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# **Green transition in Africa: IMPLICATIONS FOR SWEDEN AND THE EU**

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This paper explores green transition dynamics in Africa by analysing drivers and bottlenecks and what that could mean for Sweden and the EU's engagement with the African continent in the context of the EU Green Deal.

Green transition is increasingly gaining traction in Africa. All 54 African countries signed the Paris Agreement and the African Union's development goals in its Agenda 2063 envisage green economies in Africa.

On the other side of the Mediterranean, the European Union has its Green Deal to achieve net zero greenhouse gas emission. But the success of this initiative depends partly on its ability to inspire and support green transition and effective climate action around the world. So how can the EU and its member states, specifically Sweden, better ensure that Europe's green transition speaks to the priorities of African countries, and does not come at the cost of development and stability of its partners?

Key issues discussed in the paper are:

- African countries take different pathways to achieve green transition, and need to be supported to transition at a pace and scale that allows them to build relevant capacities and mitigate losses.
- The lack of financing and investments, exacerbated by weak policy environments and lack of (green) capacities, is a critical challenge in Africa and merits attention in EU-Africa relations.
- There is a considerable risk that the urgency to boost employment and economic growth in Africa will overshadow climate change and environmental issues. Through appropriate diplomacy, Sweden and the EU can support climate action that is linked with job creation.

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## Acronyms

ADB	Asian Development Bank
AfDB	African Development Bank
AGSP	African Green Stimulus Programme
AIIB	Asian Infrastructure Investment Bank
AU	African Union
AUC	African Union Commission
AUDA-NEPAD	African Union Development Agency – New Partnership for Africa’s Development
BFS	Bureau for Food Security
BNEF	Bloomberg New Energy Finance
CIAT	International Center for Tropical Agriculture
DRC	Democratic Republic of the Congo
EBRD	European Bank for Reconstruction and Development
ECDPM	European Centre for Development Policy Management
EIB	European Investment Bank
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FLEGT	Forest Law Enforcement, Governance and Trade
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDBG	Inter-American Development Bank Group
IEA	International Energy Agency
IGAD	Intergovernmental Authority on Development
INTPA	Directorate General International Partnerships
IRENA	International Renewable Energy Agency
IsDB	Islamic Development Bank
NDB	New Development Bank
NDC	Nationally determined contribution
OECD	Organisation for Economic Co-operation and Development
PGM	Platinum group metals
PV	Photovoltaic system
RVO	Rijksdienst voor Ondernemend Nederland

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UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNU-INRA	United Nations University – Institute for Natural Resources in Africa
USAID	United States Agency for International Development
WBG	World Bank Group
WHO	World Health Organisation
WRI	World Resources Institute
WWF	World Wildlife Fund

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## 1. Introduction

Green transition<sup>1</sup> is increasingly gaining traction in Africa. All 54 African countries have signed the Paris Agreement, while most have ratified it and submitted their nationally determined contributions (NDCs) to the UNFCCC (AfDB 2018). As part of their efforts towards climate mitigation, activities in the NDCs predominantly focus on energy (Hackenesch et al. 2021). At the same time, there is also a strong commitment to adaptation in the African NDCs (ADB 2019). A number of countries including Burkina Faso, Egypt, Ethiopia, Ghana, Kenya, Rwanda, Senegal, South Africa, Morocco and Tunisia, are developing green economy strategies along with investing in green sectors such as waste management, sustainable cities and green energy (UNU-INRA 2021).

At the continental level, ambitions for a green transition are reflected in African Union (AU) policy frameworks. The Agenda 2063, which outlines Africa's development goals for the next 50 years, envisages green economies in Africa (African Union Commission 2015). More recently, to support the continent's recovery from COVID-19, an African Green Stimulus Programme (AGSP) was proposed by African environment ministers at the eighth special session of the African Ministerial Conference on Environment (African Green Stimulus Programme 2021). Based on this, the AU launched the AU Green Recovery Action Plan 2021-2027, which aims to support the realisation of the stimulus programme (African Union 2021). In the same spirit, green economic development has become a key priority for institutions such as the AU Development Agency – New Partnership for Africa's Development (AUDA-NEPAD) and the African Development Bank.

On the other side of the Mediterranean, the European Union has a 'Green Deal' that defines a long-term growth plan with the aim to achieve net zero greenhouse gas emissions by 2050. The European Green Deal is an overarching roadmap coordinating a set of policy initiatives in areas including biodiversity; food, fisheries and agriculture; clean energy; sustainable industry; eliminating pollution; and climate action (European Commission 2019). While the Green Deal is primarily focused on the EU territory, the EU aims to incorporate climate and green transition in all its external partnerships, including with Africa. The EU envisages green transition and energy access as one of the five focus areas of the Africa - EU partnership (European Commission 2020a). In the context of the sixth EU - AU Summit, leaders from both continents committed to a renewed partnership, with a strong focus on green transition. EU member states and institutions are acutely aware that the success of the European Green Deal depends partly on its ability to inspire and support green transition and effective climate action around the world. In line with this, Sweden is strongly committed to transition to a fossil-free society and to protect the environment, and is a strong supporter of the European Green Deal and the EU's role in a global green recovery.<sup>2</sup>

While it is yet early to predict the consequences of the ongoing war in Ukraine, the crisis can be expected to have a significant impact on the EU and its relationship with other parts of the world, including Africa. A more inward-looking approach to accelerate Europe's renewable energy transition could divert attention and resources away from supporting Africa's green energy transition (Medinilla 2022). At the same time, the energy crisis can present an opportunity for Europe to forge sustainable energy partnerships with its southern neighbours to relieve its dependence on Russian gas.

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<sup>1</sup> The United Nations Environmental Programme (UNEP) defines the green transition term within a broad economic, social and environmental agenda. It considers a green economy to be "low-carbon, resource efficient, and socially inclusive" (see [Green Economy](#), UNEP). In essence, transition towards a green economy enables economic growth and investment while enhancing environmental sustainability and social inclusiveness. Countries diverge on what a green economy means in practice and with approaches evolving over time, which this paper will also illustrate.

<sup>2</sup> See for example the [Council conclusions on Team Europe Global Response to COVID-19](#) (2020) and [Sweden's response in the global fight against the COVID-19 pandemic](#).

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So how does the European Green Deal and the EU's approach to climate and energy in its external action land in specific African contexts? Are there differences in the way the EU and Africa approach green transition? How can Sweden and the EU more broadly better respond to African countries' interests in a green transition and find common ground between the way the green transition is approached in Africa and the EU? Answers to these questions are important to shape an effective partnership in this area. It is important to ensure that Europe's green transition speaks to the priorities of African countries, and does not come at the cost of development and stability of its partners, allowing low-income countries and historically low greenhouse gas emitters to benefit from a global green transition movement. This paper therefore focuses on the key drivers and bottlenecks relating to a green transition in Africa, and what that could mean for Sweden and the EU's engagement with Africa in the context of the European Green Deal. The findings can inform climate diplomacy efforts of Sweden and the EU more broadly.

Data for the paper has been collected through desk review and a select number of online interviews.<sup>3</sup> The following section (2) will explore the key driving and hindering factors for a green transition in Africa. Based on this, section 3 discusses the implications for Sweden and EU's engagement with Africa, followed by a concluding section (4).

## 2. Key drivers and bottlenecks

### 2.1. Vulnerability to climate

Africa is the most vulnerable continent to climate change impacts worldwide. Out of the ten countries in the world most threatened by climate change, seven are African (AfDB 2018). These are the Central African Republic, Chad, Eritrea, Ethiopia, Nigeria, Sierra Leone and South Sudan. Accordingly, the AU and African countries have prioritised adaptation as a key element of a transition towards a green economy, particularly adaptation in the agriculture sector. With few countries having diversified in other sectors, **agriculture is the main economic backbone for Africa and the primary source of food and income** for people. Farming provides an estimated 60% of all jobs on the continent (Diop 2016). This makes it vital to respond to growing threats that climate change poses for the sector. Rising temperatures will continue to lower yield and increase the risks of diseases and extreme weather events such as floods and drought. The current cropping areas of crops such as maize, millet and sorghum across Africa are at risk of becoming unviable (Cilliers 2021). This has contributed to the decline in Africa's share of international agricultural exports over the last 40 years, and a continued growth in food imports (AfDB 2016). The effects will be compounded by a rapidly increasing population which will continue to demand more food. The ongoing Ukraine crisis is also expected to worsen food security for African countries that depend on food imports from Ukraine. North African countries such as Egypt, Tunisia, Algeria are heavily reliant on wheat from Ukraine (Knaepen and Dekeyser 2022). In only a short period the war in Ukraine has led to food shortages and a rise in international food prices.

At the same time, agriculture is a key contributor to climate change. It is responsible for 90% of deforestation on the continent and two thirds of the greenhouse gas emissions generated in Africa (FAO 2020). The successful implementation of climate-smart agriculture is therefore crucial in the transition towards a green economy in Africa.

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<sup>3</sup> The following people have been interviewed: Carla Montesi, Director at Directorate General International Partnerships (INTPA), European Commission; Ivan Amanigaruhanaga, Engagement Manager, Clean Energy Transition, Africa at World Resources Institute (WRI); Jean-Paul Adam, Director, Technology, Climate Change and Natural Resource Management Division at United Nations Economic Commission for Africa (UNECA); and Saliem Fakir, Executive Director at the African Climate Foundation.

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### Box 1: Mali's path to resilient agriculture

Agriculture is extremely important to Malian people and their economy. About 80% of the population derive their income from agriculture, which is the country's main engine of economic growth, poverty reduction and food security (FAO 2017). This economic and social stability is however threatened by climate change. The country is experiencing rising temperature, a fall in rainfall and an increase in desertification, along with greater likelihood of extreme weather events such as droughts and floods. Given that two-thirds of the total land area in Mali is already covered by desert and unsuitable for agriculture, sustainable management of fragile land and water is critical (CIAT et al. 2020). To confront climate risks, the Malian government has defined key strategies and interventions to promote climate smart agriculture. The Mali Climate Fund is deemed an important opportunity to mobilise funds from various sources for climate smart agriculture and align those to the national climate change strategy. Moving forward, private sector engagement in climate finance for agriculture needs to be enhanced.

Climate-smart agricultural practices need to be adopted in tandem with **nature-based solutions to improve food security, preserve biodiversity, and create economic opportunities**. Nature-based solutions are actions that protect, sustainably manage and restore ecosystems to address challenges such as climate change and provide human well-being ([Nature-based solutions](#), UNEP). In the case of Africa, the priority is on sustainable land management, forestry, oceans and ecotourism. Combating land degradation, desertification and drought is essential given that populations and ecosystems in Africa's dry lands are some of the most vulnerable to climate change impacts. Africa envisages to restore and sustainably manage 100 million hectares of land while creating 10 million jobs by 2030 (African Union 2021). In addition, while forests can support economic growth and ensure food and environmental security, African forests are shrinking at an alarming rate (Chukwu 2020). Recognising the importance of the forest sector, several African countries are making efforts towards sustainable forest management, including by updating national forest policies (Benin) and forest codes (Gabon). Several countries that are home to the largest forests in Africa have also signed Voluntary Partnership Agreement on Forest Law Enforcement, Governance and Trade (FLEGT) with the EU which aims to combat illegal logging and promote trade in legally produced timber. This includes Cameroon, the Central African Republic, Ghana, Liberia and the Republic of Congo.<sup>4</sup> There is also a growing emphasis on the development of the blue economy in Africa, which would help mitigate the impacts of natural disasters such as floods and cyclones, as well as contribute to the livelihoods of people living in coastal and riparian areas. Finally, the African Union Green Recovery Action plan underscores the importance of revitalising environmentally and socially responsible ecotourism that promotes conservation, a sector that was especially affected by the covid pandemic (African Union 2021).

## 2.2. Pollution

The continent's population is projected to double between now and 2050 and two-thirds of this growth will be absorbed by urban areas (OECD 2020). This rapid growth in population and urbanisation has resulted in dangerous levels of urban air pollution in several parts of Africa, while increasing pressure on scarce resources. In parallel, the industrialisation agenda of most countries has fueled the demand for raw materials, and has given rise to poorly managed industrial waste (Abubakari et al. 2016). This is further compounded by imports of waste and second-hand products that often end up in landfills owing to a lack of recycling/sorting capabilities, as well low-quality of imported materials and products (Ashraf and van Seters 2021). Rising levels of pollution (including from waste) are both an environmental challenge as well as a health hazard, especially for people living in urban areas. Fast-developing African countries such as Egypt, Ethiopia, Nigeria and South Africa, are particularly affected by the challenge posed by air pollution (UNECA 2021). South Africa's eastern Mpumalanga province has the world's most polluting cluster

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<sup>4</sup> Côte d'Ivoire, Democratic Republic of the Congo and Gabon are currently negotiating the agreements. See [EU FLEGT Facility](#).

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of coal-fired power stations in the world (Meth 2018), while also being one of the top 20 countries with the highest mismanaged waste (WWF 2020). **Addressing pollution, including marine litter and pollution, enhancing waste management and more broadly promoting circular production and consumption are thus priorities for Africa**, as proposed by the African Green Stimulus Programme (2021). There is also a recognition that circular economic pathways can support job creation and economic growth, while contributing to the achievement of the Sustainable Development Goals (Bertelsmann-Scott 2020). Investing in recycling/refurbishing sectors can reduce waste going to landfill, while creating opportunities for job creation and economic diversification (Ashraf and van Seters 2021).

More broadly, **as Africa is rapidly urbanising, there is a need to develop sustainable urban models**. African cities, including unplanned urban areas and informal settlements, are at risk of climate change impacts and contribute to greenhouse gas emissions. Several urban centres in Africa have experienced disasters in recent years, most particularly flooding and landslides (IGAD 2020). Water security is a major issue facing cities across Africa, creating vulnerabilities for human well-being and development (van den Berg et al. 2021). In addition, rising urban development can contribute to increased emissions for instance by fueling the demand for energy and transport. As such, the challenge is to build appropriate housing and infrastructure for green growth and low-carbon/resilient development in African cities. In this regard, (green) technologies can help promote the development of smart green cities. The continent's booming young population is also an advantage as young people are more likely to adopt smart city technology and can be a source of innovation.

### Box 2: Rwanda's green cities initiative

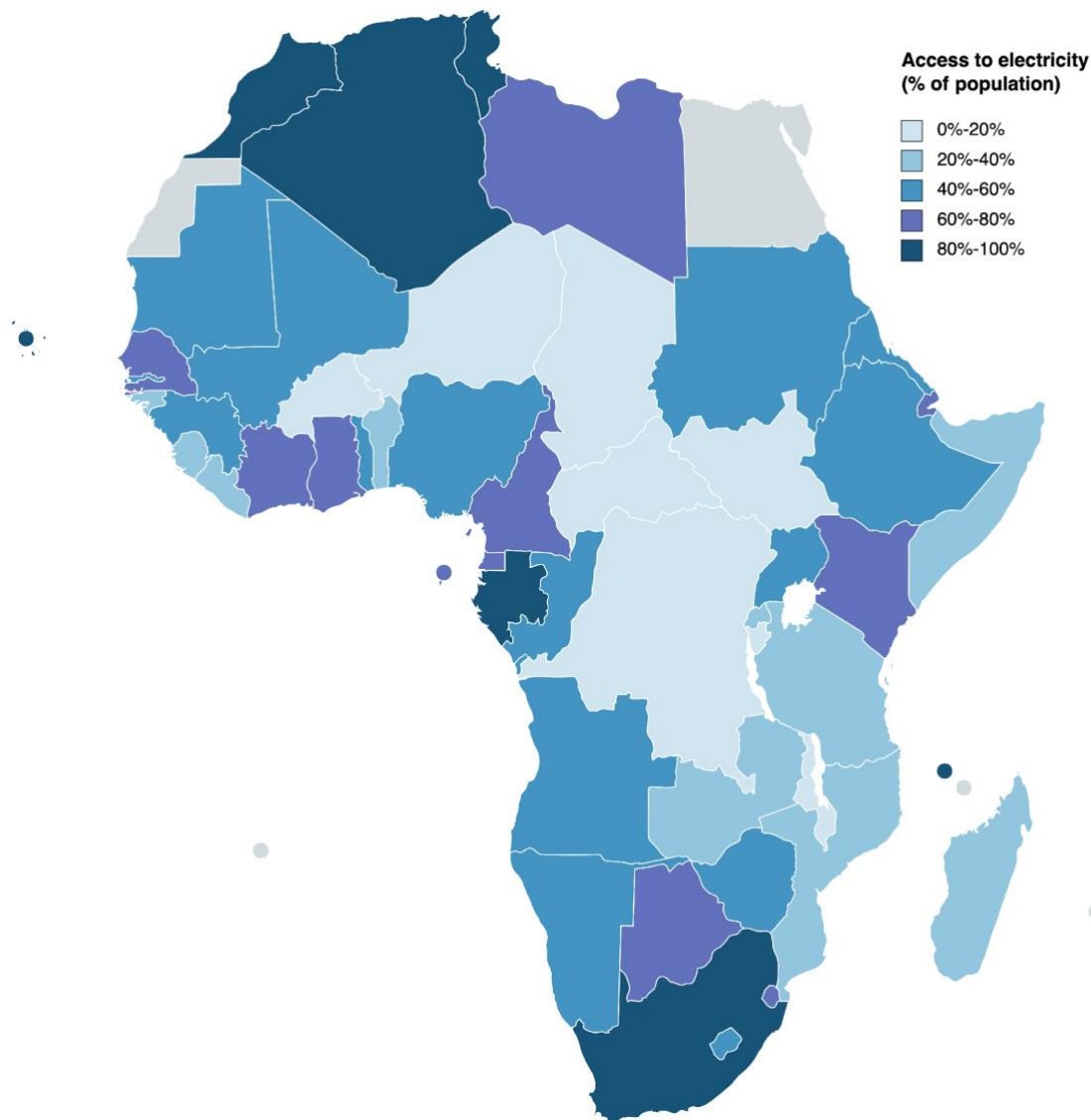
Rwanda is one of the most densely populated countries on the African continent. Its cities, in particular, continue to grow – with the capital Kigali expanding at the fastest rate. Affordable living space however is scarce and basic urban infrastructure is lacking. Climate risks continue to grow. Rwanda experiences more frequent heavy rain, flooding and landslides, with particularly severe effects in the heavily populated urban areas. To respond to these challenges, Rwanda has designed and implemented a broad set of policies and programs to steer green transformation in its cities (Niyonzima 2020). Recently the Government of Rwanda has launched the 'Green City Kigali' programme, which includes the construction of environmentally sound housing, climate-adapted infrastructure and extension of the public transport system ([A green district for the city of Kigali](#), KfW). This is pioneered to be Africa's first green city project, with the aim of showcasing the viability of green cities using green technologies and innovations. The government has received support from Germany for the project.

## 2.3. Energy demand and potential for renewable energy

Driven by rapid population growth and expanding economies, **energy demand in Africa is expected to nearly double by 2040** (IRENA 2019). At the same time, nearly half of the continent's population currently lacks access to electricity (IEA 2019). While energy access is an issue across the continent, there are large differences between countries, as the map below shows. Businesses across different industries are also held back due to lack of affordable and reliable supply of energy. Achieving universal energy access is critical to resilient and sustainable economies and societies and is therefore a top priority for Africa. Energy provision is a fundamental element of Agenda 2063, which aspires for a 50% increase in energy access compared to 2013 levels and to increase the efficiency of household energy use by 30% before 2023 (African Union Commission 2015).



Figure 1: Varying levels of energy access across the African continent



Source: Authors based on the World Development Indicators of the World Bank

Considering Africa’s abundant resources that can be used to produce renewable energy, investments in promoting cost-competitive renewable energy can help close the access gap and avoid potential fossil-fuel lock-in. It is estimated that by using solar, wind and geothermal power, Africa has the potential to generate over 26 times what is currently generated, which amounts to approximately 90% of the energy produced worldwide in 2018 (Vigotti 2021). A series of renewable energy programmes are being developed in several African countries. For instance, Morocco, Tunisia, South Africa and Egypt have adopted wind as alternative power generation source (Mas'ud et al. 2017). The majority of the increase in power production in Kenya in recent years is derived from renewable energy (Africa Oil and Power 2020). However, despite these developments, it is estimated that a mere 2% of global renewable energy capacity was installed in Africa in the last ten years. The continent with the richest solar resources in the world has so far installed less than 1% of global solar energy capacity (IEA 2019). There is thus **an incredible opportunity for African countries to leapfrog fossil fuel technologies and prioritise clean energy investments.**

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Utility scale renewable energy can improve electricity penetration in a country, while the use of mini- and microgrids could bring electricity to remote areas.

In addition to enhancing access to energy in Africa, investing in renewable energy can potentially contribute to export earnings. Given the growing push to move towards cleaner energy systems, including in the EU, global demand for renewable energy is on the rise. With respect to the EU, **exports of clean hydrogen from Africa** is an area that merits consideration.

Hydrogen is part of the EU's strategy to decarbonise its energy system and a hydrogen strategy has been developed in the context of the green deal. The aim is to install 80 gigawatts of renewable hydrogen electrolyzers by 2030, of which 40 gigawatts to be imported from Europe's neighbourhood (European Commission 2020b). North Africa in particular is being considered as a supplier of renewable hydrogen to the EU, given its proximity to Europe and renewable energy potential (Leonard et al. 2021). Some African countries are already developing strategies to take advantage of the opportunity. For instance, Morocco has established a National Hydrogen Commission and developed a Green Hydrogen Roadmap.<sup>5</sup> In parallel, EU transition towards a green economy would reduce its demand for fossil fuel imports, including from Africa. Major oil exporters such as Algeria, Libya, and Nigeria, which together account for more than 18% of Europe's crude oil imports are likely to experience decline in exports to the EU (Usman et al. 2021). At the same time, the ongoing crisis in Ukraine could potentially increase demand for African gas. The EU has announced its plan to reduce its dependence on Russian gas, which at present accounts for 40% of the EU's total gas consumption (European Commission 2022a). This may create new opportunities for energy rich African countries who could partly replace the role of Russia as a major energy provider to Europe. Ramping up gas supply from African countries, however, would require significant investment in production capacities and infrastructure, which will be challenging at least in the short term (Medinilla 2022).

Notwithstanding the benefits of enhanced renewable energy investments, there are **opportunity costs of leaving fossil fuels in the ground**. Many African states possess significant fossil fuel reserves on which they rely heavily both for domestic consumption and exports. For instance, in South Africa and Botswana, coal accounts for more than 90% of energy production<sup>6</sup> while in countries such as Algeria, Angola and Nigeria, fossil fuel exports represent approximately 95% of total export revenues.<sup>7</sup> For these countries a move away from fossil fuels means potentially stranded assets as well a loss in jobs and revenues, at least in the short run. To take the example of South Africa, in 2019 around 200,000 workers were employed in the country's coal mines, coal power plants and coal transport (World Resources Institute 2021). These coal workers, if displaced, would likely struggle to find new jobs, given the country's high rate of unemployment, reaching 35% in late 2021 (Reuters 2022). The issue of stranded assets and job losses, therefore, needs to be tackled to avoid constraining other areas of development.

In addition, new discoveries of fossil fuels continue to be made. Countries such as Kenya and Niger have recently made significant discoveries of oil, gas or coal, and it may be politically sensitive to demand that these reserves are not utilised (Hackenesch et al. 2021). It may make sense for these countries to invest in renewable technologies, while in parallel continue fossil fuel exploitation to fulfil domestic energy demand and contribute to export revenues. Kenya, for example, is developing the continent's largest wind farm in the Lake Turkana region, an area where it is also developing oil reserves (Benkenstein and Chevallier 2020). These trends illustrate the challenge of achieving a comprehensive green transition on the continent.

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<sup>5</sup> See [Green Hydrogen Initiative in the Context of the European Green Deal](#), Moroccan Ministry of Energy, Mines, and Environment; [Green Hydrogen Roadmap: Vector of Energy Transition and Sustainable Growth](#), Kingdom of Morocco.

<sup>6</sup> See World Bank database: [Electricity production from coal sources](#).

<sup>7</sup> See World Bank database: [Fuel exports \(% of merchandise exports\)](#).

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## 2.4. International demand for green products and raw materials

Global efforts to move towards carbon neutrality and greener economic systems are giving rise to **stricter carbon/environmental policies and regulations** around the world, not least in the EU. A key development in this regard is the Farm to Fork Strategy, which is a cornerstone of the EU Green Deal. As part of the policy package, the EU aims to become a global leader in setting sustainable food standards, and compliance with these standards will become a precondition for placing food products on the EU market (European Commission 2020c). In a similar vein, the Circular Economy Action Plan, which also forms part of the European Green Deal, announced the Sustainable Product Policy that aims to make sustainable products the norm. The core of this legislation is a revision of the Ecodesign Directive to establish sustainability standards for a wide range of products (European Commission 2020d). Such policy measures, together with sustainability standards and regulations mushrooming in other parts of the world, can provide an incentive for exporting African countries to move towards greener agricultural and manufacturing practises to access global markets. As such, transitioning or leapfrogging into greener economies would bolster Africa's international competitiveness.

Moreover, Africa is home to many of the '**green minerals**' required for **low-carbon technologies**. It is projected that the global shift towards clean energy systems is set to drive a huge increase in the demand for certain critical raw materials. To illustrate, the demand for lithium is expected to grow over forty times, while demand for graphite, cobalt, and nickel is expected to grow by around 20 to 25 times by 2040. (IEA 2021). Mirroring global demand, input of these materials for batteries, fuel cells, wind turbines, and photovoltaic systems for renewables and electric vehicles in the EU will grow megafold in the coming years. In 2030, compared to the current supply, the EU would require five times more cobalt, for instance, and eighteen times more lithium in 2030 (European Commission 2020e). Mineral-rich countries in Africa are thus likely to experience a rise in demand for cobalt, nickel, lithium and other critical minerals. At present 64% of bauxite demand in the EU is imported from Guinea, 68% of cobalt from the Democratic Republic of the Congo (DRC), and about 90% of the platinum group metals (PGM) from South Africa, to give some examples (European Commission 2020e). Several other countries, including Zambia, Ghana and Zimbabwe have the potential to supply copper, PGM, and bauxite to Europe as well.

The rise in global demand for such materials creates economic opportunities for African countries and acts as a driver for green transition. Importantly **investing in value addition to increase local content** is required to create wealth and jobs locally and reduce dependencies on exports (interviews; UNU-INRA 2021). In addition, it is important here to recognise that opportunities to exploit the rising global demand for critical green minerals should not exacerbate the existing human right abuses and environmental degradation rampant in the extractives sector in several African countries. The text box discusses the case of the Democratic Republic of the Congo (DRC) as a supplier of green minerals.

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### Box 3: DRC's potential as a supplier of green minerals

The Democratic Republic of the Congo (DRC) is endowed with green minerals, particularly those used in lithium-ion batteries. It currently accounts for nearly 70% of the world's cobalt production (WEF 2020), which makes the country an important player in the global energy transition regarding energy storage and electric mobility. In addition to cobalt in DRC, the African continent is blessed with significant reserves of manganese, graphite, copper, and other minerals which are components of the lithium-ion batteries. This provides opportunities to develop regional value chains for batteries, electric vehicles, and renewable energy. However, DRC, like other countries in Africa, is failing to capitalise on the extraction of these strategic minerals. As a commodity exporter, the country is still locked in the mining and mineral processing stage, and is stuck at the bottom of the global battery and electric vehicle value chain. At present the DRC only captures 3% of a total global value that is expected to reach US\$ 8.8 trillion by 2025 (Bloomberg NEF 2021). Moreover, cobalt mining in the DRC is rife with child labour and frequent violent political conflicts (Raji, 2021). This points to the critical need to create more value locally, strengthen productive capacities and promote sustainable mining and production.

## 2.5. Enabling environment and access to finance

One of the major challenges constraining green transition in Africa is a lack of **financing and investments**. Current levels of climate finance are insufficient to meet the region's climate mitigation and adaptation finance needs, which is considered a key hindrance to the successful implementation of African NDCs (AfDB 2018). With respect to energy, it is expected that the continent will require an annual investment of US\$70 billion until 2030 in order to achieve a clean energy transformation (IRENA 2020). While the cost of renewable energy generation has gone down over the years, rapid upscaling is hampered by limited access to affordable finance. Similarly, by 2050, it has been estimated that Africa's adaptation costs could rise to USD 50 billion per year for the scenario of holding global warming below 2°C, and up to USD 100 billion per year by 2050. (Africa Adaptation Initiative 2018). Since public funds are insufficient to meet the scale of investment required, leveraging greater private sector financing is critical for Africa to accelerate its green transition.

Private investments however are limited in many African countries. Less than 12% of infrastructure investment in Africa currently comes from the private sector, and mainly through foreign investment (UNECA 2021). In 2018, Africa received less than 1.5% of global investment in renewable energy, which was primarily directed to projects in only five countries, namely Egypt, Kenya, Morocco, South Africa and Zimbabwe (Frankfurt School-UNEP Centre/BNEF 2020). The limited participation of the private sector is a consequence of a wide range of factors, including a lack of appropriate **governance framework and enabling regulatory environment**. In the energy sector, poor management of utilities, a lack of transparency in energy procurement, high risk profiles of energy investments and limited capacity of Africa's financial sector are some of the challenges inhibiting private investment and finance (UNECA 2021; Omoju 2020).

Moreover, to effectively respond to the challenges and opportunities for a green recovery, there is an urgent need to strengthen **capacities** at various levels. With respect to energy, inefficiencies and inadequacy of transmission and distribution **infrastructure** in the power sector have limited the uptake of renewables. Power systems in several African countries are plagued by frequent outages and grid instabilities, owing to insufficient investments in distribution grids and generation capacities (KfW Development Bank, GIZ and IRENA 2021). Weak electricity supply infrastructure acts as a barrier to introducing utility scale renewables, such as wind power and solar PV. Insufficient **human resources** and lack of availability of required **technologies** pose further constraints. Upskilling is required to develop context-specific solutions in key sectors related to green transition, such as sustainable industrial hubs, sustainable manufacturing, climate-smart agriculture and waste infrastructure (UNECA 2021). Most African

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countries also consider restricted access to technology a key barrier to the implementation of their NDCs (AfDB 2018). For instance, in the realm of climate adaptation, there is a need for technologies that generate climate information, promote early warning systems, and support data collection, analysis and storage (AfDB 2019).

Climate information, and more generally **data** related to green transition in Africa is inadequate, which hinders effective policy making and implementation. The African Green Stimulus Programme considers the availability of appropriate data and information essential in supporting the green recovery in Africa (UNEP 2020). The limited availability of reliable weather and climate information both at country and regional level is a barrier to addressing climate risks (Singh et al. 2017). Additionally, better data on emissions from different sectors can also help African countries identify opportunities for reducing emissions while addressing development and resilience goals and supporting efforts to raise climate funds (AfDB 2018). There is also a dearth of information on the costs of environmental degradation and natural resource depletion and, relatedly, the impacts of a transition to a green economy, which complicates policy making and makes it challenging to justify investments (Chukwu 2020).

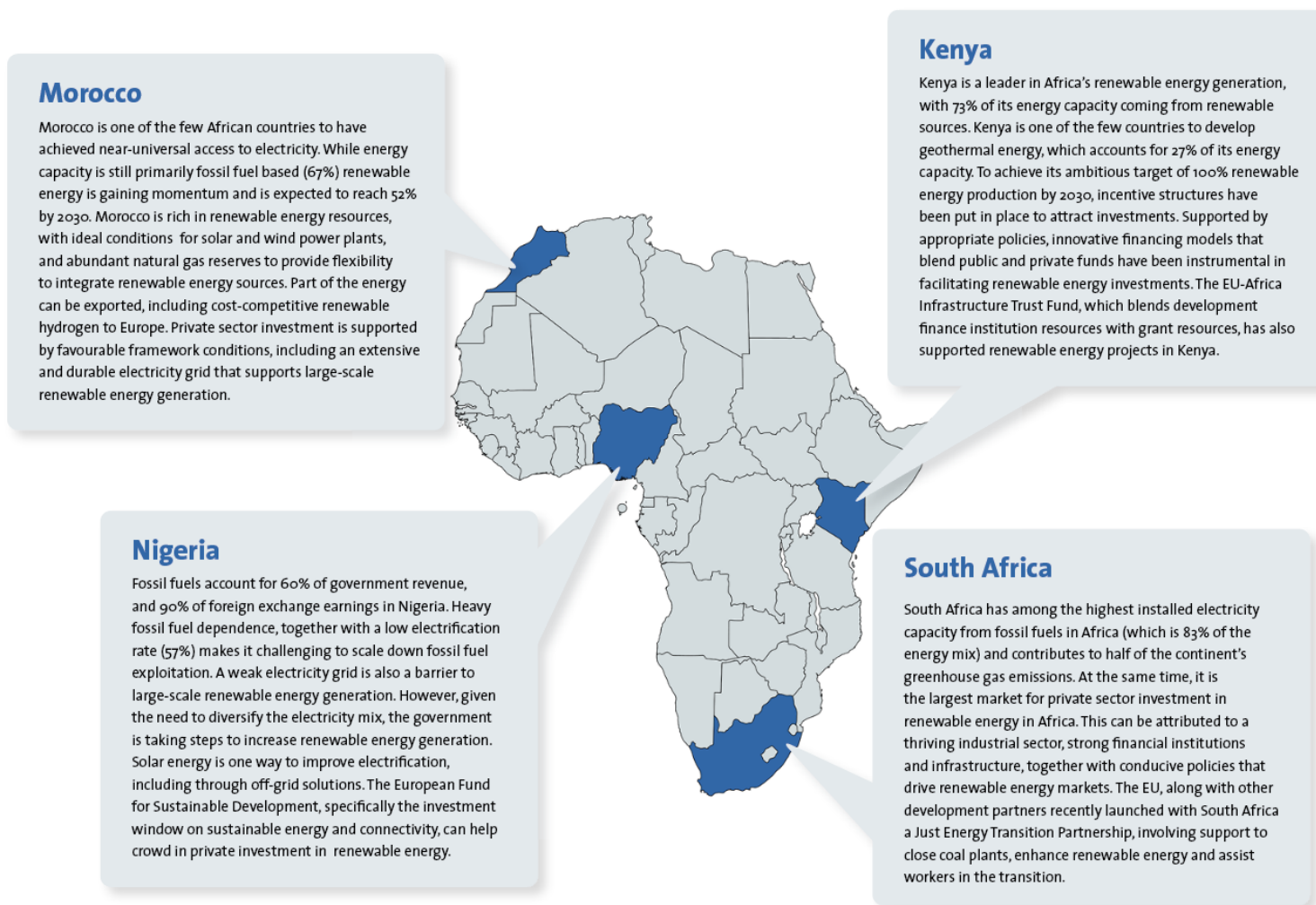
### 3. Implications for Swedish and EU climate & environmental diplomacy efforts

The drive towards green transition in Africa is dependent on a number of different factors, as discussed above. It is relevant here to recognise that the **challenges and opportunities of a green transition vary between countries** and are dependent on the different local contexts. Countries that are most vulnerable to climate risks have an incentive to promote resilient economic growth, particularly to adapt the agriculture sector as well as protect biodiversity. Combating land degradation, desertification and drought is critical for Africa's dry lands, while countries with significant forest cover are driven to protect and harness the potential of forests. Fast-developing African countries that are particularly affected by air pollution have stronger incentives to invest in waste management and circular production and consumption more broadly, while rapidly urbanising countries can reap benefits from developing smart green cities. Moreover, a lack of access to energy as well as an abundance of certain renewable sources can drive the move towards cleaner energy systems in some countries, at the same time countries rich in fossil fuels have a disincentive to leave reserves in the ground that can potentially close energy access gaps and generate export revenues. Exporting countries may also be driven by changing sustainability standards globally, while mineral-rich countries may specifically profit from a rising global demand for green minerals. Finally, access to finance and private sector investments for green transition are incumbent on the policy environment and capacities of each country, conditions that are often lacking.

While the situation differs between countries, it appears that the potential challenges and disincentives of accelerating green transition in Africa weigh heavily on the political will to take the green agenda forward. The African Green Stimulus Programme highlights the major risk of insufficient buy-in from the African Union, Member States, and other partners to adopt green transition as part of their efforts towards sustainable recovery from the pandemic (African Green Stimulus Programme 2021). It acknowledges that in the **urgency to boost employment and economic growth** – the risk is high that dealing with the impacts of climate change and environmental issues will not receive sufficient attention.

The map below illustrates how varying drivers and bottlenecks in different countries influence the trajectories towards green transitions, focusing on the energy sector in Kenya, Morocco, Nigeria and South Africa. It also provides insights into the implications for engagement of the EU and its member states with these countries. The following subsections further discuss the implications for Sweden and the EU more generally, not limited to these four country examples.

**Figure 2: Pathways to sustainable energy: exploring different contexts**



Sources: South Africa is based on IRENA 2021a; KfW Development Bank, GIZ and IRENA 2021; National treasury of South Africa 2010; [Political Declaration on the Just Transition in South Africa" - document from COP26](#); and interviews. Morocco is based on IRENA 2021b; [Green hydrogen from Morocco – no magic bullet for Europe's climate neutrality](#), [Bauke Baumann](#), HEINRICH-BÖLL-STIFTUNG 2021; and interviews. Nigeria is based on Okoh 2020; IRENA 2021c; and RVO [2021](#). Kenya is based on IRENA 2021d; Somorin and Nduhiu 2020; and EIB 2020.

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### 3.1. Finding common ground

In order to support Africa in its green transition efforts, it is vital to recognise the **differences in the way the EU and Africa approach green transition**. Given Africa's low historical emissions compared to more industrialised nations, the continent does not have the same transition imperative as the EU. African countries have contributed insignificantly to climate change but are severely affected by it, while the EU is a major historical contributor to global emissions and continues to have high per capita emissions. Africans thus consider it unfair to be asked to make costly transitions that leave them with stranded assets when they have not caused the global climate crisis (Medinilla 2021). The sentiment is portrayed in a speech by the late Prime Minister of Ethiopia, Meles Zenawi, who notes that Africa will be "doing humanity as a whole and in particular those who created the problem an enormous service", if it takes the green development pathway.<sup>8</sup>

Relatedly, it is relevant to be aware that green transition-related terminology may differ **in Africa and in Europe**. The term 'green transition' itself can elicit different connotations in both continents. European actors may point to a transition from high energy consuming and polluting industries to more environmentally friendly industries. This doesn't resonate in many African countries, in early stages of industrialisation with low carbon emissions, low energy consumption and relatively low waste outputs (ECDPM 2021a). What may speak to these countries is emphasis on leveraging green technologies for their industrialisation trajectories, thus contributing to creating jobs and value addition. Some African actors also call for the use of the term 'green access' rather than 'green transition', the former implying the crucial need to electrify the continent rather than only focusing on cutting emissions by transitioning from fossil fuels to renewables (interviews; ECDPM 2021b). Another example is the emphasis on lifestyle changes and more sustainable consumption choices related to food and other products, which may not resonate with Africans whose primary concern is food insecurity on the continent (interviews).

In this context, it is important for fruitful EU - Africa cooperation for a global green transition, to **find common ground between the way the green transition is approached** in Africa and the EU. At present there is incomplete understanding of the external dimensions of the European Green Deal, which is primarily a domestic growth strategy (Teevan et al. 2021). Greater appreciation of how the policy measures in the EU, Sweden and other member states land in African contexts is needed (interviews). In particular understanding the impact on different countries is important, given that the drivers and challenges of embarking on a green transition varies between countries. While a green transition is in the interest of both Africa and Europe in the long run, appropriate diplomacy that builds on mutual benefits is needed.

As a crucial starting point, EU/Sweden **green transition initiatives in relation with Africa need to speak to (local, national, cross-country) African priorities**. While in Sweden and the EU more broadly green transformation is widely recognised as a growth strategy that can contribute to job creation, African actors often consider it primarily as a push towards climate action or even EU market protection, by fencing out African products from the EU market due to higher (social and environmental) standards (interviews). To transform this narrative, green transition efforts need to be better linked with the immediate concerns of many African governments such as achieving employment growth, industrialisation, modernisation of agriculture and broader socio-economic development (Benkenstein and Chevallier 2020). In this respect, highlighting and enhancing the potential benefits of green transition in creating (green) jobs, improving agriculture and food security, improving peoples' health, reducing climate-related conflicts, and enhancing energy access is key to gain acceptance from African partners and stakeholders involved. Efforts could include for instance investing in those areas of the green transition that are labour-intensive, **supporting**

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<sup>8</sup> See [Keynote address by H.E Mr Meles Zenaw, Prime Minister of the Federal Democratic Republic of Ethiopia, on "Green Economy and Structural Transformation in Africa"](#), 25 October 2011.

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**education and retraining and providing transitional income support** that can potentially be funded by environmental taxes or diverting (some) fossil fuel subsidies (Hogl and Iacobuta 2020, Hackenesch et al. 2021). Additionally, NaturAfrica, the EU-Africa strategy on biodiversity under the banner of the European Green Deal, could be aligned more closely with Africa's biodiversity priorities (Usman et al. 2021).

It may be particularly fruitful to **reinforce and complement greening of existing initiatives** with traction on the continent. Given the high-level political momentum around the African Continental Free Trade Area (AfCFTA), the agreement can be used to promote green trade in Africa, for example, by promoting environment-friendly protocols (interviews, UNU-INRA 2021). This can create incentives for greener investments from African and EU actors. In addition, existing trade agreements between the EU and African countries can be used to promote greener development in Africa. This can relate for instance to provisions on technical standards, removing subsidies for fossil fuels, and market access for trade in greener goods and services (UNEP & IRP 2021). There is also a need to strengthen monitoring and enforcement of sustainability-related provisions of EU trade agreements. Relatedly, efforts to support green transition in Africa should provide value for African countries and its citizens (interviews). As mentioned earlier, a mutually supportive partnership that helps to increase local content and add value to Africa's natural resources ensures that the continent reaps the most benefit from its transition towards a green economy.

### 3.2. Supporting a just and inclusive transition

A just transition seeks to ensure that a transition towards a climate-neutral economy happens in a fair way, with benefits shared widely and leaving no one behind. There is a general criticism that the discourse around low-carbon development focuses heavily on 'greening' while not enough attention is paid to 'justice' elements (UNU-INRA 2021). As mentioned earlier, a green transition can lead to significant stranded assets, risk of job losses and a loss of income, at least in the short term. The African Union Green Recovery Action Plan (2021) considers just transition to be "a complex and long-term process, which will be dependent on national circumstances, capabilities and the provision of adequate support". It is therefore important to **support countries to transition at a pace and scale** that allows them to build relevant capacities while limiting losses.

Particularly relevant in this regard is supporting energy transitions that push the continent towards carbon neutrality without compromising on rapid electrification and socio-economic development. Especially for countries dependent on fossil fuels reserves, **a gradual move towards less polluting and flexible fuel sources** is more appropriate, rather than jumping from 'dirty' to 'clean' energy (interviews). Gas for example can be considered as a bridging or transition fuel to provide cost-competitive flexible electricity (UNECA 2021). It is important to note that the term 'transition fuel' has different meanings in the EU and Africa (Medinilla and Knaepen 2022). While the EU sees it as a last resort to avoid worse outcomes such as coal, for many African countries natural gas is considered a means to accelerate their economic development and industrialisation. The divergence of views on natural gas between the EU and Africa was clear during the recent EU-AU summit, with the AU's current chairperson, Senegalese president Macky Sall, making it clear that halting gas financing would "deeply affect and thwart our efforts for social development" (African Business 2022).

In parallel, a just green transition in Africa involves protecting vulnerable communities from the risks posed by climate change. It is feared that the 'fast mitigation' race is overshadowing the adaptation agenda of Africa (Forsyth 2014). Pursuing mitigation at all costs without recognising the different adaptation needs and stages of development of different countries could worsen vulnerabilities, especially as countries emerge from the economic crisis brought on by the COVID-19 pandemic. One of the most contentious issues for Europe and Africa is agreeing on the relative priorities given to adaptation and mitigation, as well as ensuring that adaptation finance focuses on the agriculture sector, particularly in the LDCs. While the European Commission has over the years maintained high adaptation financing, European finance institutions have performed less well (Ahairwe and Bilal 2019). In 2020, just 10% of the



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climate finance from the European Investment Bank (EIB) and 14% from the European Bank for Reconstruction and Development (EBRD) went to climate adaptation support (AfDB et al. 2021). Sweden on the other hand has fared much better with a strong commitment to climate adaptation. From 2010-2018, 45% of its climate development finance commitments were for adaptation (Ashraf et al. 2020). Moving forward promoting green transition in Africa would require striking a **balance between climate mitigation and adaptation financing**.

Finally, the climate justice approach in Africa prioritises support to and involvement of marginalised groups. The AU Green Recovery Action Plan (2021) calls for an **'inclusive' recovery that leaves no one behind and ensures that marginalised groups**, including women and youth, are actively involved in green recovery. This is particularly relevant given Africa's growing youth population, and the associated challenges around youth unemployment. Vulnerable groups, including youth and women, several of whom rely on subsistence agriculture for income, have also been heavily affected by the covid pandemic (Di Ciommo and Ahairwe 2021). AU policy documents envisage young people to play an important role in Africa's green recovery plans, including their contribution to promoting digital technologies (African Green Stimulus Programme 2021; African Union 2021). Accordingly, Sweden and the EU more broadly would need to strengthen their climate justice approach to consider the specific challenges of marginalised groups and take those into account in support measures.

### 3.3. Using a smart mix of policies and instruments

As financing and investments are among the major challenges constraining green transition in Africa, Sweden and the EU more broadly can use a **diverse set of financial instruments**. The new Just Energy Transition Partnership of the EU, France, Germany, the United Kingdom and the United States with South Africa appears to be a good illustration. It seeks to support a move away from coal and accelerate South Africa's transition to a low emission, climate-resilient economy, with an initial commitment of USD 8.5 billion that will include grants, concessional loans and risk-sharing instruments to mobilise private finance (Pickard et al. 2021). As shown in Figure 2 above, it will cover support such as the closure of coal plants, strengthening the grid, generating more renewable energy and assisting workers in the transition. This is an innovative joint approach with a mix of financial instruments and support areas, which may provide relevant lessons for future cooperation with other fossil fuel dependent countries, facing stranded assets and job losses when seeking to enhance renewables in their energy mix.

When seeking to support renewable energy investments, it is important that **attention not only goes to energy generation, but also to distribution and transmission**, as the latter are also bottlenecks for renewable energy uptake (Hackenesch et al. 2021). Relatedly, **grid as well as mini/off-grid renewable energy investments merit attention**. Given the lack and unaffordability of extending transmission lines to remote rural areas in many African countries, decentralised mini-grid and off-grid renewable energy production can play an important role in enhancing energy access (African Union 2021). In 'green'-mineral rich countries, investments can be directed to develop **renewable energy hardware industries**, such as battery and solar photovoltaic manufacturing plants (Usman et al. 2021). In the short term, investing in the relatively less technical (albeit lower value) manufacturing of photovoltaic installations may be more feasible, as compared to battery production which requires greater technical capacity and pooling (mineral) resources from different countries. Beyond energy, an example of another investment area to support is **waste collection, sorting and recycling infrastructure** for different types of waste, such as plastics, e-waste and textiles (Ashraf & van Seters 2021). Leveraging Sweden's expertise as a pioneer in developing new green technologies in areas such as waste and recycling, solar power and smart grids can be particularly valuable in this regard (Ashraf et al. 2020).

As the previous section pointed out, (socially and environmentally sustainable) investments, and business operations more generally, are negatively affected by lack of enabling policy frameworks. Therefore, Sweden and the EU more broadly can **support the development and implementation of enabling policies, through political/policy dialogues**

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**and technical assistance.** As an example, collection, sorting and recycling infrastructure investments require enabling waste management policies, adapted to the context. Experiences in Sweden and the EU more broadly with Extended Producer Responsibility schemes can be shared, particularly with African countries considering or developing an EPR system, such as South Africa. Relatedly, the EU and its member states can usefully share experiences in developing regional policies and regulations, in waste management and resource recovery and beyond (UNU-INRA 2021).

There is also value in supporting African countries to develop and meet higher social and environmental sustainability standards of production to enhance their international competitiveness. An example is the EU sustainable cocoa initiative that brings together representatives of Côte d'Ivoire and Ghana – the two main cocoa producing countries – as well as representatives of the European Parliament, EU Member States, cocoa growers and civil society (EU Sustainable Cocoa Initiative, European Commission). The aim is to advance sustainability across the cocoa supply chain through collective action and partnerships, supported by technical assistance from the EU. Sweden and the EU can also promote the involvement of African countries in international processes of standards development, to ensure their needs and challenges are considered. More broadly, the EU and its member states can support African governments to better integrate greening into national policies. Sweden can draw lessons from its experience of integrating climate change in relevant foreign and domestic policies through concrete targets as laid down in its Climate Act (Government of Sweden 2017).

Research and innovation can play a role in aiding the design and implementation of policies, as well as facilitate investment decisions. Sweden is particularly well-placed to support African actors in this respect, given its strong tradition of investing in evidence-based research on climate impact and risks, and promoting collaboration among research institutes (Ashraf et al. 2020). As an example, Sweden as well the EU, can prioritise investments in scientific research on climate adaptation in the agricultural sector, while supporting linkages between science organisations and farmers and agriculture extension agencies in Africa (Hackenesch et al. 2021). There are also examples of partnerships with the private sector, such as insurers and telecommunications companies, to provide weather and climate information services in Africa (AfDB 2019). With respect to developing greener cities, modelling to test different scenarios of possible climate and socio-economic futures can be useful to tackle uncertainties and facilitate decision making (African Union 2021). This includes tools such as high-resolution rainfall modelling and flood risk mapping. Research and data generation can particularly be supported through digital tools, which is relevant given that many countries in Africa have invested in digital innovation. The EU and its member states can further support African partners in leveraging digitalisation for the creation of green economics, for instance through joint African–European research centres and networks.

To ensure a more coordinated and impactful approach to green transition in Africa, the EU and its member states can continue to work jointly through the Team Europe approach. Sweden is involved in several Team Europe initiatives related to green transition in African countries such as Kenya, Mozambique, Nigeria and South Africa, among others ([Team Europe Initiative and Joint Programming Tracker. Sweden](#), EU Capacity4dev). In the context of the 6th EU - AU Summit, and as part of the Global Gateway investment package, Team Europe proposed an Africa-EU Green Energy Initiative, to support Africa's green transition in the energy sector. The main pillars of the initiatives are i) regional electricity interconnections and market integration, ii) tailored energy transition partnerships in a number of countries and iii) clean hydrogen production in Africa (European Commission 2022b) Such initiatives can help EU institutions and member states pool resources to create a larger and more coherent impact towards promoting green transition in Africa. Relatedly, an integrated approach that involves various actors including from civil society, private sector and different levels of the government can contribute to ownership, leveraging resources and achieving results.

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## 4. Conclusion

Sweden and the EU more broadly have a strong green transition agenda, which is internationally recognised. However, in many ways it is an African ambition too. Even so, Sweden/EU engagement with Africa on the green transition agenda needs to be better linked with the immediate concerns of many African governments and citizens, such as employment, industrialisation, energy access and the productivity and climate resilience of the agriculture sector. Relatedly, it can build on and strengthen green transition dimensions of existing initiatives with traction on the continent, such as the AfCFTA.

Regardless of the green transition drive in Africa, there is a considerable risk that the urgency to boost employment and economic growth will prevail in many African countries while climate change and environmental issues will not receive sufficient attention. Through climate diplomacy, Sweden and the EU can argue, show and provide support to ensure that job creation and climate action can go hand in hand.

Sweden and the EU more broadly need to take into account the different green transition pathways taken by African countries given that the drivers and bottlenecks vary between countries. Countries that are most vulnerable to climate risks have an incentive to promote resilient economic growth, particularly to adapt the agriculture sector as well as protect biodiversity. Combating land degradation, desertification and drought is critical for Africa's dry lands, while countries with significant forest cover are driven to protect and harness the potential of forests. Enhancing waste management and more broadly promoting circular production and consumption is a concern especially for fast developed countries plagued by the growing issue of pollution. Rapidly urbanising countries can reap benefits from developing smart green cities. A lack of access to energy as well as an abundance of certain renewable sources can drive the move towards cleaner energy systems in some countries. At the same time, African states possessing significant fossil fuel reserves, on which they rely heavily for domestic consumption and exports, have a disincentive to decarbonise, as a move away from fossil fuels means potentially stranded assets, worsening energy access, as well a loss in jobs and revenues, at least in the short run. Main trading partners of the EU may be incentivised for more sustainable production practices, to meet the EU's increasing sustainability standards. Countries endowed with 'green minerals' used in low-carbon technologies that are increasingly in demand have opportunities for increasing raw minerals exports and local value addition through processing.

Countries in Africa need to be supported to transition at a pace and scale that allows them to build relevant capacities and mitigate losses, which will vary between countries. Particularly relevant in this regard is supporting energy transitions that push the continent towards carbon neutrality without compromising on rapid electrification and socio-economic development. Especially for countries dependent on fossil fuel reserves, a gradual move towards less polluting fuel sources may be more appropriate than a radical shift from 'dirty' to 'clean' energy. Gas for example can be a bridging fuel to provide cost-competitive flexible electricity. It can also make sense for fossil fuel countries to invest in renewable technologies, while in parallel continue fossil fuel exploitation to fulfil domestic energy demand and contribute to export revenues.

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One of the major challenges constraining green transition dynamics in Africa is a lack of financing and investments, exacerbated by weak policy environments and lack of (green) capacities, which thus deserves attention in EU - Africa relations. Investment areas to promote can include renewable energy generation, distribution and transition; climate-smart agriculture, waste collection, sorting and recycling; and more socially and environmentally sustainable manufacturing facilities. Sweden and the EU more broadly can use a diverse set of financial instruments better, covering grants, concessional loans and risk sharing instruments, to support climate mitigation as well as adaptation.

This requires financial means, but also smart diplomacy. While a green transition is in the interest of both Africa and Europe in the long run, appropriate diplomacy that builds on mutual benefits is needed. The EU and its member states still need to convince African counterparts that the European Green Deal is not a punitive policy focussed on reducing market access of African products that don't meet increasingly high standards. Only then can EU-Africa green transition and energy access partnership become a success.

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