices and techniques. • Provide investments/grants for SMEs or other businesses that will promote or are related to sustainable fishing. • Promote local citizen science organisations to ensure environmental health is maintained. • Assists in remediation and other land/riparian rehabilitation projects, • Provide re-skilling of direct and indirect workers and upscaling of existing facilities.

Source: Authors' own elaboration.

HIGH 5: INDUSTRIALIZE AFRICA-INDUSTRY, TOURISM, AND MINING SECTORS

AfDB proposes a "green industrialization in Africa through efficient industry clusters and clean production", focusing mainly on reducing African energy intensity. This priority emphasizes economic diversification and its potential to create jobs and promote inclusive economic transformation through manufacturing. It aims to add value to Africa's domestic products and increase connections at the regional and global levels.

This industrialization process can only be reached by increasing the use of science, technology and innovation, all essential elements to lead the way to a low-carbon, resource-efficient, and climate-resilient development.

Table 13. Industry sector: impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
INDUSTRY SECTOR		
• Develop clear policies to increase energy and materials efficiency and circularity. • Push for the demand for sustainable materials. • Push for circular economy models and shift existing production lines and waste generation. • Garner public support for research, development, and deployment of new technologies. • Increase collaboration with the public sector to upscale buildings, improve energy efficiency, etc. • Undergo rigorous climate risk assessment of facilities and devise ways to limit human/worker exposure. • Ensure that the value chain is circular.	• Elimination of jobs due to changes in industry or demand/supply. • Forced early retirement of workers. • Elimination of due to redundancy/ technology/automation • Reconfiguration of unions' power. • The technological skills needed may not match workers' current skills (particularly women and lower-skilled workers). • A change in supply chains is likely to impact direct and indirect workers/job losses and changes.	• Develop capacity-building and reskilling programs. • Develop educational centres or curricula that would feed into industry jobs. • Ensure that women, youth and other marginalized groups are integrated into STEM-related training/courses. • Promote economic diversification that also aligns with sustainable and climate-smart policies/needs. • Build on existing low-tech or local knowledge. • Invest in systems and infrastructure so that products can have added value. • Invest in new industry sectors (carbon capture storage centres, etc.). • Promote industries that support rural livelihoods and minimise migration to urban centres.

Source: Authors' own elaboration.

Table 14. Tourism: impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
TOURISM		
• Improve tourism workspaces and work conditions. • Ensure health, safety and security services for guests/ visitors. • Support effective legal and administrative frameworks, and incentivize business investments. • Enforce wildlife and ecosystem protection policies. • Increase collaboration with related economic sectors (transportation, agriculture, etc.). • A regulatory system must be put in place to regulate corporate control. • Increased dialogue between local communities, the private sector and public entities must be established and maintained. • Local communities' right to decide over their territories must be granted. • Policies that allow and support community tourism must be designed and implemented. Support may come as capacity-building programs, low-interest loans, etc. • Infrastructure must be climate smart/green/sustainable. • Climate-smart use of resources/ water/land use, etc., must be fostered and supported. • Promote local agriculture to foster regional economic activity. • Ensure that local jobs are provided. • Strategies to promote tourism locally and internationally must be implemented (e.g., national branding).	• The tourism industry can ignore local communities' rights and necessities (including indigenous people), leading to social justice issues and environmental racism. • Natural ecosystems may be affected due to uncontrolled tourist rates and/or infrastructure development. • Social relationships in host communities may be negatively affected. • The livelihoods of indigenous people may be negatively affected. • Other economic activities may be relegated (e.g. agriculture, fishery, etc.), leading to significant changes in value chains.	• Job creation (including direct, indirect, and induced jobs). • Policies related to tourism could be aligned with countries' climate goals. • Tourism could be a key adaptation sector in NDCs, LTSs, and other relevant climate change policies. • During construction, tourism demands furniture, furnishings, and even capital goods, which might be locally provided depending on a country's development level. • Tourism may also generate additional demand for transport (of all kinds), telecommunications and financial services. • Tourism boosts local product consumption, restaurants, and food markets, which, in turn, stimulate local agriculture, fishing, handicraft manufacturing, and the overall informal sector. • Tourism may be greener than other productive activities (such as oil extraction), making it an option for countries committed to gradually reducing their dependence on fossil fuel revenues.

Source: Authors' own elaboration.

Table 15. Mining: impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
MINING		
• Adequate geological studies must be developed to exploit mineral resources properly. • Skilled and unskilled labour will be needed to deploy mineral production. • Favourable working conditions, especially ones related to health, safety and well-being, must be guaranteed. • Informal labour in the mining sector must be discouraged. • Illegal mining must be stopped through effective government decisions and measures. • Land tenure issues must be addressed. • Governance and regulatory frameworks must be improved to attract investors. • Political instability must be addressed. • Child labour in the mining sector must be eradicated. • Granting permissions for new mines must include participatory approval processes adequately verified by the authorized state entity. • EIAs must follow strict international standards until local regulations are designed.	• Loss of jobs associated with illegal mining activities. • Potential negative impacts on ecosystems (air, water, and soil pollution) and local communities. • Natural ecosystems may be destroyed due to infrastructure development (mining facilities, roads, among others). • Land value may be impacted. • Land use may change. • Social disruption due to uneven natural resource distribution (mainly water resources). • Negative impacts on miners' health, especially in small-scale and artisanal mines. • Destruction of social relationships in communities near mines. • Changes in communities' livelihoods of those in close proximity to mines. • Need to build a more extensive energy complex, which can be challenging considering that half of the African population still lacks access to electricity. • Natural resources overexploitation may occur since these resources will have to sustain more economic activities simultaneously (e.g. agriculture and mining).	• Formal job creation (direct, indirect, and induced). • Support economic diversification. • Support industry deployment. • Increase mineral exports. • Possibility to link with other related sectors to manufacture/add value to mining resources in local regions. • Capacity development and training must ensure workers have the necessary skills to perform mining tasks properly. • Retraining and/or financial compensation schemes must be put in place. • Youth and women must be integrated into the new/alternative mining sector. • Increase women's participation in leading roles within the mining industry. • Local mineral production can support deploying renewable energy infrastructure at less expensive costs.

Source: Authors' own elaboration.

HIGH 5: INTEGRATE AFRICA-TRANSPORTATION AND INFRASTRUCTURE (TERRESTRIAL TRANSPORT/INFRASTRUCTURE)

Through this priority, the AfDB seeks to build and expand regional infrastructure, boost trade and investment in and within Africa, and ease the mobility of goods, services and people across borders. This strategy poses the opportunity to invest in renewable energy facilities, greener transportation, water resources management, and drought resilience programs, which are investment lines 100% aligned with a climate-resilient future.

Table 16. Transport: impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
TRANSPORT		
• Promote low-carbon public transportation. • Promote and invest in electric vehicle (EV) infrastructure (e.g. charging stations). • Subsidize EV purchases (mainly buses). • Improve public transportation service. • Support non-vehicular transportation such as walking and cycling. • Introduce a carbon tax on fossil fuels, such as diesel and gasoline, that power vehicles. • Enforce increasingly rigid emissions standards for all road vehicles. • Invest in climate-resilient transportation infrastructure and reconfiguration. • Mobility policies that manage demand must be instituted, such as congestion charges, to put a price on private vehicle traffic. • Bus priority infrastructure must be reallocated in urban spaces (e.g. red carpet lanes). • Transportation systems must be more user-friendly through digitalization.	• Increases in public transportation prices are likely to impact low-income people, who comprise the most significant number of public transportation users. • Phase-out of fossil-fuel-powered public transportation before alternatives are effectively introduced will impact existing users. • Electric vehicles or alternative transportation may be expensive due to technology or imports, affecting society's low- and middle-class segments. • Elimination of jobs in the existing transportation system (drivers, mechanics, etc.). • Job skills required for the new transportation sector may differ from those of the existing workforce. • Impact on indirect and informal workers who depend on or are adjacent to the existing transport system for their income.	• Reduce GHG emissions from the transportation sector. • Job creation. • Capacity building- STEM courses to ensure skills to develop and maintain new industries are available. • Increase collaboration with related sectors (geography, technology, climate science, etc.) • Increase driver/user safety (newer, cleaner vehicles, accessible foot or bike paths). • Develop new enterprises to provide services to changing consumer trends in transportation. • Work opportunities in developing new infrastructure. • Health advantages/air/noise pollution decrease. • More choices for consumers on transportation possibilities.

Source: Authors' own elaboration.

Table 17. Infrastructure (development & construction): impacts, socio-economic ramifications and opportunities.

SECTORAL ACTIONS	POTENTIAL SOCIO-ECONOMIC RAMIFICATIONS	OPPORTUNITIES TO MITIGATE SOCIO-ECONOMIC IMPACTS
INFRASTRUCTURE (DEVELOPMENT & CONSTRUCTION)		
• Develop and implement national roadmaps for the building/construction sector. • Strategize a path to net-zero emissions throughout the building environment lifecycle by 2050. • Establish building codes for new and retrofit buildings that align with net-zero goals. • Incentivize retrofits. • Set public and private procurement standards to incentivize zero-carbon materials, e.g., cement, steel, and aluminium. • Promote green building and local use of materials/ reclamation • Provide grants, subsidies or low-risk investment for retrofitting (energy efficient windows, insulation, etc.) • Ensure circular economy is upheld (discarding materials, etc.) • Policies that support green/ energy efficient building or retrofits.	• Jobs transformation in the cement industry is associated with lower clinker content. • Jobs transformation in the installation of efficient cooking technologies and HVAC. • Jobs' elimination in construction techniques like 3D printing. • Job elimination in the sector overall or transformation of jobs. • Impact on indirect works (e.g. Low wage-low skilled construction workers) • Impact on the informal sector (e.g. women, food sellers, etc.)	• Diversify the economic sector (energy efficiency, retrofits, new materials, recycling, etc.). • Safer, healthier, and more adequate buildings/spaces. • Planning and permitting processes to be more collaborative (e.g. accessible community meetings. • Capacity development opportunities to build on existing knowledge and add new low- and high-tech lessons. • Develop new career paths that include youth, women and other marginalized groups; ability to move away from gendered work categories.

Source: Authors' own elaboration.

This high-level analysis helps to illustrate the main implications and challenges of just transition implementation. This analysis also provides some key actions to enhance a communities economic and social opportunities as a result of the transition. The examples and actions presented for each sector show the wide-ranging and complex considerations that must be addressed in implementing a just transition. Moreover, this analysis links just transition implementation with the African Development Bank Group's High 5 priorities via related economic sectors. The insights presented here are examples that can assist government officials and other stakeholders to better understand and plan for a just transition. While exploring just transition interventions and implications on economic sectors is critical to operationalizing just transition, it is also necessary to understand the process for just transition operationalization. To this end, a theory of change method is presented. A theory of change helps various stakeholders come together to collaboratively contribute toward just transition planning and neighbours them to become actively engaged and learn from the process.

A THEORY OF CHANGE FOR JUST TRANSITION IN AFRICA

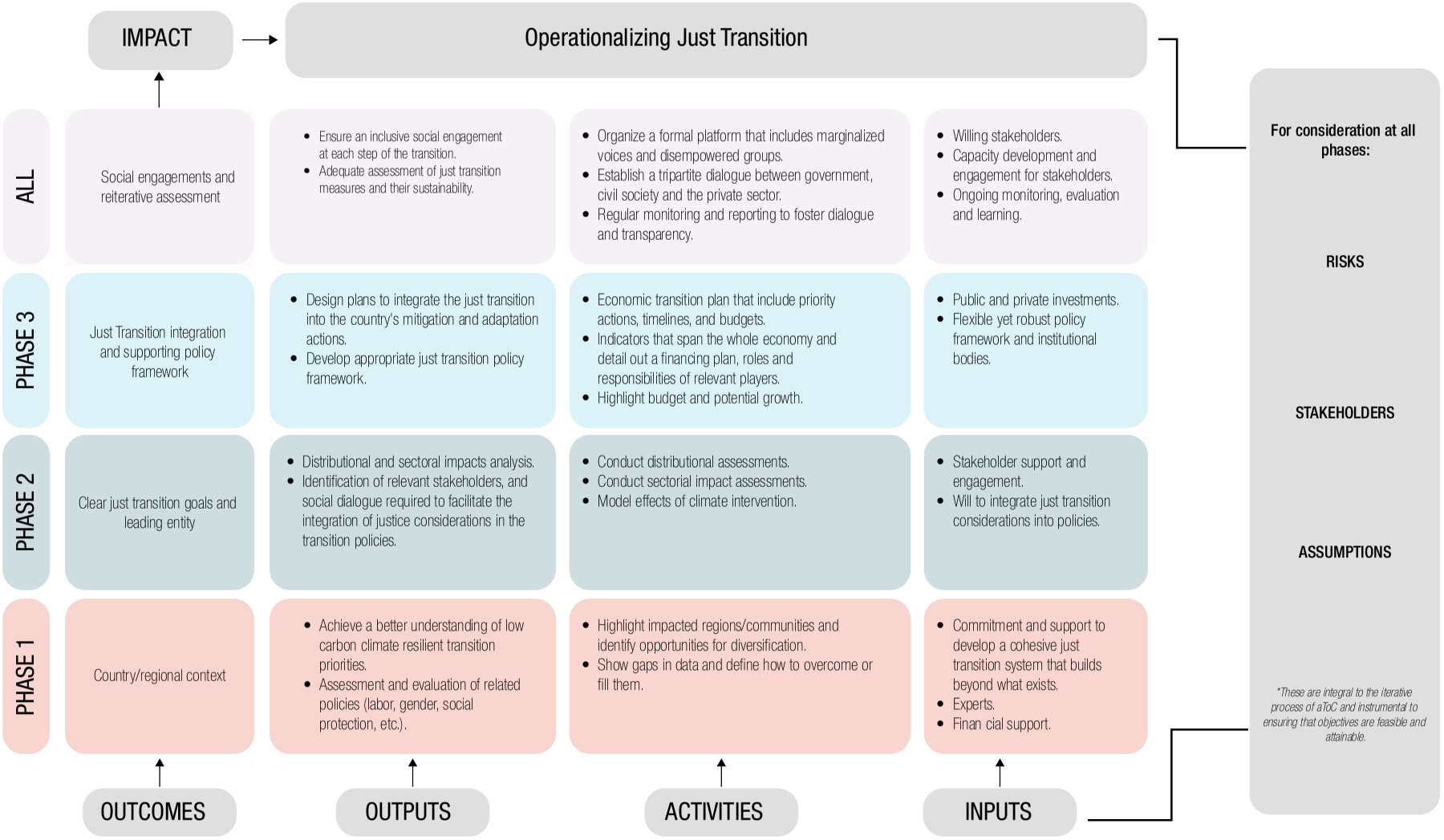
A theory of change is proposed to show how one or several interventions are expected to create specific change, in this case, operationalizing just transition. By nature, a theory of change is context-driven. It is to be used as a collaborative tool where stakeholders can come together, present different views, and collectively make decisions. Moreover, a theory of change helps to identify unintended or hidden consequences that may hinder a process. Similarly, a theory of change also helps to identify the underlying assumptions and risks that may impact the desired change. A theory of change is proposed in this context because a just transition leads to complex social and economic challenges and opportunities that are deeply embedded in a particular sociocultural context.[224]

A theory of change enables those internally working on it to learn from the process. It pushes them to make explicit assumptions and challenge and question possible solutions, exploring these from various angles and perspectives. In the context of just transition, the collaborative process of developing a theory of change would push relevant stakeholders to review and revise what is needed for a just transition in their given context and what specific actions would be necessary to ensure these requirements are met.

The theory of change proposed focuses on the four key phases required to operationalize just transition at the country or sub-country level (Figure 31). These are: 1) Understanding the Context, 2) Defining goals and clarifying leadership and baseline information, 3) Implementing plans for just transition and designing a just transition framework and All) Engaging stakeholders via a meaningful process and ensuring there is space for ongoing reflection and assessment of the operationalization process. These phases show a logical, sequential order in the operationalization process; however, variations and exemptions are likely since different contexts may require alternative considerations. There are inputs, activities, outputs, and outcomes for each phase. These are specific requirements to ensure a phase is fulfilled.

[224] USAID. 2022. Learning Lab Theory of Change.

Figure 31. Theory of change for a just transition.



Source: Authors' own elaboration.

Since a theory of change is context specific, some of the actions proposed for the faces may need revision; however, the modifications must stay within the realm of the requirements for just transition operationalization. Each phase's specifics will also largely depend on those working together on the theory of change. Therefore, it is imperative that the planning process, from its inception, in developing a theory of change, for example, be inclusive. A theory of change allows for different perspectives, voices, and opinions to be integrated into the process. We are designing a theory of change to effectively operationalize a transition that is just not only ensures adequate planning but also fosters learning and growth for those involved in the design process.

6. CONCLUSION

This report has explored just transition in the African context, first by exposing the considerations for a transition in Africa, recognizing the need for development and the continent's different economic and social circumstances. Then, this report presented the foundations for just transition and outlined some of the prominent frameworks better understand just transition as a concept and thus inform its potential operationalization in the African context.

Next, this report highlighted salient regional information, including climate, economic, political, and social snapshots, to provide a high-level understanding of Africa in relation to just transition efforts. The report concludes by discussing just transition implications in different contexts and economic sectors. First, the just transition challenges and opportunities are reviewed at the context level, dividing the region into fossil fuel-dependent and non-fossil fuel-dependent countries. A closer investigation is warranted since the just transition implications for these differ. This section of the report also discusses the sectorial implications, social ramifications and opportunities brought forth by the transition. The sectors are associated with the African Development Bank's High 5 Priority areas. This section concludes with a model for a theory of change (Toc) for just transition for Africa. This practical model illustrates how to organize thinking and actions to operationalize just transition.

This report highlights the importance of contextual circumstances, and the analysis provided serves as a starting point, where the high-level considerations, implications and opportunities for just transition are made available at the continent level. For more specificity, country or even sub-country level analysis is required and sectorial and distributional evaluations are within that. The ToC has presented actionable and practical points for operationalizing just transition. It will be up to the individual countries of Africa to ensure the transition addresses their needs and offers opportunities that promote economic growth and equity.

7. ANNEXES

ANNEX 1. MDB JUST TRANSITION HIGH-LEVEL PRINCIPLES[225]

HIGH-LEVEL PRINCIPLE	DESCRIPTION
Principle 1: MDB support for a just transition aims to deliver climate objectives while enabling socio-economic outcomes, accelerating progress towards the Paris Agreement and the SDGs.	The MDBs are approaching just transition in the context of the Paris Alignment and supporting the delivery of NDCs, long-term low GHG emissions and climate-resilient strategies. Support for a just transition also delivers several SDGs, notably those relating to affordable and clean energy (SD7), gender equality (SDG5), decent work and economic growth (SDG8), reduced inequalities (SDG10), responsible production and consumption (SDG12) and climate action (SDG13). The climate outcomes associated with MDB support for a just transition are clear and include higher NDC and long-term strategy ambition, supporting the goals of the Paris Agreement. The socio-economic outcomes will be broader, including support for affected communities and regions and enhanced access to sustainable, inclusive, resilient livelihoods and services. As an approach, MDB support for a just transition intends to deliver climate and socio-economic outcomes, thereby accelerating the delivery of the Paris Agreement and SDGs.
Principle 2: MDB support for a just transition focuses on moving away from GHG emissions-intensive economic activities through financing, policy engagement, technical advice, and knowledge sharing, in line with MDB mandates and strategies and country priorities, including NDCs and long-term strategies.	There is a need to help clients move away from fossil fuels and GHG emissions-intensive economic activities towards a diversified, inclusive, resilient economy provided the framing for a just transition in the High-Level MDB Statement. Where MDBs operate in GHG-intensive contexts, support for a just transition may focus on fossil fuel production, thermal power and other GHG emissions-intensive activities. Those working in less GHG-emissions-intensive contexts may focus on alternative pathways for sustainable, inclusive, and resilient development that avoid exposure to unnecessary transition costs. In all contexts, support for education and skills may accelerate the transition and enhance access to sustainable livelihoods. Support for a just transition also supports the equitable and sustainable use of land, forest, and water resources. There are numerous entry points, from mainstreaming support for a just transition within existing policies and activities, to developing additional, targeted interventions. In each case, MDB mandates, operating models, and country priorities, including NDCs and long-term strategies, will guide institutional approaches to supporting a just transition.
Principle 3: MDBs will encourage support for a just transition by building on existing MDB policies and activities, mobilizing other sources of public and private finance, and enhancing coordination through strategic plans to deliver long-term, structural economic transformation.	Given their long-term approach, MDBs have a unique role in scaling support for a just transition. Delivering adequate support for a just transition will require coordination within and among MDBs, engaging multiple areas such as climate change, energy and extractives, social development, gender and economic inclusion, health, sustainable infrastructure, and macroeconomic planning. It will also require enhanced coordination with other stakeholders – including national and regional development banks, donors, and the private sector – and the mobilization of different sources of finance to scale support for a just transition through co-financing and collaboration on policy approaches and technical assistance. In doing so, the MDBs recognise the long-term challenge of a just transition and the potential for support – including integrated place-based planning, infrastructure investment, labour market and social development policy, SME and social finance, skills and training – to remove political and socio-economic barriers to transition and contribute to structural economic transformations at local, regional and national levels.

[225] MDB Group. 2021. MDB Just Transition High-Level Principles.

Principle 4: MDB support for a just transition seeks to mitigate negative socio-economic impacts and increase opportunities associated with the transition to a net zero economy, supporting affected workers and communities and enhancing access to sustainable, inclusive and resilient livelihoods for all.	MDB support for a just transition will be informed by the distribution of the costs and benefits associated with the transition to a net-zero economy. It seeks to mitigate negative impacts on the people and communities affected by shifts in climate policy, the competitiveness and resilience of GHG-intensive economic activity, and support equal access to the new opportunities, jobs and markets associated with the transition. Using gender-lens and integrated territorial development approaches may support the economic regeneration of communities dependent on fossil fuels and GHG emissions-intensive activities and provide alternative pathways to sustainable, inclusive, resilient development. The entry points available to MDBs range from integrating distributional considerations in existing tools such as safeguards, social protections and country diagnostics to developing new approaches, including just transition plans and projects. The relative emphasis of MDBs – between mitigating impacts and enhancing opportunities – will reflect their operating contexts.
Principle 5: MDB support for a just transition encourages transparent and inclusive planning, implementation and monitoring processes that involve all relevant stakeholders and affected groups and that further inclusion and gender equality.	MDB support for a just transition encourages 'just' processes and outcomes. Genuinely inclusive, transparent and accountable processes are central to successful support for a just transition. The challenges and opportunities associated with a just transition are inherently context-specific, reflecting the place and people affected and requiring their engagement and ownership at the local, regional and country levels. It is, therefore, essential that MDB support for a just transition is developed and delivered in consultation with affected groups, in line with MDB standards and international best practices, and in ways that advance inclusion and equality of opportunity for women and other groups. MDBs may also use their influence and investments to encourage and support stakeholders, including government and businesses, in delivering transparent, inclusive processes.

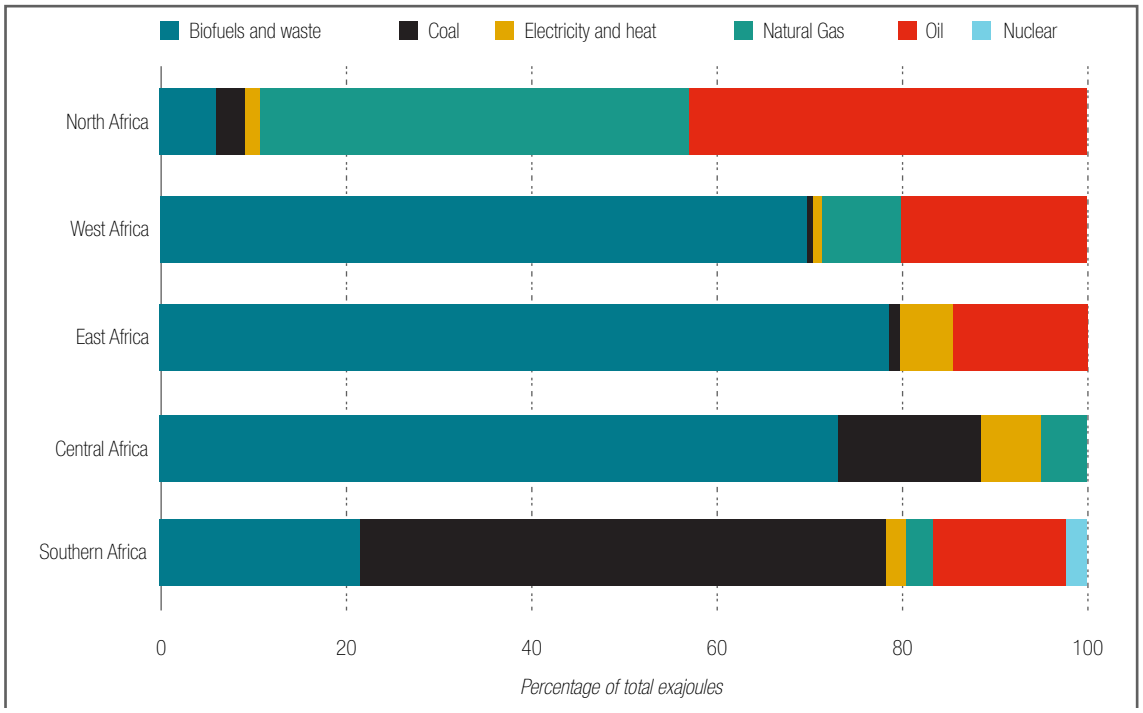
ANNEX 2. ENERGY SECTOR IN AFRICA

Africa is a region that harbours considerable primary energy resources—renewable and non-renewable. The continent holds "the richest solar resources of any region globally"[226] and "hydropower in many countries, wind mainly in coastal areas, and geothermal in the East African Rift Valley".[227] Solar and wind power can produce clean hydrogen that may be internally consumed or exported (generating new incomes for African states).[228] Hence, Africa's portfolio of clean energy assets could lead the region to leapfrog to modern and eco-efficient energy technologies.[229] Especially micro-hydro projects and other local renewable energy alternatives may become prominent in future power generation planning for Africa.[230]

Africa's renewable energy potential has been underutilized mainly due to political insecurity, huge investment cost (and associated risks), infrastructure inadequacies, lack of local skilled workforce, lack of appropriate regulatory and institutional frameworks, and tariffs per kWh higher than energy tariffs from conventional sources.[231] Additionally, the debate about Africa being the least responsible region for global warming and its consequent right to use its fossil fuels (gas in particular) to increase access to electricity may divert efforts from renewable energy deployment.[232] Accordingly, direct (and unhealthy) bio-energy conversion is still the dominant energy source in many African countries (Figure A). Among others, this is one of the circumstances hindering the continent's sustainable development. Electricity production, in particular, is a critical component in Africa's energy systems.[233]

[226] Alex Benkenstein and Romy Chevallier. 2022. Partnership for a green transition and energy access: strategic priorities for Africa and Europe.
[227] Kenneth Odero. 2014. Transforming Africa's Energy Sector: Lessons from International Experience.
[228] Kenneth Odero. 2014. Transforming Africa's Energy Sector: Lessons from International Experience.
[229] Mo Ibrahim Foundation. 2017. Clean energy: The potential to leapfrog.
[230] François-Guilhem Vaissier, Jennifer Stolp, and Joz Coetzer. 2021. Renewable energy in Africa: Update in the era of climate change.
[231] Samuel Adams and William Asante. 2019. Politics of Renewable Energy in Africa: Nature, Prospects, and Challenges; Oludamilare Bode Adewuyi, Mark Kipngetich Kiptoo, Ayodeji Fisayo Afolayan, Theophilus Amara, Oluwatobi Idowu Alawode, Tomonobu Senjyu. 2020. Challenges and prospects of Nigeria's sustainable energy transition with lessons from other countries' experiences.
[232] Laurence Caramel. 2022. Climate: Africa wants to exploit its fossil fuel for many more decades.
[233] AfDB. 2022. African Economic Outlook 2022.

Figure A. Primary energy supply in Africa and its regions (2022).

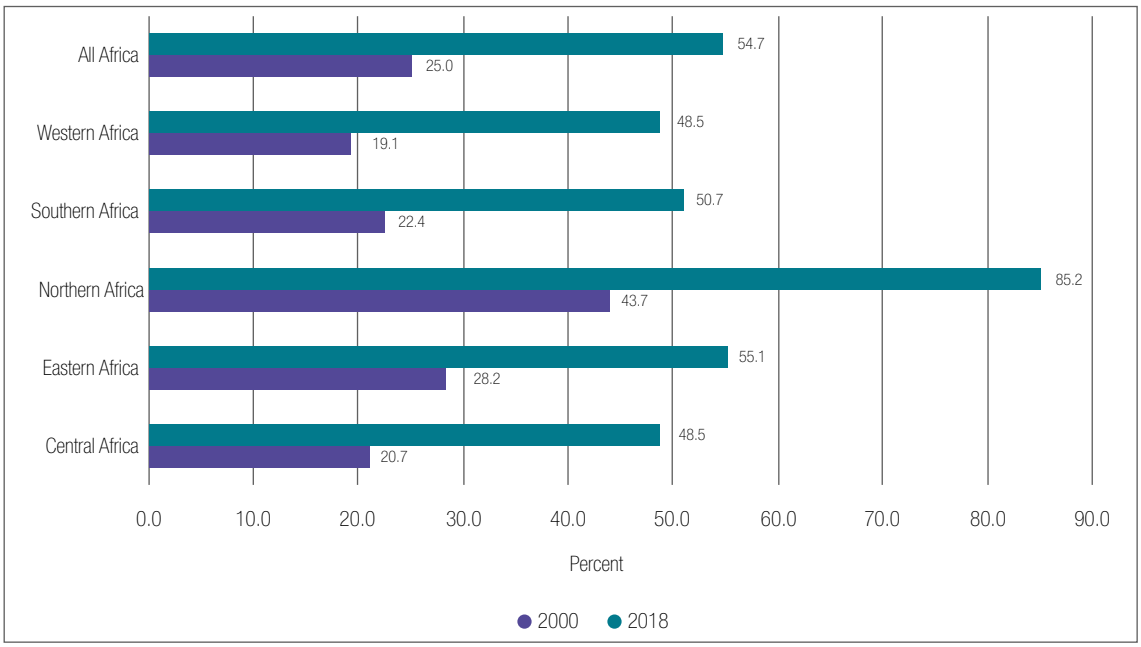


Source: AfDB. 2022. African Economic Outlook 2022.

Half of Africa's population does not have access to electricity, a critical situation in rural areas. Enhancing access to electricity across the continent has been a core objective of the Agenda 2063 and the national development plans of nearly all African nations.[234] Between 2000 and 2018, these policies contributed to more than doubling the African population connected to an energy supply (grid and off-grid). However, nearly 600 million people in Africa still lack access to electricity, which limits their access to health, education and jobs.[235] Figure B shows that Northern African countries are the best positioned. In contrast, Western and Central African countries lag in the continent.[236] From a global perspective, Figure C shows that almost all regions —except for Africa— provide electricity to at least 90% of their population.[237]

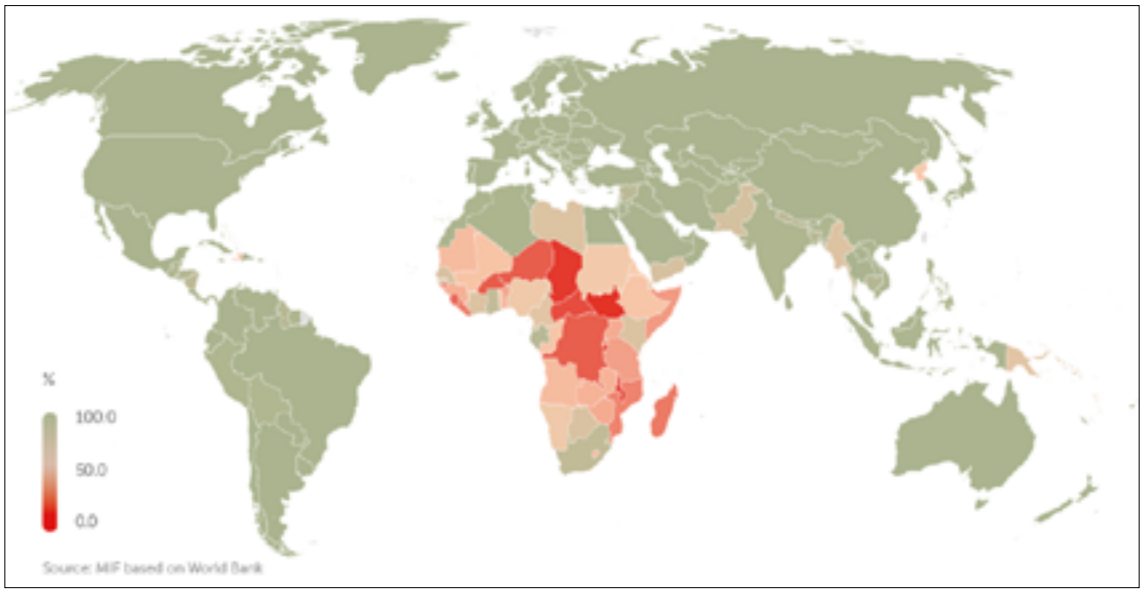
[234] François-Guilhem Vaissier, Jennifer Stolp, and Joz Coetzer. 2021. Renewable energy in Africa: Update in the era of climate change.
[235] Kenneth Odero. 2014. Transforming Africa's Energy Sector: Lessons from International Experience.
[236] AU, EC Africa, AfDB, and UNDP. 2022. 2020 Africa Sustainable Development Report.
[237] Ben Chandler. 2021. Spotlight 17: Africa's vast green potential should not be limited to renewable energy.

Figure B. Access to electricity in African sub-regions (2000 and 2018).



Source: AU, EC Africa, AfDB, and UNDP. 2022. 2020 Africa Sustainable Development Report.

Figure C. Access to electricity in African sub-regions (2019).



Source: Ben Chandler. 2021. Spotlight 17: Africa's vast green potential should not be limited to renewable energy.

Electricity access contributes to reaching higher levels of socio-economic development.[238] Therefore, in a context of a just transition, insufficient electricity generation implies that energy policies will have to face the consequences of replacing fossil fuels with renewable energy sources but also guarantee that new energy regulatory frameworks will not increase inequality. It is relevant to analyze Africa's renewable energy policies in light of a justice framework. Müller, Claar, Neumann and Elsner have assessed renewable energy policy frameworks of 34 African states, applying a justice framework similar to the one described in this report (Table 1). They address distributive, recognitional and procedural justice as the three pillars of any energy transition.

Distributive justice faces access to an affordable source of renewable energy. Recognitional justice addresses how much energy policies satisfy vulnerable people's needs due to "energy poverty". Procedural justice emphasizes the participation and articulation of all interested parties to ramp up renewable energies' democratizing potential. In addition, the authors evaluate policies' "transformational potential" by exploring their scopes and scalability to know the level of change they can generate.[239]

The findings of this analysis are summarized in Table A.

[238] AfDB. 2022. African Economic Outlook 2022.

[239] Franziska Müller, Simone Claar, Manuel Neumann and Carsten Elsner. 2020. Is green a Pan-African colour? Mapping African renewable energy policies and transitions in 34 countries. Assessed countries include: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.

JUSTICE DIMENSION	RESULTS	CASES
Transformational potential	Several African countries started implementing direct RE policies between the 1990s and 2000s. Direct policies are concrete measures that target specific activities or groups of people.	Duty exemptions on renewable energy parts: Ghana – 1994, Senegal – 1998, Ethiopia – 2002, Kenya – 2009. Rural electrification through renewables: Malawi (1980), Mali (1996), Uganda (2002).
	Some African countries have advanced to more complex energy frameworks, combining direct and integrative policies. Integrative policies promote the integration of renewable energies into broader energy strategies.	Feed-in tariffs and biofuel blending mandates: Algeria and Uganda.
	The African countries with consolidated RE frameworks comprising integrative policies and enabling policies are more progressive. Enabling policies that strongly look for transformative changes in energy systems.	Policies aiming for a systematic transition towards modern, clean energy sources that address economic, socio-ecological and educational dimensions: South Africa, Rwanda, Kenya, Mauritius, Ethiopia and Egypt. Particularly, Rwanda's National Energy Strategy stands out because: • It promotes energy diversification (including geothermal energy). • It pursues a reduction in energy consumption by changing consumers' behaviour. • It supports research and development on renewables. • It requests industries to carry out energy audits. • It bets for a grid extension. • It furthers capacity-building programs to strengthen female expertise in RE technologies.
	African countries are still stuck in direct policies and "scattered policy frameworks". The lack of institutional capacity and donor assistance mainly causes this situation.	Botswana, Togo, Ivory Coast, Gambia, Malawi, Guinea, Democratic Republic of the Congo, and Mozambique.
Distributive justice	Distributive justice is better handled through complex policy frameworks that combine direct, integrative and enabling policies.	Ethiopia, Namibia and Zambia's policy frameworks comprise direct policies targeting individual consumers and integrative and enabling policies (e.g., rural electrification and grid integration).

Recognitional justice	Several African countries consider recognitional justice criteria in their energy policy frameworks, primarily by including gender-sensitive policies.	Two particular cases are: • Mauritius' Long Term Energy Strategy 2009-2015 fosters capacity-building programmes to help women constitute legal associations to facilitate access to microcredit. Besides, the strategy establishes special payment conditions for women with irregular income flows. • Mali's Promotion des Energies Nouvelles et Renouvelables pour l'Avancement des Femmes programme aims to improve the living conditions of women of 400 villages by savings on energy bills, solar water pumps and solar cooking.
Procedural justice	There needs to be more evidence of African states integrating procedural justice in their energy policy frameworks. Most of the time, in countries where the donor community governs the energy transition process, goals of distributive justice are accomplished. The ones regarding procedural justice still need to be.	South Africa's Renewable Energy Independent Power Producer Procurement Programme (REI4P) is a rare example of a policy that requires public consultation before implementing an RE project. However, the consultation process still lacks "ownership, alignment and harmonization" with citizens' interests.

Source: Authors' own elaboration based on Franziska Müller, Simone Claar, Manuel Neumann and Carsten Elsner. 2020. Is green a Pan-African colour? Mapping African renewable energy policies and transitions in 34 countries.

A complex energy policy framework (one that combines direct, integrative and enabling policies) is more suitable to tackle justice's three dimensions. Designing and implementing such a policy framework require countries to adhere to international standards for labour, health, safety, social protection and human rights, particularly children's, women's and vulnerable groups' rights.[240]

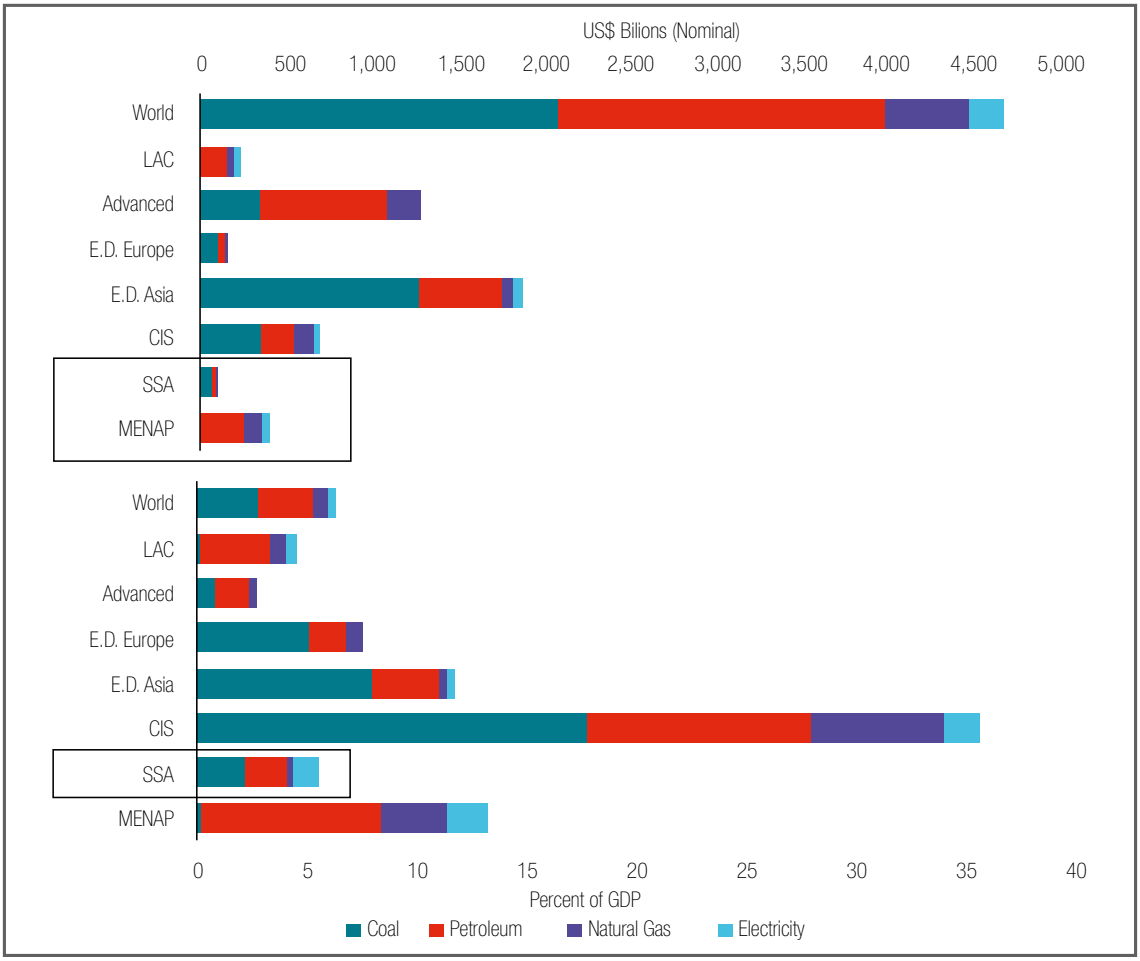
[240] Daisy Mukarakate. 2021. The role of extractives in Africa's inclusive green and resilient recovery.

ANNEX 3. FOSSIL FUEL SUBSIDIES IN AFRICA

Historically, fossil fuel subsidies have been implemented to support energy security and domestic energy production to increase development opportunities for people. Currently, fossil fuel subsidies are an essential burden on governments' budgets, preventing people and countries from progressing toward sustainable economic development. Even worse is the evidence that fossil fuel subsidies perpetuate inequality and undermine access to affordable energy since they benefit rich people rather than the poorest population.[241]

At a global level, post-tax fossil fuel subsidies[242] exhibited great stability between 2015 and 2017, going from $4.7 trillion to $5.2 trillion. Focusing on the African continent, the Middle East, North Africa, Afghanistan, and Pakistan (MENAP) region represented $0.4 trillion in global subsidies. In comparison, Sub-Saharan Africa (SSA) represented $0.09 trillion (Figure A).[243] Compared to the rest of the world; these numbers may seem negligible. Still, as a share of GDP, post-tax fossil fuel subsidies are a significant expenditure for African regions.

Figure A. Global energy subsidies by region and energy product (2015).



Source: IMF Working Paper: Global fossil fuel subsidies remain large. An update based on country-level estimates.

[241] Shelagh Whitley and Laurie van der Burg. 2015. Fossil Fuel Subsidy Reform in Sub-Saharan Africa: From Rhetoric to Reality. New Climate Economy.

[242] Pre-tax subsidies reflect differences between the amount consumers actually pay for fuel use and the corresponding opportunity cost of supplying the fuel. Post-tax subsidies reflect differences between actual consumer fuel prices and how much consumers would pay if prices fully reflect supply costs plus the taxes needed to tackle environmental costs and revenue requirements. Hence, post-tax subsidies are higher than pre-tax subsidies.

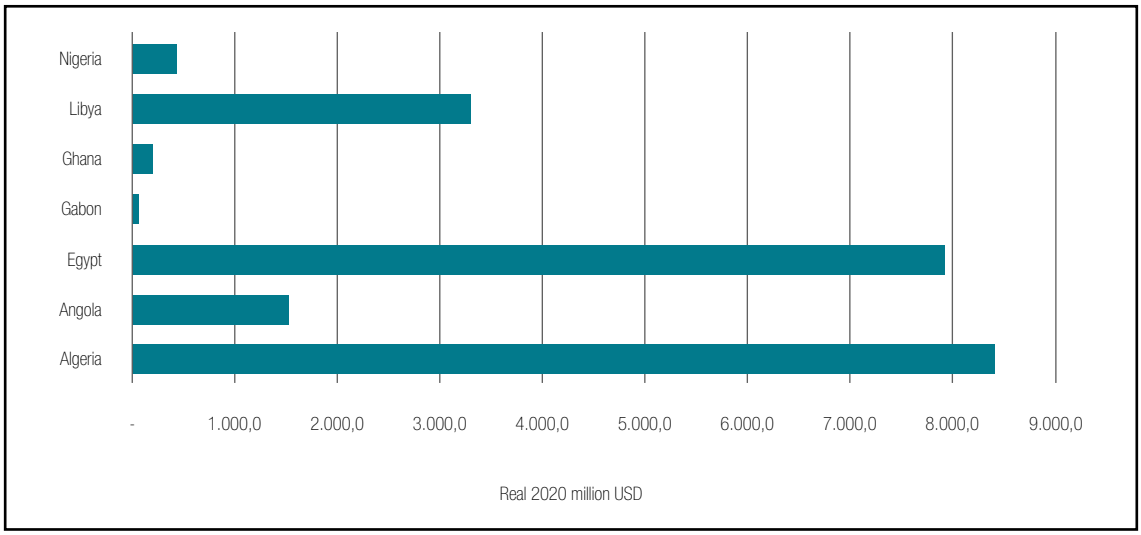
[243] David Coady, Ian Parry, Nghia-Piotr Le and Baoping Shang. 2019. Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates. IMF Working Paper.

Several SSA countries provide subsidies to fossil fuel production and consumption at a national level, mainly for oil and gas. These subsidies are particularly high in oil-producing and oil-exporting countries like Angola, Ghana, Kenya, Nigeria and Uganda. An analysis of 30 SSA countries estimated that fossil fuel subsidies, including electricity-related subsidies, reached up to $32 billion in 2013. Due to reform efforts and the falling oil price, this quantity dropped to $26 billion in 2015. However, Angola, Côte d'Ivoire, Mozambique, Nigeria, South Africa, Tanzania, Zambia and Zimbabwe maintained fossil fuels subsidies for over $1 billion in 2015, which was linked mainly to high levels of economic activity and fossil fuel use for energy.[244]

In Northern Africa, Egypt spent $21 billion on energy subsidies in 2013, representing 19.5% of its annual public budget.[245] Nevertheless, due to reforms implemented ever since, fossil fuel subsidies share in Egypt's budget reduced to 2.7% in 2016.[246] Likewise 2014, Morocco successfully eliminated subsidies to gasoline, industrial fuel and fuel used for electricity.[247] On the contrary, in Tunisia, energy subsidies rose fourfold between 2005 and 2013, reaching 4.7% of GDP in 2013.[248] Despite government efforts, Tunisia's path to eliminating fossil fuel subsidies is unlikely to succeed.[249]

More recent data from the International Monetary Fund (IMF) show that post-tax fossil fuel subsidies globally represented $5.9 trillion or 6.8% of GDP in 2020. By 2025, fossil fuel subsidies are projected to increase to 7.4% of global GDP, given that the share of fossil fuel consumption in emerging markets continues to climb.[250] Africa is no stranger to this worldwide trend: data from the International Energy Agency (IEA) reveal that pre-tax fossil fuel subsidies are still crucial in several African nations, mainly in oil-exporting countries (Figure B).[251]

Figure B. Expenditures in fossil fuel subsidies (including oil, electricity, gas and coal) in several African countries (2020).



Source: Authors' own elaboration based on data from the IEA's Fossil Fuel Subsidies Database.

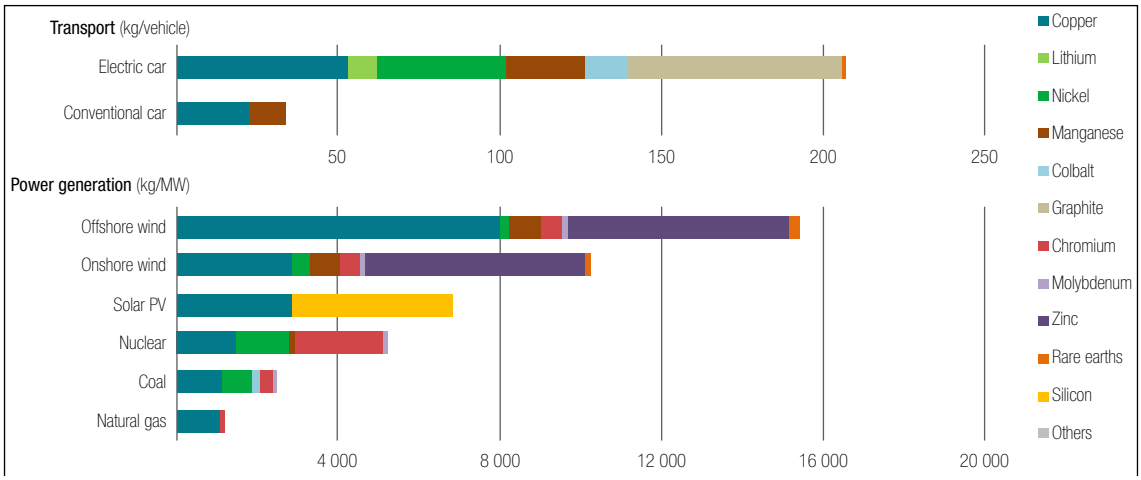
[244] Shelagh Whitley and Laurie van der Burg. 2015. Fossil Fuel Subsidy Reform in Sub-Saharan Africa: From Rhetoric to Reality. New Climate Economy.
[245] Laura El-Katiri and Bassam Fattouh. 2017. A Brief Political Economy of Energy Subsidies in the Middle East and North Africa. International Development Policy.
[246] The World Bank Group. 2017. Egypt. Energy Subsidy Reform Facility (ESFR).
[247] The World Bank Group. 2018. Morocco Energy Policy MRV. Emission Reductions from Energy Subsidies Reform and Renewable Energy Policy.
[248] Paolo Verme. 2016. Subsidy reforms in the Middle East and North Africa Region. A review. WBG Policy Research Working Paper.
[249] Alex Walsh and Julian Boys. 2020. The political economy of fossil fuel subsidies in the Middle East and North Africa.
[250] Ian Parry, Simon Black, and Nate Vernon. 2021. Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies. IMF Working Paper.
[251] IEA. Fossil Fuel Subsidies Database. (Accessed 01 Jun 2022).

Raising fuel prices to their total efficiency is necessary since this may reduce projected global fossil fuel CO2 emissions by 36% below baseline levels by 2025. However, reforming fossil fuel subsidies is a measure that needs more public support, mainly because national governments have been incapable of shifting the resulting budgetary savings to compensation programs for the poor and middle-class population. This problem is particularly challenging in oil-exporting countries, where subsidies are aimed to improve the distribution of nations' wealth and where the capacity to implement targeted social programs successfully has proven limited. Furthermore, subsidy reform becomes even more complicated because higher energy prices may contribute to a higher inflation rate. It may require efforts to reduce inefficiencies and production costs (as is often the case for the electricity sector).[252]

ANNEX 4. MINERAL DEMAND AND ENERGY TRANSITION

According to the IEA, an energy system supported by renewable energy sources differs significantly from one supported by fossil fuels. Regarding raw materials, for instance, the implementation of onshore wind farms and solar power stations (photovoltaic) require nine and five times the minerals needed for a gas power plant, respectively (Figure A). By virtue of this, the average demand for minerals from the energy sector increased 50% in 2010, coinciding with the deployment of renewable energy worldwide.[253]

Figure A. Minerals used in selected clean energy technologies.



Source: IEA. 2021. The role of critical minerals in clean energy.

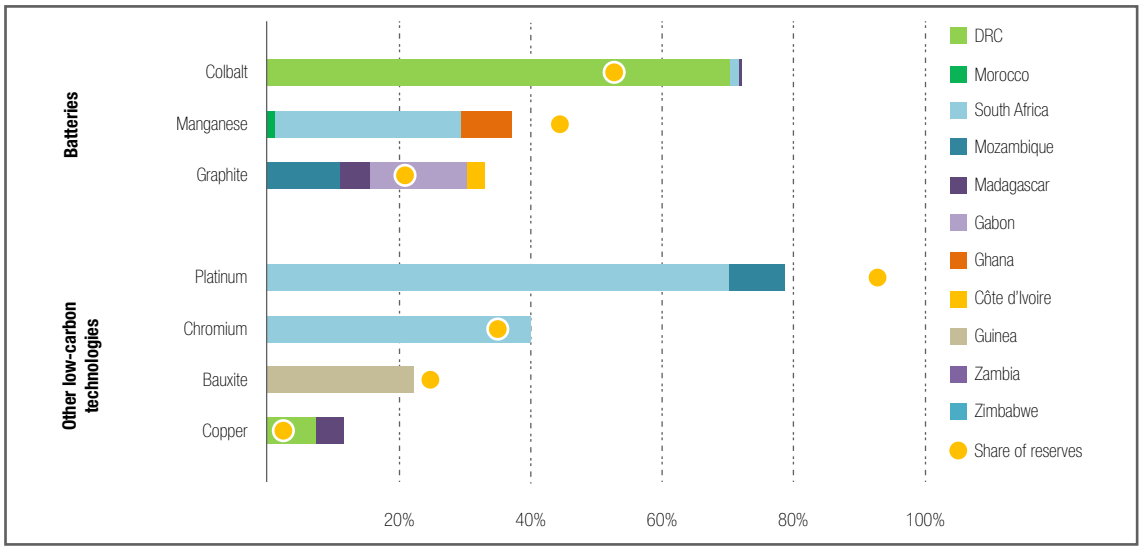
[252] Ian Parry, Simon Black, and Nate Vernon. 2021. Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies. IMF Working Paper.

[253] IEA. 2021. The role of critical minerals in clean energy.

To contribute to the Paris Agreement goals (net-zero emissions by 2050), the necessary expansion of clean energy technologies will require four times its current demand for minerals by 2040. Electric vehicles (including batteries) and grids have emerged as mineral-demanding technologies. In particular, lithium, nickel, cobalt, manganese and graphite are essential for high-performance batteries. At the same time, copper and aluminium are the pillars of electric premises expansion.[254]

Currently, Africa is a major global supplier of cobalt, platinum-group metals (PGMs) and manganese, as displayed in Figure B. South Africa and the Democratic Republic of the Congo (DRC) are the dominant global producers of PGMs and cobalt, respectively. Moreover, the continent holds many other mineral resources, such as chromium, bauxite, graphite, copper and lithium. In fact, on a smaller scale, there are also lithium production projects going on in Ghana, the DRC, Mali, Namibia and Zimbabwe.[255]

Figure B. Share of Africa in global production of selected minerals (2020).



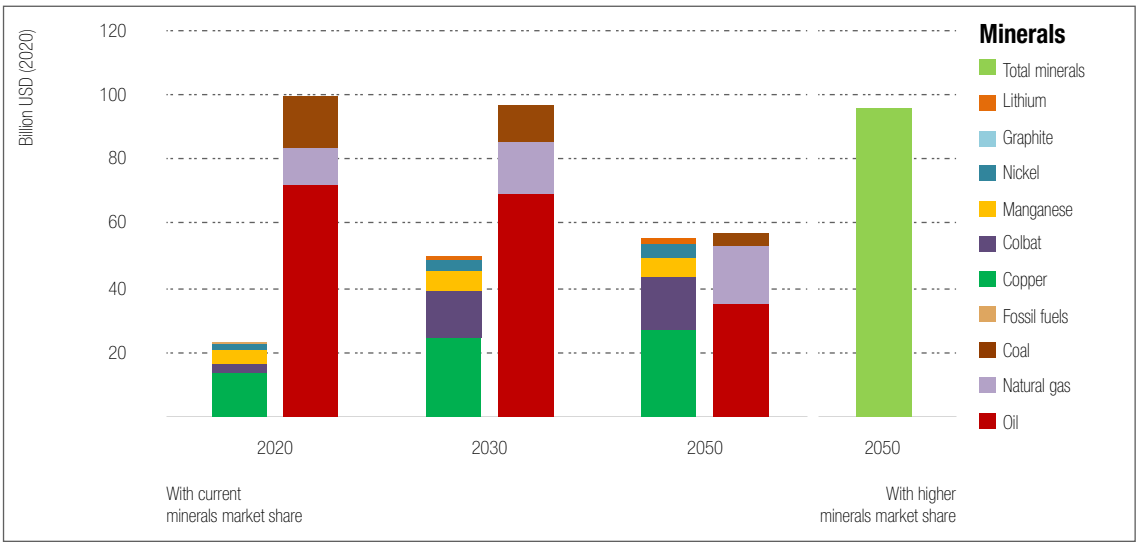
Source: IEA. 2022. Africa Energy Outlook 2022.

Revenues from the mineral sector are significant for African national economies. In resource-rich countries, for instance, they represent nearly 8% of government budgets. Likewise, in terms of product exports, minerals hold 30% of total exports in 23 African countries. In addition, mining has been one of the most attractive sectors for foreign direct investment in the continent in the last decades.[256]

Due to renewable energy global deployment, mining economic potential can scale up in Africa. As Figure C illustrates, copper and critical battery metals production revenues are expected to increase from $20 billion in 2020 to over $40 billion in 2030. By 2050, if all energy-related development goals are completely achieved in Africa, revenues from mining activities are projected to be equal to those from fossil fuel production. This scenario could be even better if Africa's share in the global mining market grows from 13% in 2020 to 20% by 2050.[257]

[254] IEA. 2021. The role of critical minerals in clean energy.
[255] IEA. 2022. Africa Energy Outlook 2022; UNDP. 2021. The role of extractives in Africa's inclusive green and resilient recovery.
[256] IEA. 2022. Africa Energy Outlook 2022.
[257] IEA. 2022. Africa Energy Outlook 2022.

Figure C. Revenues from production of copper, battery metals and fossil fuels in Sub-Saharan Africa.



Source: IEA. 2022. Africa Energy Outlook 2022.

If adequately managed, mining growth in Africa can also support job creation, local economic development, social conditions improvement, and infrastructure enhancement (such as roads, railways and power stations).[258] Nevertheless, despite all these benefits, mining unfolds –as a result of more ambitious climate action– is not encompassed in the main African policy frameworks and programs, such as the Agenda 2063, Africa Continental Free Trade Area (AfCFTA), Africa Mining Vision and the Africa Green Stimulus Programme launched in 2021.[259] This gap in public policies is preventing the continent from facing and overcoming major hurdles to harness its mineral resources fully.

[258] IEA. 2022. Africa Energy Outlook 2022.
[259] Daisy Mukarakate. 2021. The role of extractives in Africa's inclusive green and resilient recovery.

ANNEX 5. TOURISM SECTOR IN AFRICA

"Tourism is a powerful vehicle for economic growth and job creation worldwide". Tourism entails direct job creation (in accommodation and services sectors) and has a "catalytic effect" that benefits national economies. During its construction phase, tourism demands furniture, furnishings, and even capital goods, which might be locally provided depending on a country's development level. When properly addressed and promoted, it also generates additional demand for transport (of all kinds), telecommunications and financial services. Moreover, tourism boosts local product consumption, along with restaurants and food markets, which, in turn, stimulates local agriculture, fishing, handicraft manufacturing, and the overall informal sector.[260] Due to these characteristics, tourism is touted as one of the main pillars for economies that "only" have cultural and natural resources to rely on. Likewise, since it might be greener than other productive activities (such as oil extraction), it can also be an option for countries committed to gradually reducing their dependence on fossil fuel revenues.

Tourism is a potential tool to transform the African economy. From a small base of just 6.7 million international visitors in 1990,[261] Africa attracted 83.12 million in 2019 (before the pandemic),[262] which generated incomes of nearly $170 billion (including the travel sector).[263] As detailed in Table A, Egypt, Morocco, South Africa, Tunisia, and Mozambique were the top five African tourist destinations in 2019, accounting for 57% of all the continent's tourism arrivals. During the pandemic in 2020, these countries remained the most visited in the region. However, their international tourism receipts (ITR) declined by over 50%.

Country	2019		2020		ITR Change (%) 2020/2019
	millions	USD million	millions	USD million	
Egypt	13.03	13,030	…	4,398	-66.3
Morocco	12.93	8,189	2.78	3,829	-53.8
South Africa	10.23	8,384	2.8	2,471	-66.4
Tunisia	9.43	2,116	2.01	839	-62.0
Mozambique	2.02	252	…	90	-64.3

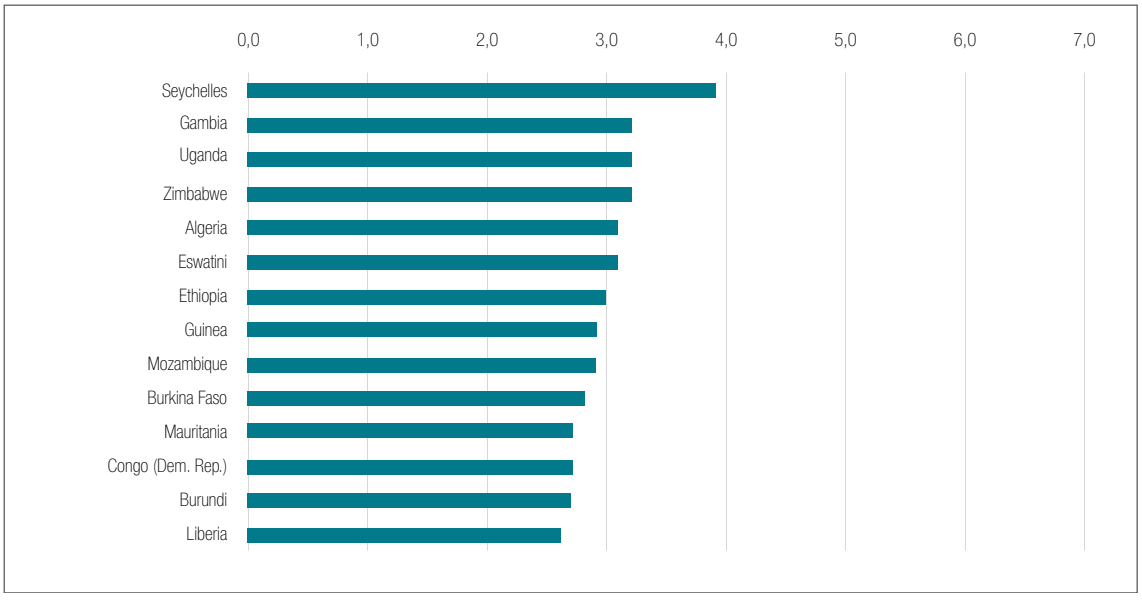
[260] World Bank. 2013. Tourism in Africa: Harnessing tourism for growth and improved livelihoods.
[261] AfDB. 2018. Africa Tourism Monitor.
[262] UNWTO. 2021. World Tourism Barometer. Statistical Annex.
[263] WTTC. 2021. Travel & Tourism economic impact 2021.

Regarding employment, travel and tourism (T&T) contributed 22.8 million jobs in 2017 (including direct, indirect, and induced jobs), representing 6.5% of total employment in Africa. Nigeria, Egypt, Morocco, Ethiopia, and South Africa registered the highest tourism employment, ranging from 1.5 to 3.3 million jobs.[264] Recent data reveal that travel and tourism employment rose to 24.7 million jobs in 2019 and reduced to 17.5 million in 2020 due to the COVID-19 pandemic.[265]

Despite its price competitiveness and abundant primary tourist resources, Africa needs to improve regarding tourist services and infrastructure. Africa is home to "expansive beaches, plentiful wildlife, extensive natural and cultural attractions, and natural adventure options", which provides opportunities to expand the business, diaspora, nature/adventure, cultural heritage, and wellness and health tourism.[266] However, the continent must overcome several constraints to fully harness its natural tourism assets. Underdeveloped air and ICT infrastructure and the Sub-Saharan region's "limited international openness" hampers travelling to and within African countries. Likewise, low access to qualified labour, as well as low health, safety and security conditions (including high crime rates), are other aspects making T&T operations less viable.[267]

Figure A and Figure B summarise an analysis of African countries' T&T-performance. The former shows the Travel & Tourism Competence Index (TTCI) of 14 African countries in 2019. On a scale from 0 to 7, the TTCI measures "the set of factors and policies that enable the sustainable development of the Travel & Tourism (T&T) sector, which contributes to a country's development and competitiveness". It comprises four categories: 'Enabling Environment', 'T&T Policy and Enabling Conditions', 'Infrastructure', and 'Natural and Cultural Resources'.[268] The latter exhibits the Travel & Tourism Development Index (TTDI) of 22 African countries in 2021. The TTDI is the updated version of TTCI, aimed to bring more attention to the sector's sustainability and resilience.[269]

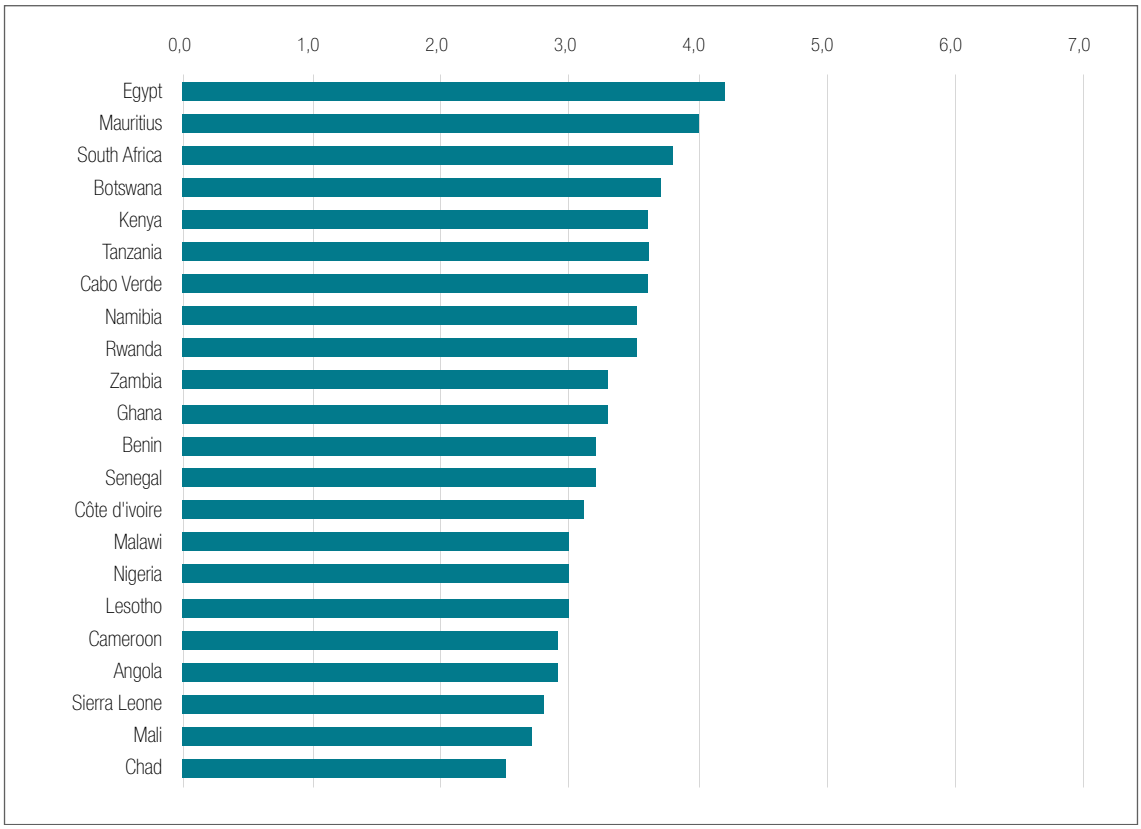
Figure A. Travel & Tourism Competence Index (TTCI) of 14 African countries (2019).



Source: Authors' own elaboration based on data from WEF's Travel & Tourism Competitiveness Report 2019.

[264] AfDB. 2018. Africa Tourism Monitor.
[265] WTTC. 2021. Travel & Tourism economic impact 2021.
[266] World Bank. 2013. Tourism in Africa: Harnessing tourism for growth and improved livelihoods.
[267] WEF. 2022. Travel & Tourism Development Index 2021: Rebuilding for a Sustainable and Resilient Future.
[268] WEF. 2019. The Travel & Tourism Competitiveness Report 2019: Travel and Tourism at a Tipping Point.
[269] WEF. 2022. Travel & Tourism Development Index 2021: Rebuilding for a Sustainable and Resilient Future.

Figure B. Travel & Tourism Development Index (TTDI) of 22 African countries (2021).



Source: Authors' own elaboration based on data from WEF's Travel & Tourism Development Index 2021.

According to the TTCI and TTDI, Egypt (Northern Africa) and Mauritius (Sub-Saharan Africa) are the best-positioned African countries within the T&T industry. Egypt is a global leader in cultural resources and a prime destination for inexpensive nature-based activities such as beach resorts. Government efforts to enhance tourism branding and improve transportation facilities have bolstered Egypt's tourism. Notwithstanding, terrorism and increased visa requirements are still curbing it. Mauritius has encouraged investment in its T&T industry by implementing effective legal and administrative frameworks and attractive business conditions (low taxes). A persuasive tourism strategy, minimal visa requirements, high-quality infrastructure (including transportation), and good health and sanitation services also support Mauritius's tourism growth. However, weak wildlife and ecosystem protection policies, along with unfavourable price competitiveness, are threats to this prosperous scenario.[270]

[270] World Economic Forum, 2019. The Travel & Tourism Competitiveness Report 2019: Travel and Tourism at a Tipping Point.

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