Inclusive green economy policies and structural transformation in selected African countries

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Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF BOXES

Abbreviations and acronyms

ACET	African Center for Economic Transformation
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
AUC	African Union Commission
BAU	Business as usual
CGE	Computable general equilibrium
CRGE	Climate-Resilient and Green Economy strategy (Ethiopia)
ECA	Economic Commission for Africa
FONERWA	Fund for Environment and Climate Change in Rwanda
GDP	Gross domestic product
GGBP	Green Growth Best Practice
GTP	Growth and Transformation Plan (Ethiopia)
HDI	Human Development Index
IFPRI	International Food Policy Research Institute
IGE	Inclusive green economy
ILO	International Labour Organization
IMF	International Monetary Fund
IRENA	International Renewable Energy Agency
MDGs	Millennium Development Goals
NEPAD	New Partnership for Africa's Development
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing power parity
PSGE	Plan Stratégique Gabon Émergent (Gabon)
REDD	United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation
REFIT	Renewable Energy Feed-in Tariff
SCADD	Stratégie de croissance accélérée et de développement durable (Burkina Faso)
SDGs	Sustainable Development Goals
SEEA	United Nations System of Environmental-Economic Accounting
SLM	Sustainable land management
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNRISD	United Nations Research Institute for Social Development
VAT	Value-added tax
WHO	World Health Organization

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Overview

Introduction

Background

For more than a decade, African economies have recorded impressive and sustained growth rates. In 2014, growth rates averaged 3.9 per cent – only the East and South Asia region grew faster, at 5.0 per cent. However, this growth can be described as largely non-inclusive because of among other factors its limited contribution to job creation, broad participation and overall improvement to people's living standards. Furthermore, this growth has not addressed market failures that result in environmental pollution and degradation, and associated climate change challenges. The consequences of such market failures provide a strong rationale for a portfolio of public policies that foster emissions reduction, the development and adoption of environmentally beneficial technology, as well as the provision of environmental goods and services (Rodrik, 2013).

The challenge confronting Africa is not only to maintain but to translate the rapid economic growth into sustained and inclusive development, based on economic diversification that creates jobs, contributes to reduced inequality and poverty rates, enhances access to basic services and corrects market failures that undermine environmental sustainability. This underlies the renewed calls by, and consensus among African countries for, structural transformation that would effectively respond to the challenges highlighted above.

Africa's structural transformation agenda

Africa's structural transformation aspirations are embodied in continental development frameworks, the most recent of which is Agenda 2063. The Agenda was adopted in January 2015 by the Heads of State and Government of the African Union as a shared strategy for inclusive growth, structural transformation and sustainable development in the region. It reiterates and builds on the principles and strategic orientations of the New Partnership for Africa's Development (NEPAD) of 2001, and earlier continental development frameworks such as the Abuja Treaty establishing the African Economic Community of 1991 and the Lagos Plan of Action of 1980. The Agenda is based on the need to, among other things, transform the region's economies to create wealth, reduce poverty, minimize inequalities, strengthen productive capacities, improve social conditions and achieve sustainable development (ECA, 2013).

Inclusive green economy

A green economy refers to an economic system of production, distribution and consumption of goods and services that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP, 2011). The concept of green economy rose to clear prominence and relevance in 2008/2009 during the search for solutions to the triple crisis- Financial, Fuel and Food, as well as the challenges posed by environmental degradation and climate change. The Global Green New Deal, an output of the United Nation's Green Economy Initiative, launched by the United Nations Environment Programme, made a major contribution towards shaping the concept of green economy. The concept gained further momentum in the run up to the United Nations Conference on Sustainable Development (Rio+20), which was held in June 2012. The green economy in the context of sustainable development and poverty eradication was one of the two substantive themes of the Conference. The Rio+20 Outcome Document, ***The Future We Want***, describes the green economy as one of several tools and approaches for achieving sustainable development.

Although the concept encompasses the economic, environmental and social dimensions of sustainable development, it cannot be presumed to

be inherently inclusive and automatically foster more equitable societies. This demands that policies aiming at greening the economy be carefully designed to maximize benefits for, and minimize costs to the poor and most vulnerable people of our societies. (World Bank, 2012). Thus, a broader concept of "inclusive green economy" has gained traction and it explicitly incorporates fully the social sustainability aspects, in particular enhancing human development and improving conditions for the poor and vulnerable (Samans, 2013). In the present report, inclusive green economy and green economy are used interchangeably.

Objective of the report

The present report was produced in response to numerous calls from member States for the Economic Commission for Africa (ECA) and its partners to support Africa in the development and implementation of inclusive green economy policies and strategies that support countries' development objectives. Particularly relevant was the call made at the seventh Joint Annual Meetings of the Economic Commission for Africa Conference of African Ministers of Finance, Planning and Economic Development and African Union Conference of Ministers of Economy and Finance for support to African countries in strengthening their capacity to formulate, adopt and implement inclusive green economy policies in the context of accelerating structural transformation in the region. Thus, the main objective of the report is to explore the linkages and contribution of inclusive green economy policies and strategies to the structural transformation objectives of selected African countries. The aim is to promote understanding and the adoption of inclusive green economy policies that foster sustainable structural transformation in the region.

Methodology

The preparation of the report entailed the commissioning of study reports on inclusive green economy policies and structural transformation in five countries from each of the subregions of Africa, namely Burkina Faso, Ethiopia, Gabon, Mozambique and Tunisia. Additionally, questionnaire surveys were conducted in Cameroon, Ghana, Kenya, Mauritius, the Republic of the Congo, Rwanda, Senegal and South Africa. A green economy profile for Morocco was obtained from a report on inclusive green growth in that country commissioned in 2013, and the section on green economy in the 2015 Morocco country profile prepared by the ECA Subregional Office for North Africa.

The report was further informed by two complementary reports produced by ECA and its partners, namely Integrated *Assessment Methodologies and Tools for Inclusive Green Economy in Africa, and Enabling Measures for an Inclusive Green Economy in Africa***.** Information gleaned from the country studies on inclusive green economy policies and structural transformation, the related questionnaire, and the two reports mentioned above, were complemented by a literature review. The preliminary draft of the present report underwent an internal peer review process, and was also shared with selected partner institutions for their review, comments and inputs. The revised draft report was tabled at an ad-hoc expert group meeting held on 24 and 25 November 2015.

Analytical framework

The present report explores the linkages and contribution of inclusive green economy policies and strategies to the structural transformation of African countries. In doing so, it looks at the features of structural transformation and the desired outcomes in relation to an inclusive green economy, as well the transmission mechanisms that could reinforce the expected contribution and ensure the sustainability of the transformation. It further recognizes that the macroeconomic environment must be conducive for an inclusive green economy to thrive. At the same time, an inclusive green economy can influence the macroeconomic policies of a country to adequately cater to environmental and social policy objectives.

The report also recognizes that an inclusive green economy as a vehicle for sustainable transformation and development calls for the adoption and implementation of inclusive green economy

policies and strategies within the framework of national development plans. It underlines the importance of integrated approaches that foster balanced consideration of the economic, social and environmental dimensions of sustainable development- thus the pertinence of integrated assessment methodologies and tools. Lastly, it acknowledges that a suite of enablers are required to further the development and implementation of inclusive green economy policies that drive the desired transition and transformation. Details of this outlook and the related analytical framework are presented in Chapter 1.

Key findings

Macroeconomic environment and inclusive green economy

A stable and sustainable macroeconomic environment is fundamental to all forms of policy interventions and outcomes. An inclusive green economy system does not operate in a vacuum. It thrives in a policy framework designed to support economic growth and resilience, resource efficiency and low carbon development, sustainable management of natural resources, development of sustainable infrastructure, and providing support for poverty reduction and social inclusion, among others. As such the prevailing macro-economic environment and policy outlook are important prerequisites for an effectively functioning inclusive green economy system.

Investments in green sectors

A number of African countries are at the beginning of their structural transformation to becoming diversified economies. Their economies are still largely based on agriculture and natural resources and a high proportion of their population lives in rural areas. Green investments in key sectors such as agriculture could increase the productivity of these sectors and generate high returns in terms of growth, employment and poverty reduction. This observation is also pertinent for the study countries. In parallel, the development of new green sectors such as waste management, sustainable transport, building and energy will create employment opportunities, more equitable distribution of income and diversified manufactured goods and will accelerate the shift from dominant agriculture-based economies, with acute dependence on natural resources; towards an economic structure based on industry and modern services. Diversification induced by the development of these sectors will decrease the vulnerability of African economies.

Investments in human and physical capital

Unemployment and poverty are real causes for concern in many African countries. As a result, macroeconomic policies have focused on poverty reduction and job creation. Poverty reduction is central to both inclusive green economy and structural transformation. In Ethiopia, poverty reduction is central to the country's Growth and Transformation Plan (GTP) and measures for enhancing inclusiveness have included committing resources to socially disadvantaged groups (the poor, young people and women), as well as increased expenditures on sectors with the greatest potential impact on poverty reduction. Ethiopia's macroeconomic outlook emphasizes agriculture, natural resources, road construction, education, health and social welfare, which are also considered crucial for both greening and social inclusion. Mozambique's Poverty Reduction Action Plan (PARP) for the period 2011-2014 helped to reduce the poverty incidence from 54.7 per cent, in 2009, to 42 per cent, in 2014. In Tunisia, the National Strategy for Sustainable Development estimates that green investments of 2 per cent of GDP would lead to 227,000 to 307,000 jobs (7 - 9.5 per cent of total employment).

Furthermore, the level of social development and the quality of infrastructure in the study countries are still below standard. The transition to an inclusive green economy can be an opportunity to transfer the wealth of natural capital without causing risks, through investment in physical (infrastructures) and human capital. Environmental quality and climate change vulnerabilities are a major cause of food insecurity in Mozambique. Environmental degradation and climate variability

exacerbates the incidence of malnutrition. In relation to an inclusive green economy, the strategy gives some guidance on how to increase resilience of families to seasonal variations in production. Investment in making production systems more resilient would ensure that agriculture does not suffer from seasonal variations in the production cycle.

One of the critical sectors for green economy and structural transformation in Africa is energy. Energy is a necessity for Africa's development and at the same time, an opportunity for the development of a green economy. Supplying increased and sustainable energy is crucial to the transition to inclusive green economies. Africa's renewable energy potential presents enormous prospects for increasing sustainable energy supplies. Mindful of the high initial capital requirements, Governments are putting in place mechanisms to increase the uptake of renewable energy through, for example, Renewable Energy Feed-in Tariffs (REFITs). Such tariffs encourage independent power producers such as companies, communities and even individuals to invest in renewable energy technology by guaranteeing that all of the energy produced will be bought at a fixed and profitable price. A number of countries including Ethiopia, Ghana, Kenya, Mauritius, Rwanda and South Africa have either adopted or are putting in place macroeconomic policies to attract investments in renewable energy through such tariffs.

A number of other energy-related policies supported by macroeconomic measures have been put in place across Africa. For example, the Government of Tunisia has drawn up a national solar energy plan with the objective of increasing the proportion of renewable energy sources from 1 per cent to 4.3 per cent in 2014. The plan includes the use of solar photovoltaic systems, solar water heating systems and solar concentrated power units for electricity generation. The energy savings expected as a result of the plan could reach 22 per cent in 2016, with a reduction of 1.3 million tonnes of carbon dioxide per year. Macroeconomic policy measures under the plan include capital grants qualifying for value-added tax (VAT) exemptions, customs duty reductions and bank loans with reduced interest rates.

Fiscal and monetary policies

Fiscal and monetary policies should be reformed to support inclusive green economy initiatives. National policies should target investments in green and pro-poor sectors while maintaining macroeconomic stability. At the same time, ensuring macroeconomic stability could attract finance and investment for the green economy. The growth momentum provides opportunities for conducive macroeconomic policies for the green economy to thrive. Growth is important to create room for entrepreneurship development and new investment opportunities for the transition to an inclusive green economy. Economic growth provides the fiscal space to increase social spending. However, there is a need for stronger alignment of inclusive green economy strategies and national development plans to ensure that macroeconomic policies adequately and measurably cater to inclusive green economy.

Broadening the tenets and metrics of macroeconomic policy

A broader macroeconomic framework will ensure that macroeconomic measures actively create an environment for an inclusive green economy to thrive. The adoption of the System of Environmental-Economic Accounting (SEEA) could help to broaden the framework by monitoring the interactions between the economy and the environment. Furthermore, the Adjusted Net Saving (ANS) indicator of the World Bank, also known as genuine saving, is a sustainability indicator built on the concepts of green national accounting used to measure the true rate of savings in an economy. In their Consensus Statement to the United Nations Conference on Sustainable Development (Rio+20), African countries recognized the need for new reference indicators to assess the economic, social and environmental performance of its economies, alongside gross domestic product (GDP). At the Conference, the international community acknowledged the need for broader measures of progress to complement GDP in order to better

inform policy decisions. The programme of work on broader measures of progress to complement GDP (GDP Plus) is an opportunity for countries to undertake a more accurate and comprehensive assessment of the state of their economies, as well as to adopt policies that internalize the social and environmental costs of growth to better inform sustainable development trajectories.

Inclusive green economy policies and their role and significance in fostering structural transformation

Structural transformation in the study countries is driven by development imperatives such as economic diversification, job creation, poverty reduction, and meeting basic needs that contribute to human development. Sustainability issues feature explicitly as important drivers in the plans of Ethiopia, Gabon and Tunisia, and the objectives of Burkina Faso. The National Development Strategy of Mozambique considers environmental resources and integrity as central to economic growth and poverty reduction.

In order to achieve growth that is socially inclusive, resource efficient and environmentally sustainable, inclusive green economy policies and strategies should embody, economic, social and environmental objectives in a balanced manner. African countries are at various stages of developing and implementing inclusive green economy policies and strategies. Ethiopia, Rwanda and Kenya have developed explicit green economy strategies, and Zambia is in the process of developing one, while Mozambique and South Africa have developed a green economy vision and a roadmap, respectively. A number of countries studied have yet to develop such policies and strategies. Even so, the experiences of countries that have so far developed and are implementing inclusive green economy policies and strategies provide invaluable insights into various policy options.

Policymakers have at least three possible options to pursue inclusive green economy objectives: building a stand-alone inclusive green economy plan; mainstreaming an inclusive green economy strategy into existing national policy frameworks, or adopting a mixed strategy combining the other two. While mainstreaming is a good approach as it helps in harnessing synergies and ensuring coherence in strategy development and implementation, the strategy mix may be a better approach as it ensures that green economy policy objectives are defined within a framework document embodying a country's development vision, and at the same time are clearly elaborated in a distinct document. In this way, in addition to the main strategy document, sectoral green economy strategies can be developed to contribute to the overall green economy objective in a coherent fashion.

Synergies among inclusive green economy policies and structural transformation objectives

A review of the visions, goals and objectives of the various inclusive green economy policies and strategies above shows that they are supportive of and consistent with those of the structural transformation policies. While traditionally, structural transformation objectives have been silent on environmental and sustainability objectives, it is interesting to note that, for instance, the vision and goals of Ethiopia and the policies and plans of Gabon and Mozambique acknowledge environmental and sustainability issues. From the analysis of the various structural transformation documents, it is clear that transformation remains pivotal for sustained growth, productive employment creation and poverty reduction, and that the agriculture and natural resource sectors remain its key drivers. In the context of Africa, these same sectors are critical for driving inclusive green economies. However, an inclusive green economy approach underlines the need for balanced outcomes in all three dimensions through the mainstreaming of sustainability principles in strategy development and implementation. Thus, inclusive green economy policies have the potential to alter not just the pace of structural transformation, but also the greenness and inclusiveness of that transformation.

Win-wins

Consistent with the vision of achieving sustainable transformation, the broad range of sector-specific green initiatives launched and integrated into national transformation plans also offer win-win opportunities. Irrespective of the strategy approach adopted, whether a distinct inclusive green economy and structural transformation policy frameworks, or a longer term frameworks embodying short term objectives, an integrated approach which is an important objective of inclusive green economy, provides countries with the policy choice to balance the economic benefits arising from development and any resulting environmental and welfare impacts arising from natural resource depletion, pollution and ecological degradation. For example, priority areas in the inclusive green economy strategies of Ethiopia, Kenya, Mozambique, Rwanda and South Africa generally include agriculture, industry, and environmental and climate resilience concerns.

Trade-offs

Transitioning to an inclusive green economy not only entails co-benefits or win-win outcomes in terms of greater economic performance, effective environmental protection and social achievements, but also trade-offs in the short term. Efforts to "green" production are likely to increase short-term production costs, as new production technologies are introduced. For instance, to mitigate the negative impacts of agricultural intensification and extensification on the environment, Ethiopia is planning to shift to conservation farming, organic fertilizers, intercropping, and development of less harmful fertilizers, clean technology and technology screening, and to reduce land clearing by either shifting towards plantation-based production or promoting smallholder agricultural intensification. Tunisia is also embarking on sustainable agriculture to save water and energy and reduce carbon dioxide emissions.

There are trade-offs between such efforts and possible negative effects in terms of falling crop production, rising production costs, and fewer rural employment opportunities. The increase in production costs could have an impact on the overall competitiveness of locally produced products in the national, regional and international markets, at least in the short term. However, in the long run, countries would be competitive in the regional and global markets by supplying green goods and services. Additionally, embedding inclusive green economy policies within long-term visions and development frameworks could help chart an implementation trajectory that provides a holistic view of short, medium and long-term costs and benefits and facilitate transparent, participatory and informed decision making.

Integrated assessments

Inclusive green economy assessments are already being conducted in African countries with the aim of maximizing the benefits of green economy policies and strategies across economic, social and environmental sectors. However, additional capacity should be created on the cross-sectoral and systemic analysis of green economy policy outcomes. In particular, while African decision-makers generally seem to acknowledge the importance of adopting a multi-stakeholder and inter-disciplinary approach, the actual development and implementation of government policies are still largely conducted following rigid sectoral frameworks and methodologies. A systematic move towards more flexible, seamless and integrated inclusive green economy policy assessments will benefit from capacity development interventions targeting relevant skills, institutional environment and sustainable infrastructural support for data management.

Statistical capacity is crucial for the use of quantitative methodologies and tools. However, despite the ongoing efforts to improve statistical capacity in Africa for nearly half a century, the capacity of most countries in the region remains weak, and there is little use of data by policy-makers. Although some African countries have improved their statistical capacity, many continue to face a number of problems in providing relevant and reliable statistics. The findings point to the need to enhance institutional, policy and technical

capacity for improved statistical analysis and application of relevant methodologies and tools for integrated assessment through sustainable mechanisms that also lend themselves to local ownership and continued use.

Implementation experiences, good practices and lessons learned

African countries have been implementing green economy initiatives in sectors such as sustainable agriculture, renewable energy, sustainable transport and natural resource management, which foster structural transformation. While implementation commenced relatively recently, countries have begun acquiring invaluable experiences that could better inform the development and implementation of inclusive green economy policies and strategies and the region's transition. These include the establishment of coordinating and collaborating mechanisms, stakeholder participation and multidisciplinary approaches, integration of the three dimensions of sustainable development, to experiences related to the implementation of initiatives in various sectors of the economy and the mobilization of financial resources for inclusive green economy.

Coordination mechanisms

In the implementation of green economy policies and strategies, countries have established coordination mechanisms which are crucial to enhancing collaboration, multidisciplinary approaches, coherence and integration, thus engendering efficient implementation. Coordination among government ministries, agencies and other stakeholders, as well as decentralized structures is mostly assured through the designation of a lead entity and the establishment of various multi-stakeholder committees, which allow for effective communication and cooperation. The mandates of most of the coordinating entities included fostering holistic and integrated approaches to mainstreaming inclusive green economy into national development plans, and the implementation of sectoral inclusive green economy initiatives.

Analysis has shown that social affairs institutions are usually not represented in national coordinating entities for inclusive green economy, and social issues are in some cases not adequately reflected in priority areas. For example, in Kenya and South Africa, the social affairs ministry was not a member of the green economy institutional entity. Furthermore, in Kenya, social issues were not considered as distinct priority areas, but rather as crosscutting issues of mainstreaming. In Ethiopia, poverty, inequality and other social issues had largely remained on the periphery. This is consistent with the observation that the social dimension is often marginalized in green economy analysis and policy. Thus there is a need to further emphasize the social dimension of an inclusive green economy to ensure effective integration of the three dimensions of sustainable development.

Good practices

Good practices have been emerging across the African continent that provide useful lessons for designing and implementing inclusive green economy initiatives. The report showcases examples in the agriculture and land management, energy, transport and green entrepreneurship sectors, as well as in financing inclusive green economy.

Sustainable agriculture

Targeted green investments in the agriculture sector could yield the highest social impact and long term positive results on the economy. For example, increased green investment resulted in increased agricultural production in Senegal while green agriculture investments led to increased export opportunities in higher value-added activities, such as organic produce in Uganda, further driving growth. As a significant producer of organic products, Uganda benefits from an important source of export earnings and revenue for farmers. Certified organic exports increased from US$3.7 million in 2003/4, to US$6.2 million in 2004/5, before jumping to US$22.8 million in 2007/8. In terms of price premiums and income for farmers, studies commissioned by the United Nations Environment Programme and the United Nations Conference on Trade and Development

indicate that in 2006, the farm-gate prices of organic pineapple, ginger and vanilla were 300 per cent, 185 per cent, and 150 per cent higher, respectively, than non-organic equivalents. Through organic farming, Uganda not only gains economically but also contributes to mitigating climate change, as greenhouse emissions per hectare are estimated to be on average 64 per cent lower than emissions from conventional farms.

Sustainable land management

The Ethiopian sustainable land management project being implemented as part of the country's Climate Resilient and Green Economy Strategy (CRGE) was initiated to reverse the serious level of land degradation by promoting and scaling up successful sustainable land management (SLM) technologies and approaches. The economic benefits derived from the project are the result of improved soil fertility, soil moisture retention, water availability and increased biomass in the agricultural landscape. These outcomes that have led to greater agricultural productivity and an increase in the income of participating farmers who adopted sustainable land management technologies. Generally, the economic returns for farmers who use such technologies was twice as high as those obtained by farmers who did not use the technology. Sustainable land management practices have enhanced social protection and gender equity in the watersheds where they have been implemented. They have also resulted in positive environmental impacts, such as spring development, increased vegetation cover, decreased run-off and soil loss, reduced downstream flood hazards, enhanced soil rehabilitation, reduced downstream sedimentation and increased soil fertility.

Energy

Investments in renewable energy have been spurred by a range of policy support from both domestic and international sources. Several countries have adopted feed-in tariffs, including those which have seen significant investment in renewable energy: South Africa, Kenya and Ghana. In addition, Africa has the potential to increase its energy efficiency, from more efficient lighting, to improved industrial energy use. In many sectors, from cement to aluminium, African companies remain behind the global standard in terms of energy efficiency. Increasing investment in energy efficiency technologies would also contribute to structural transformation. The growing market for renewable energy products and carbon credits holds potential for expanding trade in the region. The case of solar energy exports to the European Union region, or that of hydropower and other renewable energy exports within the region, fall into this category. Moroccan renewable energy projects, which include the Moroccan Solar Plan and Morocco's Wind Energy and Hydropower Development Project, illustrate how clean energy development could reduce energy costs and turn a country's economy around. In addition to harnessing the continent's renewable energy resources, efficient energy use (as in Ghana, for example) also reduces the need for heavy fuel in generation and any associated adverse impacts.

Transport

African Governments with the support of their development partners are investing more in road and rail infrastructure; however, more is needed to address persisting challenges – if current impressive economic growth is to translate into real social and economic development on the continent. Ethiopia's national railway and bus rapid transit projects are being emulated in countries such as Kenya and Uganda. In December, 2015, the Government of Uganda signed a Memorandum of Understanding with the Chinese Government for the construction of an initial 35-kilometre light rail mass transportation system project for greater Kampala, worth US$ 440 million, to reduce congestion in the country's capital and surrounding. A new high-speed train between Tangier and Casablanca, and rapid bus systems in Nigeria and South Africa, have also been commissioned. However, many more such systems will be needed to respond to Africa's growing urbanization. In addition, countries have been successfully phasing out fossil fuel subsidies, and have introduced more stringent emission controls. Historically, African Governments have subsidized certain fossil

fuel inputs, including diesel, kerosene and petrol. However, in recent years, they have made significant strides in order to reduce this burden, resulting in freed resources and positive environmental impacts. The case study on fossil fuel subsidy reform in the Niger provides further detail on one country's ability to reduce subsidies.

Green entrepreneurship

The transition to a green economy offers a range of new opportunities for green entrepreneurship that promote sustainable and inclusive economic development. Enterprises also have a vital role to play in building an inclusive green economy not only in terms of the total environmental effects of products in a life-cycle perspective – from extraction of raw materials, to production, and the use and disposal of products and by-products - but also with regard to providing employment opportunities for young people, women and rural populations, while contributing to economic growth. Examples of stellar green entrepreneurs are emerging in Africa, making huge contributions to the economic and social transformation of their communities and countries in a sustainable manner.

Financial mechanisms

Achieving sustainable structural transformation in African requires providing and generating financial resources for an inclusive green economy approach to development. Several countries have established national funds to direct flows into the green economy. Examples of good practices in the region include the green fund of South Africa, Ethiopia's climate resilient and green economy facility, Rwanda's National Climate Change and Environment Fund and Uganda's public-private partnership, which financed the construction of Bujagali hydro-power plant. Through the Department of Environmental Affairs the Government of South Africa has made available 1.1 billion South African rand over three years (from 2013) to set up a green fund which aims to facilitate investment in green initiatives to help South Africa to transition to a greener economy and to support socioeconomic development. Ethiopia established its national financing mechanism, the climate resilient and green economy to support the implementation of the priorities set out in its climate resilient and green economy strategy and the subsequent development and implementation of relevant investment plans. The facility mobilizes resources from various sources, including the Government, the private sector, bilateral and multilateral development partners, carbon trading schemes and financial mechanisms of multilateral environmental agreements and channels the financial resources through various instruments.

Success factors

Several factors determine whether or not the implementation of a green economy is successful - from policy development to implementation. These include high-level political support, flexibility in policy design that builds on existing institutional frameworks, an integrated approach that caters to the transition in the long-term while effectively addressing immediate development needs or priorities, and effective monitoring and reporting on progress facilitated by establishing key targets which feed into broader development planning processes. However, success factors vary depending on the specific country context.

Enabling measures for an inclusive green economy that supports structural transformation

Enabling measures are needed to support African Governments in developing and implementing policies and strategies that drive the transition to an inclusive green economy in support of their structural transformation and national development priorities. These measures include policy instruments needed to optimize the economic, social and environmental benefits and facilitate the mainstreaming of green economy in national structural transformation agenda or development plans; capacity development necessary to raise awareness and strengthen institutions and individuals with new skills relevant to the green economy; development of and adoption of green technologies; and mobilization of adequate, innovative financing for the transition process.

Policy instruments

Policy instruments required in the transition to a green economy should incentivize green investments; mobilize resources for the transition; compel both public and private stakeholders to objectively allocate resources to priority sectors; and address market failures to ensure prices reflect the value of natural capital and the environment while being mindful of social concerns. Policy instruments operate in specific environments, so they should be responsive to national priorities such as addressing high inequality, poverty, and unemployment, low productivity in primary sectors and industry, and infrastructure gaps.

Africa's transition to an inclusive green economy will require a shift from low productivity, inefficient, wasteful production and consumption technologies to green technologies. Green technologies in the green economy will contribute to reducing waste generation and associated pollution especially of air, land and water bodies by the manufacturing sector and industry. Efficient and cleaner technologies will have to be deliberately promoted in support of a process of phasing out dirty and obsolete technologies. Embracing cleaner production technologies through innovation or developing new, or upgrading existing green technology is important for enhancing the competitiveness of Africa's industrial output. Technology that improves the efficiency of energy use and inputs will therefore be key in maintaining the competitiveness of Africa's exports.

Technology development and transfer is primarily a business opportunity. Most technologies arise out of commercial interests, and due to the low levels of development in Africa, it is common to see technology as being driven by foreign direct investments and to a lesser extent, domestic entrepreneurship. In the past two decades Africa generally realized improvements particularly in patent applications, technology exports, fees and royalties received, and research and development. However, the overall volumes remained very low relative to world totals, with Africa accounting for less than 2 per cent of foreign direct investment and 0.27 per cent of patent and high technology exports. Hence, for foreign direct investment to benefit green the economy transition, it is critical that policies allow free movement of capital goods and business persons accompanying these investments to facilitate greater levels of technology and knowledge transfer.

Capacity development

Capacity development is essential to achieving enhanced understanding and appreciation of the concept of inclusive green economy and its tangible contribution to sustaining growth, alleviating inequality, addressing unemployment and the decline of ecosystem assets. Moreover, effectively integrating and firmly anchoring inclusive green economy in countries' structural transformation visions, plans and programmes, and their implementation arrangements is crucial. It is therefore vital to ensure that relevant capacity is developed and sustained for both public and private sector actors in order operationalize and make inclusive green economy a fabric of economic and social activities.

With regard to green economy capacity development in Africa, green economy initiatives are providing a variety of support services to recipient partner countries. Africa's seven top beneficiary countries – Kenya, Ethiopia, Uganda, Rwanda, Mali, Ghana and the United Republic of Tanzania – have each successfully engaged with 10 to 15 different green economy initiatives. However, gaps still remain, particularly in matching or brokerage services to help link countries with the support that they need, including capacity development. In addition, as the number of actors as well as interventions responding to the inclusive green economy-related capacity development is growing, coordination and enhanced synergies among capacity development initiatives is urgently required.

Financing

Greening the African economy would require significant upfront capital investments and major structural and technological changes. Financial

resources will also be required for countries to effectively deploy all enablers of the transition, particularly technology, capacity development, institutional and policy reforms. Since all the countries implementing green economy and structural transformation strategies have developed these as homegrown development agenda, domestic resource mobilization will be critical for the success of transformation. A few countries in the region have green transformation programmes with explicit financing options highlighted.

For instance, Morocco, intends to raise 20 billion euros for investment in four key sectors (energy efficiency, renewable energy, solid waste and waste water management), which have a potential to create 90,000 jobs by 2020. Ethiopia, meanwhile has mobilised U$50 million from the Green Climate Fund for climate resilience projects under its second five-year economic growth and transformation plan for the period 2015-2020. This, in addition to domestic resources, will accelerate the implementation of the country's green economy projects. The green economy transition will also benefit from a growing, well-equipped and inclusive private sector. The transition is opening investment windows in sectors that previously were unattractive. Public sector-led investments in natural resources will be critical particularly in sectors that struggle to attract private sector participation.

Other enablers

The list of enablers of the transition is not exhaustive. For instance, regional integration would provide an expanded market or economies of scale for increased production capacity of a green economy. In some countries, devolved structures are very important for taking development to key constituencies (stakeholders). Decentralization is a governance and institutional issue, as it allows stakeholder participation at various levels. Another equally important enabler is private sector development. A bolstered role of the private sector will complement the efforts of Governments in driving the transition, particularly in mixed economies where the private sector is the main driver of the growth process. The international environment is also an enabler on its own. Mutual accountability, and transparency among the recipient and donor countries, and flexibility on the part of financiers would allow beneficiary countries to not only own the development process but also prioritize based on national objectives.

Conclusions and recommendations

The foregoing suggests that an inclusive green economy can serve as a vehicle for sustainable structural transformation in Africa. However, a stable and sustainable macroeconomic environment is a fundamental prerequisite for an inclusive green economy to thrive. An inclusive green economy can also influence the macroeconomic policies of a country to adequately cater for environmental and social policy objectives. To foster coherence and integration, inclusive green economy policies and strategies must be developed and implemented within the framework of national development plans. The application of integrated assessment methodologies and tools in green economy analysis is essential for integrated approaches that promote a balanced consideration of economic, social and environmental outcomes. Lastly, a set of enablers is required to further the development and implementation of inclusive green economy policies that drive the desired transition and transformation. The following are some of the recommendations drawn from the findings.

The prevailing macro-economic environment and policy outlook are important prerequisites for an effectively functioning inclusive green economy system. Therefore, macroeconomic policy frameworks must among other things, support economic growth and resilience, resource efficiency and low carbon development, sustainable management of natural resources, development of sustainable infrastructure, poverty reduction and social inclusion, as key tenets of an inclusive green economy.

In order to effectively develop and implement inclusive green economy policies and strategies that support sustainable structural transforma-

tion, countries should mainstream such policies and strategies into a development vision, and elaborate a distinct policy or strategy for galvanizing support for an inclusive green transformation. In addition to the national level inclusive green economy policy and strategy, there is a need for coherent sectoral inclusive green economy-related strategies targeting key sectors of the economy to achieve results in diverse areas that support sustainable structural transformation in Africa.

An appropriate institutional framework is essential to enhance coordination and collaboration on inclusive green economy implementation. This should take into account the need to designate a green economy focal or coordinating institution that provides an entry point for green economy interventions by all partners- domestic and external.

Integrated assessment of green economy policies requires the development of integrated tools, taking into account the optimal combination of different tools, and the simultaneous analysis of outcomes across social, economic and environmental dimensions. In this regard, capacity building should comprehensively address elements that promote the strengthening of systems and tools for measuring inclusive green economy, institutional capacity, financial resources, as well as statistical and data infrastructures.

Governments, the private sector and development partners should promote research that demonstrate the synergies and positive linkages between inclusive green economy transition, and developmental objectives, particularly those that pertain to structural transformation. Evidence-based recommendations are crucial for informed decisions and actions that foster the economic, social, environmental and overall developmental impacts of inclusive green economy. Research is also required to demonstrate value for money in terms of returns on investment, and measuring the value of the investments in the interventions.

Countries should mobilize adequate financial resources for green economy implementation. Given that green economy policies and strategies have been developed as home-grown instruments, domestic resource mobilization will be critical for the success of the transition. Financial resources will also be required for countries to effectively deploy all enablers of the transition, particularly technology, capacity development, institutional and policy reforms.

Capacity building is essential to ensuring the sustainability of inclusive green economy interventions. Capacity building and awareness raising are critical to support local manufacturing and employment generation, raise knowledge and awareness, and to enhance support for skills training and capacity building. In-built monitoring and evaluation and accountability systems need to be designed to ensure that interventions that contribute to economic, social and environmental benefits and costs are monitored and evaluated against set objectives.

Innovation, technology development and transfer must be at the centre of the transition. This calls for domestic investments in science, technology and innovation, and exploiting commercial interests that attract high technology content of foreign direct investment, particularly those that involve movement of large machinery and specialised knowledge.

Governments should bolster the role of the private sector to complement its efforts in driving the transition. This should include providing incentives to stimulate private sector engagement and boost enterprise development in the green economy, supporting private sector investment in innovation and technology development, and aligning industrial research with national development objectives.

1. Introduction

1.1 Background

For more than a decade, African economies have recorded impressive and sustained growth rates. In 2014, growth rates averaged 3.9 per cent – only East and South Asia grew faster, at 5.0 per cent. Various factors accounted for such a strong economic performance. They included: greater domestic demand, coupled with improvements in the regional business environment and macroeconomic management; increasing public investment, especially in infrastructure; a buoyant services sector; and increasing trade and investment ties with emerging economies. Growth rates were projected to reach 4.5 per cent and 4.8 per cent in 2015 and 2016 respectively.

Despite its remarkable economic performance and progress in addressing certain key socioeconomic challenges, particularly in relation to health, education, gender empowerment and extreme poverty, Africa has the lowest levels of human and social development. Africa will attain three out of the eight Millennium Development Goals (MDGs), namely MDG 2 (Achieve universal primary education), MDG 3 (Promote gender equality and empower women) and the targets related to MDG 6 (Combat HIV/AIDS, malaria and other diseases). But the continent remains home to the world's highest proportion of poor people, and may not be able to meet other key MDGs (ECA and others, 2015).

In 2014 youth unemployment was estimated at 30.5 per cent for North Africa and 11.6 per cent for sub-Saharan Africa (ILO, 2015). On average about 72 per cent of young people in Africa live on less than two dollars a day. Meanwhile the region continues to witness environmental and natural resource degradation and depletion. While the rate of loss of forest cover has declined recently, the overall improvement in forest cover remains insignificant, and many people live on degraded land. Pressure persists on the region's water resources and biological diversity, while the number of threatened species continues to rise. Furthermore, climate change impacts are exacerbating challenges to natural resource management and overall sustainable development, as evidenced in the increased severity and frequency of natural disasters (ECA, 2015g).

Therefore, Africa's impressive growth can be described as largely non-inclusive because of its limited contribution to job creation, broad participation and overall improvement of people's living standards, among other factors. Furthermore, this growth has not addressed market failures that result in environmental pollution and degradation, and challenges associated with climate change. Given the consequences of such market failures, there is an urgent need to adopt public policies that will help to reduce emissions, develop and adopt environmentally beneficial technology and provide environmental goods and services (Rodrik, 2014).

Thus, the challenge confronting Africa is not only to maintain rapid economic growth but also to translate it into sustained and inclusive development, based on economic diversification that creates jobs, reduces inequality and poverty rates, enhances access to basic services, and corrects market failures that undermine environmental sustainability. This underlies renewed calls by, and consensus among African countries for, structural transformation that would effectively respond to the challenges highlighted above.

1.2 Africa's structural transformation

Africa's structural transformation aspirations are embodied in continental development frameworks, the most recent being Agenda 2063.

The heads of State and government of the African Union adopted the Agenda in January 2015 as a shared strategy for inclusive growth, structural transformation and sustainable development in the region. It builds on and reaffirms the principles and strategic orientations of the New Partnership for Africa's Development (NEPAD) adopted in 2001, and earlier continental development frameworks, such as the 1991 Abuja Treaty establishing the African Economic Community and the 1980 Lagos Plan of Action.

Aspiration 1 of Agenda 2063 espouses *a prosperous Africa based on inclusive growth and sustainable development*. This aspiration expresses the determination of Africans to eradicate poverty in one generation and build shared prosperity through social and economic transformation of the continent. It also aims for a continent with the means and resources to drive its own development, while fostering sustainable and long-term stewardship of its resources. Among other imperatives, the Agenda underlines the need for structurally transformed economies to create shared growth, decent jobs and economic opportunities for all. It stresses the need for modern agriculture so as to increase yields, productivity and value addition. The aim is to help farmers and nations to prosper and to improve Africa's collective food security. It also underlines the need to value and protect Africa's unique natural endowments, environment and ecosystems, including its wildlife and wild lands, as well as to sustain climate-resilient economies and communities (AUC, 2015).

At the global level, African countries have subscribed to the 2030 Agenda for Sustainable Development and its accompanying Sustainable Development Goals (SDGs). The Agenda commits the international community to strengthening the productive capacities of least developed countries in all sectors. This could be achieved through structural transformation and the adoption of policies that increase productive capacities, productivity, gainful employment and financial inclusion in all the relevant sectors (United Nations, 2015). While all the SDGs are relevant to this commitment, goals 8,[1] 9[2] and 12[3] are worthy of mention.

Africa's structural transformation agenda is based on the need to transform the region's economies to create wealth, reduce poverty, minimize inequalities, strengthen productive capacities, enhance the social conditions of its people and achieve sustainable development (ECA, 2013). This will involve a shift in the continent's economies, which rely heavily on agriculture and natural resources, towards an economic structure based on industry and modern services. The aim is to ensure strong employment potential, more equitable distribution of income, diversified manufactured goods, commodity-based value addition, enhanced resilience to global shocks and greater regional integration. However, there is a need to ensure the sustainability of this transformation. This could be achieved by integrating inclusive green economy principles and approaches into the transformation process.

1.3 Inclusive green economy

A "green economy" refers to an economic system of production, distribution and consumption of goods and services that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP, 2011). A green economy can be described as one that is low-carbon, resource-efficient, socially inclusive, and protects and enhances biodiversity and ecosystems. As such the concept concerns the interrelated system of economic production and consumption activities, policies and instruments, and institutions that determine the allocation of scarce resources to meet economic, social and environmental objectives (UNEP, 2011).

[1] Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
[2] Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
[3] Ensure sustainable consumption and production patterns.

The concept of the green economy gained prominence in 2008 and 2009 in the search for solutions to the triple financial, fuel and food crisis, as well as the challenges posed by environmental degradation and climate change. The Global Green New Deal, an output of the United Nations Green Economy Initiative,[4] made a major contribution towards shaping the concept of the green economy. The crises provided an unprecedented opportunity to rethink the prevailing economic paradigm and the viability and sustainability of the global development path. They lent credence to the green economy concept by confirming that economic growth could be achieved differently – without causing social disparities, environmental risk and damage, and ecological scarcities.

The concept gained further momentum in the run-up to the United Nations Conference on Sustainable Development (Rio+20) in June 2012. "The green economy in the context of sustainable development and poverty eradication" was one of two substantive themes of the Conference. The Rio+20 Outcome Document, *The Future We Want* (United Nations, 2012), describes the green economy as one of several tools and approaches for achieving sustainable development. The green economy should *"contribute to eradicating poverty, as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems" (The Future We Want,* para. 56). Although there is no specific reference to the green economy in Agenda 2030 and the SDGs, the concept is relevant to all the goals, in particular goals 1, 2, 6, 7, 12, 13, 14 and 15.

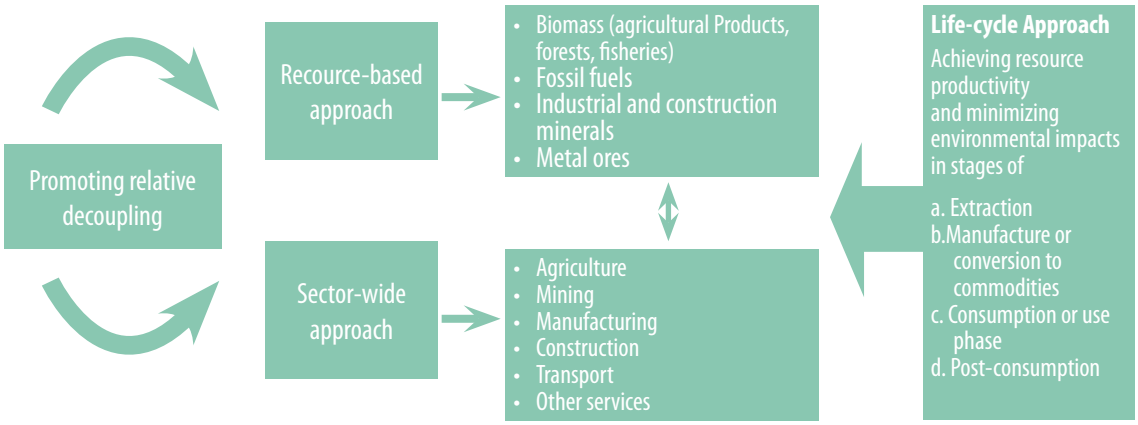
A green economy offers an alternative paradigm for viewing the interaction between human activities, social conditions and the environment. In contrast to putting priority on economic growth and treating the environment and society as an afterthought, the green economy proactively aligns the macroeconomic policies of the State with environmental and social policy goals. A green economy is also characterized by attention to the vast potential to maximize resource productivity and efficiency, as well as waste reduction. It promotes incentive mechanisms for behavioural change. It could help enhance economic transformation while ensuring optimal use of natural resources and their equitable distribution, as well as better environmental quality. As Africa transforms, it is critical to understand the impact that moving the economy away from overreliance on agriculture and natural resources would have on resource use, economic growth, income distribution, social development and environmental pressures (UNCTAD, 2012). A green economy could be effective in decoupling economic growth from environmental pressure. Itwould enhance the opportunities for resource production while mitigating pressure on the environment (see figure 1).

Although the concept encompasses the economic, environmental and social dimensions of sustainable development, it is important not to presume that it is inherently inclusive and that it automatically fosters social equity. Africa is the second most unequal region of the world after Latin America. In 2010, 6 out of the 10 most inequitable countries were in sub-Saharan Africa. There is a need to carefully design policies aimed at greening the economy so as to maximize benefits to the poor and most vulnerable people, while minimizing costs to them (World Bank, 2012). It is therefore crucial to design the transition as a comprehensive social, economic, political and sociocultural process of change. This requires high-level political and social support to ensure not only fair distribution of costs and benefits that may occur during the transition, but also sustainability. Ultimately, it helps prevent the mistakes made in previous transition processes (OECD, 2012; Davies, 2013).

Thus, a broader concept of an *"inclusive green economy"* has gained traction, and it fully incorporates important aspects of social sustainability, in par-

[4] The Green Economy Initiative, coordinated by UNEP, was one of the nine Joint Crisis Initiatives adopted by the United Nations Chief Executives Board in response to the 2008-2009 economic and financial crisis.

Figure 1: An integrated framework for relative decoupling in Africa



Source: UNCTAD (2012).

ticular enhancing human development and the living conditions of poor and vulnerable people (Samans, 2013). The "inclusive" emphasis carries the promise of tackling the structural causes of social vulnerability, thereby ensuring that any transformation is green, fair and equitable. Inclusiveness also reflects the reality that the opportunities, costs and benefits of a green economy will vary for different social groups, countries and regions (UNRISD, 2012). An inclusive green economy therefore highlights the need to enhance equity and redistributive justice. Growth generated by a green economy should create jobs, improve human welfare, promote resource efficiency and enhance environmental assets, thus contributing to poverty eradication and sustainable development (ECA, 2015g).

1.4 Objective of the report

The present report was produced in response to numerous calls from ECA member States and its partners to support Africa in developing and implementing inclusive green economy policies and strategies that support countries' development objectives. Particularly relevant was the call made at the seventh Joint Annual Meetings of the ECA Conference of African Ministers of Finance, Planning and Economic Development and the African Union Conference of Ministers of Economy and Finance for support to African countries in strengthening their capacity to formulate, adopt and implement inclusive green economy policies as part of the effort to accelerate structural transformation in the region. The main objective of the report is to:

Explore the linkages and the contribution of inclusive green economy policies and strategies to the structural transformation objectives of selected African countries. The aim is to promote understanding of and the adoption of inclusive green economy policies that foster sustainable structural transformation in the region.

Specifically, the report:

(a) Reviews the general macroeconomic environment and its implications for an inclusive green economy, with a particular focus on the study countries;
(b) Identifies and examines the role and significance of inclusive green economy policies and strategies in fostering structural transformation in the study countries, as well as methodologies and tools for integrated analysis;
(c) Discusses experiences and showcases good practices and lessons in the implementation process;

(d) Examines enablers of the transition to an inclusive green economy in Africa, of which the development and implementation of policies forms an integral part;
(e) Identifies challenges and opportunities related to the various thematic issues presented in the report;
(f) Presents policy recommendations to advance the various thematic objectives, including those that could enhance the adoption of inclusive green economy policies which foster sustainable structural transformation.

The report is the first major publication of ECA that examines the relationship between an inclusive green economy and structural transformation. It provides the basis for in-depth thematic and sectoral work on these two policy-relevant themes that are critical for Africa's sustainable transformation and development.

1.5 Methodology and analytical framework

Methodology

Study reports and questionnaire surveys on inclusive green economy policies and structural transformation: The preparation of the report entailed the commissioning of study reports on inclusive green economy policies and structural transformation in five countries across the subregions of Africa, namely Burkina Faso, Ethiopia, Gabon, Mozambique and Tunisia. Additionally, questionnaire surveys on the same topics were conducted in Cameroon, Ghana, Kenya, Mauritius, the Congo, Rwanda, Senegal and South Africa. A green economy profile for Morocco was based on a report on inclusive green growth in that country commissioned in 2013, and the section on the green economy in the 2015 Morocco country profile prepared by the ECA Subregional Office for North Africa (ECA, 2015 i).

The terms of reference for the country studies and questionnaire covered a range of issues addressed in structural transformation and inclusive green economy policies and strategies that have been adopted or are being implemented. Specifically, the country studies sought to: analyse inclusive green economy policies and strategies in Africa and explore the links to national development plans and visions and structural transformation; examine the role and significance of inclusive green economy policies in fostering countries' structural transformation; and explore challenges and opportunities, as well as enabling measures, and make policy recommendations on how to improve the formulation and implementation of inclusive green economy policies in line with national transformation agendas. The questionnaire also sought information on the foregoing. Identifying the aforementioned elements involved coding and analysing the contents of text from the country study reports, and completed questionnaires, documents and the literature surveyed.

The reports provided a fair amount of information on the linkages and the contribution of inclusive green economy policies and strategies to structural transformation in the five countries. For their part, the completed questionnaires and the Morocco profile provide a general appraisal of the status of the two policy themes and their interlinkages in the countries concerned.

Complementary reports: The report was further informed by two complementary reports produced by ECA and its partners. The first is entitled *Integrated Assessment Methodologies and Tools for Inclusive Green Economy Analysis in Africa* (ECA, 2016 (b))**.** It provides a comprehensive review and assessment of these tools and methodologies, as well as assessing and analysing those used in formulating and implementing Ethiopia's CRGE Strategy. The second, entitled *Enabling Measures for an Inclusive Green Economy in Africa* (ECA, forthcoming (b))**,** examines measures that could facilitate the transition to an inclusive green economy in Africa.

Literature review: Information gleaned from the country studies on inclusive green economy policies and structural transformation, the related

questionnaire and the two reports mentioned above was complemented by a literature review. The literature review involved analysing a wide range of publications and documentation on structural transformation, the green economy, green growth and sustainable development in Africa and elsewhere. Information sources included publications of United Nations agencies and international development organizations such as ECA, the African Development Bank (AfDB), the United Nations Environment Programme (UNEP), the United Nations Department of Economic and Social Affairs (UNDESA), the African Union Commission (AUC), the Organisation for Economic Co-operation and Development (OECD) and the World Bank, as well as academic papers.

Peer review processes: The preliminary draft of the present report underwent an internal peer review process, and was also shared with selected partner institutions for their review, comments and input. The revised draft report was tabled at an ad hoc expert group meeting held on 24 and 25 November 2015. The meeting provided a platform for external reviewers to deliberate on, and provide input and comments to enrich the report and help finalize it. The external reviewers included experts in development planning, sustainable development, structural transformation and the green economy, who are duly acknowledged in the present report (see annex 2).

Analytical framework

The present report explores the linkages and the contribution of inclusive green economy policies and strategies to the structural transformation of African countries. It examines the features of structural transformation and its desired outcomes in relation to an inclusive green economy. It assesses transmission mechanisms that could reinforce the expected contribution and help sustain the transformation. The report recognizes that an inclusive green economy will thrive only in a favourable macroeconomic environment. At the same time, an inclusive green economy can influence a country's macroeconomic policies to adequately cater to environmental and social policy objectives. The report also recognizes the need to adopt and implement inclusive green economy policies and strategies as part of national development plans. The aim is to ensure that an inclusive green economy drives sustainable transformation and development. The report underlines the importance of integrated approaches that take into account the economic, social and environmental dimensions of sustainable development. This underscores the pertinence of integrated assessment methodologies and tools. Finally, it acknowledges the need for enablers to promote the development and implementation of inclusive green economy policies that will lead to the desired transition and transformation. Details of this outlook and the related analytical framework are presented in figure 2.

Conceptually, structural transformation involves the following interrelated processes: (a) a declining share of agriculture in GDP and employment; (b) rapid change in economic location and urbanization as people migrate from rural to urban areas; (c) the rise of a modern industrial and service economy, with a growing middle class; (d) change in income distribution and in the institutional environment; and (e) a demographic transition from high to low birth and death rates (Memedovic and Lapadre, 2009; Timmer and others, 2012). Structural transformation can broadly be considered to result in three interrelated desired outcomes or features: (a) increased productivity, industrialization, economic diversification and competitiveness; (b) changes in income distribution and poverty reduction; and (c) enhanced human development.

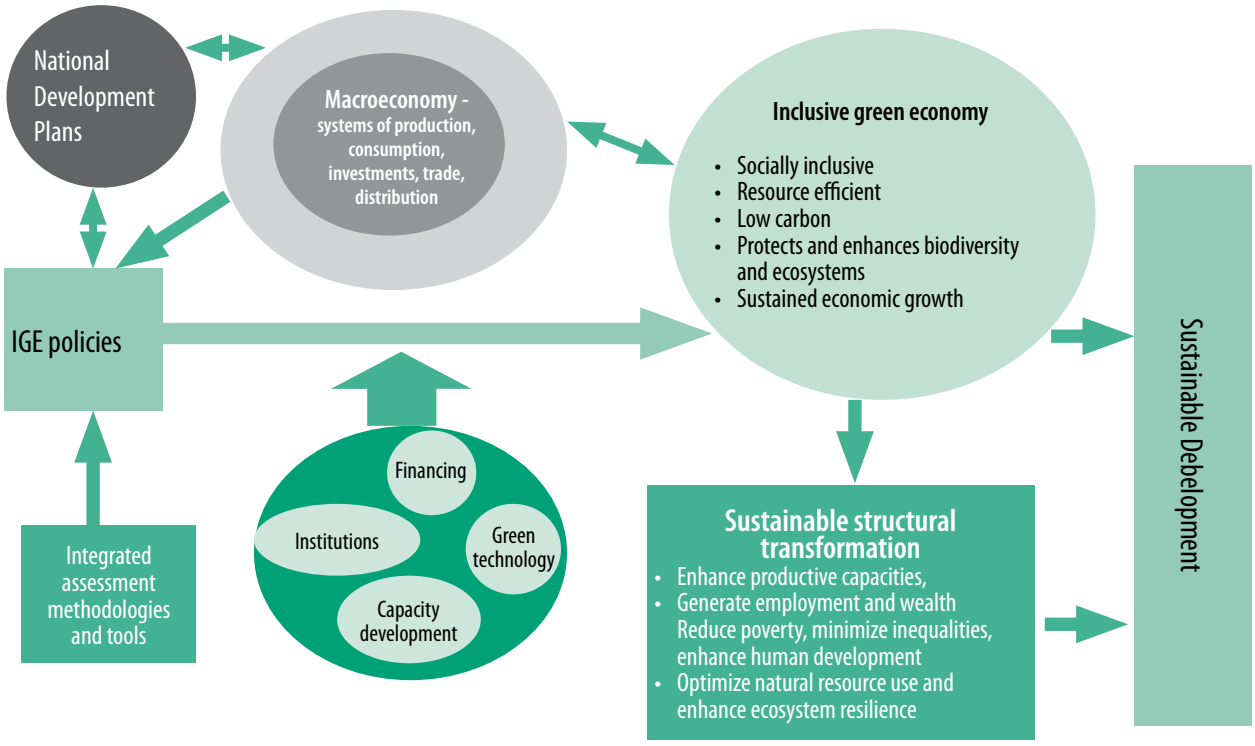
Inevitably, the drive for structural transformation in Africa is expected to spur increases in resource uptake, and the development and use of infrastructure, particularly energy and transport for industrialization – with undesirable social and environmental outcomes. Additionally, the high dependence of Africa's economies on natural resources could increase pressure on resources.

Broadly speaking, an inclusive green economy is an economic system of production, distribution and consumption that seeks to achieve balanced outcomes in the three dimensions of sustainable development – economic, social and environmental. It seeks to achieve this through policies that promote growth, resource efficiency and low-carbon development, protect and enhance biodiversity and ecosystems, and are socially inclusive. An inclusive green economy should therefore lead to sustained economic growth, reduced poverty, better social inclusion and human welfare. It should also create employment and decent work opportunities for all, while supporting and maintaining a healthy functioning of the earth's ecosystem.

In the context of Africa's structural transformation, an inclusive green economy could in particular play an important role in accelerating and promoting sustainable industrial development. It could help boost renewable energy production, availability and efficiency, and increase sustainable agricultural productivity and production. Likewise, it could help in sustainably harnessing Africa's natural resource endowment, thereby expanding trade opportunities, creating jobs and reducing poverty. This underpins the linkages and contribution of the inclusive green economy to the sustainable structural transformation of African countries.

At the operational level, inclusive green economy and structural transformation goals and objectives must be translated into policies and strategies within an enabling policy and institutional context. An inclusive green economy system does not operate in a vacuum. The prevailing macroeconomic environment and policy outlook are prerequisites for the sound functioning of an inclusive green economy system. Green fiscal reforms serve as disincentives to over-extraction of resources, while creating incentives for sustainability. This in turn generates revenues and creates fiscal space for the green public investment and social expenditure that benefit the poor. Furthermore, cost-re-

Figure 2: Analytical framework for the report



Source: Author's construction, refined during the ad hoc expert group meeting organized by ECA to review the draft report, 24 and 25 November 2015.

flective tariffs have been effective in ensuring the efficient allocation of resources and attract inclusive green growth investment. Appropriate monetary policies can help deepen financial markets, develop domestic markets and enhance access to productive assets (for instance, via credit), while maintaining macroeconomic stability. Meanwhile, the inherent features of an inclusive green economy can influence the macroeconomic policies of a country to adequately cater to environmental and social policy objectives. In that way an inclusive green economy and macroeconomic policies reinforce each other.

Integrated policy approaches strengthen institutions and mechanisms for the effective design and implementation of inclusive green economy policies and strategies that support structural transformation. An integrated systems framework also promotes multisectoral approaches and policy coordination to maximize the linkages between inclusive green economy policies and structural transformation. It further helps to inform decisions and actions on policy formulation and implementation as well as monitoring and evaluation, and in this way promotes policy consistency and coherence as part of an overall national development plan. This ultimately enhances the balanced integration of the three dimensions of sustainable development. The importance of integrated assessment methodologies and tools in the development and implementation of policies cannot be overstated.

Policies alone cannot enable African countries to foster inclusive green economies. To be effective, policies need to be adopted and implemented alongside other enablers, such as strong institutions, policy instruments, financing mechanisms, the development and transfer of technology and capacity-building. Firstly the enablers drive and support the development and implementation of effective inclusive green economy policies. Secondly, enablers support the transmission mechanisms necessary to drive the transition. Thirdly, a strong enabling environment creates the stability required to consolidate gains.

1.6 Limitations of the report

Data paucity has made it difficult to carry out comparative analyses of some key indicators of macroeconomic conditions across countries and link them to inclusive green economy outcomes. The development and implementation of inclusive green economy policies and strategies in the context of countries' structural transformation agenda is relatively new. For that reason, the related documentation of experience, including good practice and lessons, is still evolving. Furthermore, adequate consultation with all relevant stakeholders would have enriched the information provided in some of the completed questionnaires. Focal institutions could be designated to facilitate coordination and consultation on green economy matters in countries, and also serve as valuable points of reference for partners.

1.7 Outline of the report

The report comprises five chapters. Following the introductory chapter, chapter 2 provides an analysis of the macroeconomic environment in the context of an inclusive green economy, with a particular focus on the study countries. It discusses the importance of macroeconomic stability and the role of monetary and fiscal policy in building an inclusive green economy. Subsequent sections discuss economic structures, poverty, employment and energy in relation to the relevant macroeconomic variables and their implications for an inclusive green economy.

Chapter 3 analyses inclusive green economy policies and their role and significance in fostering structural transformation. For this purpose, it reviews structural transformation and inclusive green economy policies and strategies in the study countries, focusing on their visions, goals, objectives and priority areas. The chapter examines synergies between the two policy themes, exploring win-win scenarios and possible trade-offs. It also provides an overview of methodologies and

tools for the integrated assessment of inclusive green economy policies and strategies, including those that could be used to analyse inclusive green economy policies in Africa, taking into account the region's specificities.

Chapter 4 discusses experiences pertaining to the development and implementation of inclusive green economy policies and strategies, showcases good practice and lessons and examines success factors.

Chapter 5 explores enabling measures in place and those necessary to facilitate the transition to an inclusive green economy and to foster structural transformation. It discusses selected enablers for an inclusive green economy, including: policy instruments; technological development and innovation; capacity-building; and financing for an inclusive green economy.

All the thematic chapters highlight challenges and opportunities, and offer recommendations based on the findings.

2. The macroeconomic environment for an inclusive green economy

Key messages

A conducive macroeconomic environment is crucial for inclusive green economy policies that support sustainable structural transformation. And an inclusive green economy would benefit from a policy mix with incentives to promote green investment and fiscal reforms that create fiscal space for public green investment while preserving macroeconomic stability. In addition to sustained growth, an economy with low and stable inflation rates and predictable tax and spending also allows for planning and investment in the green economy.

Investment in green sectors can accelerate economic diversification and the shift from predominantly agriculture-based economies towards an economic structure based on industry and modern services. Green investment in key sectors, such as agriculture, would generate high returns in terms of growth, employment and poverty reduction. It can promote industrial supply chains based on natural resources, and contribute to value addition in the economy, diversify the supply of manufactured goods, and accelerate structural transformation.

Economic growth does not automatically translate into widely shared gains, and the transition to an inclusive green economy can be an opportunity to transfer the wealth of natural capital, through investment in physical and human capital. The level of social development, the quality of infrastructure and the employment and poverty situation in the study countries suggest low levels of inclusion. Greater inclusiveness depends on among other factors, better distribution of income and employment creation, which can be fostered through an inclusive green economy approach.

Increased and sustainable energy supply is crucial to the transition to inclusive green economies. Energy is an important driver of economic growth and social development. Energy is needed to power Africa's drive towards industrialization and structural transformation. And Africa's renewable energy potential presents enormous prospects to increase the supply of sustainable energy.

To achieve better outcomes for an inclusive green economy, there is a need to broaden the tenets and metrics of macroeconomic policy. A comprehensive integrated monitoring and evaluation framework for macroeconomic policy will ensure that macroeconomic measures actively create an environment for an inclusive green economy to thrive.

2.1 Introduction

Much of sub-Saharan Africa's post-independence macroeconomic history has been characterized by boom-bust cycles. Growth accelerations have been common, but largely unsustainable. Weak policy formulation and implementation led to large external and fiscal imbalances, excessive debt accumulation, volatile inflation and sharp exchange rate fluctuations. However, this characterization changed in the mid-1990s, when debt relief and better macroeconomic policy management began to provide a source of stability that has helped sustain robust growth throughout much of the region. Macroeconomic stability was preserved during the financial crisis of 2008, when Africa's growth proved to be impressively resilient (Hostland and Giugale, 2013).

Nonetheless, at the global level, the financial crisis of 2008 and 2009 was a stern reminder of the potentially damaging impacts of macroeconomic instability on economic activity and human well-being. Large swings in economic activity, high inflation, unsustainable debt levels and volatility in exchange rates and financial markets can all intensify job losses and poverty. Maintaining macroeconomic stability is therefore a prerequisite for sustained and inclusive development.

In response to the crisis, the Global Green New Deal made a major contribution towards reviving the concept of a green economy. It presented the crisis as an unprecedented opportunity to rethink the prevailing economic paradigm as well as the viability and sustainability of the global development path. The Global Green New Deal highlighted the importance of fiscal and domestic policy reform to promote a green economy. It suggested fiscal stimulus in key sectors (transport, building, energy and agriculture and fresh water) and domestic policy reforms to facilitate the success of green investment in domestic economies (UNEP, 2009). Fiscal incentives and policy reforms, such as removing perverse subsidies, are important. However, there is a need to understand and correctly define a country's particular context in order to help develop and implement appropriate policies and strategies to promote an inclusive green economy in line with overall national development objectives.

The rest of this chapter discusses some of the key variables for fostering a macroeconomic environment in which an inclusive green economy can thrive. These include macroeconomic stability and the role of monetary and fiscal policy in an inclusive green economy. Subsequent sections discuss economic structures, poverty, employment and energy in relation to relevant macroeconomic measures and their implications for an inclusive green economy. Additionally, the chapter explores challenges and opportunities, and sets out conclusions and recommendations based on the analysis.

2.2 Overview of macroeconomic conditions

Macroeconomic stability and growth

The building of an inclusive green economy is a dynamic process of change requiring substantial investment. A coherent and consistent macroeconomic environment helps to boost investors' confidence and stimulate investment in green activities (Global Commission on the Economy and Climate, 2014). Moreover, growth is important in creating room for investment opportunities for a transition to an inclusive green economy. Results from Easterly and Kraay (1999) suggest a positive correlation between macroeconomic stability and growth, investment and productivity, while uncertainty and macroeconomic instability have a significant negative effect on private investment (Ramey and Ramey, 1995). Macroeconomic stability is thus critical for growth and the attainment of development objectives, including poverty reduction. However, macroeconomic stability alone does not ensure high rates of economic growth. Often, sustained high growth rates also depend upon key structural measures, such as regulatory reform, improved governance and banking sector reform. As such, growth and stability have been central to macroeconomic policies in the study countries.

Africa has witnessed growth spurred by improvements in the regional business environment and macroeconomic management, increasing public investment, especially in infrastructure, buoyant services sectors and heightened trade and investment ties with emerging economies. Africa grew at 3.9 per cent in 2014. The growth is expected to increase to 4.5 per cent and 4.8 per cent in 2015 and 2016, respectively. In 2014, only East and South Asia grew faster, at 5.0 per cent. (ECA, 2015j).

Table 1 provides an overview of some macroeconomic data. While inflation and debt have been kept at a reasonable level, they need to be carefully monitored. The five study countries have generally registered good growth rates. At 9.6

per cent and 7.2 per cent respectively for the period 2000-2014, Ethiopia and Mozambique were among the fastest-growing countries in Africa. Gabon's economy mainly depends on the oil and mineral sectors, which represent 46 per cent of GDP and 84 per cent of export revenue. This makes Gabon's economy more vulnerable to the vagaries of the global economy, such as the euro/dollar exchange rate and oil price volatility. As Tunisia consolidates its political stability, its economy is expected to grow, thanks to government spending on infrastructure, underpinned by solid growth in private consumption and investment. Burkina Faso saw a slight drop in its expected growth rates for 2014 and 2015 due to the decline in the prices of its two main exports (cotton and gold) and to political uncertainties following the regime change in October 2014.

An economy with low, stable inflation rates and predictable tax and spending promotes not only sustained growth, but also planning and investment in the green economy. Improved planning and investment are crucial for sustained economic growth and macroeconomic stability, thus making economies less vulnerable to shocks.

Monetary and exchange rate policy for an inclusive green economy

The conduct of monetary policy can directly affect a key constraint to the transition to a green economy, namely finance, through access to production assets (via credit and the deepening of financial institutions). Restrictive monetary policies can limit the transformative potential of the green economy by constraining investment and economic growth. Credit and financial services can be

Table 1: Macroeconomic overview

	Burkina Faso	Ethiopia	Gabon	Mozambique	Tunisia
Population (millions, 2014)	17.6	97	1.7	27.2	11.0
Average annual population growth rate (2000 – 2014)	3	3	2	3	1
GDP per capita (US$), 2013	740.9	489.0	10 151.3	605.0	4 263.5
Growth (average over 2000-2014)	6.3	9.6	2.3	7.2	4.1
Inflation rate 2014	0.9	8.1	6.0	2.4	5.5
Domestic credit to private sector (percentage of GDP), 2014 (*2008)	28	17.7*	15	33	75
Total tax rate (percentage of commercial profits, 2014)	41.3	31.8	40.6	36.6	62.4
Fiscal deficit (percentage of GDP), 2013	-3.5	-2.0	-1.3	-6.8	-6.2
Net official development assistance received (percentage of gross national income), 2013	9.4	8.1	0.6	14.9	1.6
Gross domestic savings (percentage of GDP), 2013	21.7	19.2	51.6	7.2	12.8
Gross capital formation (percentage of GDP)	32.9	35.8	31.6	17.6	22.0
External debt stocks (percentage of gross national income)	23.2	26.8	25	45	55.4
Current account (percentage of GDP), 2013 (*2012)	-7	-6.9*	5.4	-38.1	-8.4
Unemployment rate (percentage)	3.1	5.7	19.6	8.3	13.3
Urbanization rate (percentage)	27	17	87	31	67

Source: World Bank, *World Development Indicators;* United Nations Statistical Division national accounts database; ILO, 2014.

instrumental in allowing enterprises, including small-scale, medium-scale and informal ones, to acquire and accumulate resources to finance the transition to inclusive green economies. In particular, preferential credit to priority sectors with high employment and high investment multipliers, and to natural-resource-based sectors, could foster the green economy.

However, two constraints can be seen in Africa: the limited development of the private sector; and obstacles to credit, especially for small and medium-sized enterprises and smallholder farmers. Domestic credit to the private sector, as a percentage of GDP, is an indicator of the private sector's share in the national economy or GDP. Table 1 shows this measure to be low in the study countries. The higher the measure, the more financial resources are channelled to the private sector. This translates to greater opportunities and space for the private sector to develop and grow. In sub-Saharan Africa, domestic credit to the private sector averages 47 per cent of GDP, with the exception of South Africa, which has a high rate of 151 per cent. As a comparison, in 2014, China has a rate of 142 per cent, while the European Union and the United States achieved rates of 100 per cent and 194 per cent respectively. It is worth noting that the figure is higher for Tunisia, suggesting a stronger role for the private sector.

In addition, financial markets are not well developed in many African countries. There is a need to ease access to credit by removing obstacles, especially those that concern trade financing and affect small and medium-sized enterprises and smallholder farmers. Modern technology can help address some of the underlying constraints to rural credit. For example, transaction costs can be reduced with mobile banking, and information asymmetries reduced with biometric technology.[5] Remittances can be leveraged for lending to small and medium-sized enterprises through, for example, securitization of such flows (through "diaspora bonds") (AfDB and others, 2010). The exchange rate regime also affects the green economy. Competitive exchange rate regimes, for example involving managed devaluations, can affect small businesses if they cannot pass on the cost increases as higher prices or if demand is highly price-sensitive. On the other hand, businesses could benefit from exchange rate policies that support export-oriented or import-competing sectors, depending on the structure of the economy.

Fiscal policy

Fiscal policy is crucial in channelling more resources towards the green economy and providing policy instruments to promote the goals of the green economy. Green fiscal reforms, for example, generate revenues and create fiscal space for green public investment and social expenditure that benefits poor people. Taxes can also serve as disincentives to over-extraction of resources and provide incentives for sustainability. Cost-reflective tariffs have been effective in ensuring the efficient allocation of resources and attracting inclusive green growth investment. Public investment targeted at developing renewable energy sources, for example, can address energy and environmental challenges. Capital allocation to priority sectors with the greatest potential to create jobs through value addition and forward and backward linkages can enhance productivity and employment.

In order to have a green fiscal stimulus, domestic resource mobilization must grow so as to strengthen the macroeconomic framework's resilience and decrease dependence on official development assistance. This still represents about 15 per cent of the GDP of Mozambique and 8 and 9 per cent of the GDP of Ethiopia and Burkina Faso respectively. Most countries in Africa, especially in sub-Saharan Africa, face large resource gaps due to low domestic savings and high investment needs (see table 1). The gap between gross domestic saving and gross capital formation increases external debt and can create a risk to a

[5] Giné, Xavier, Jessica Goldberg and Dean Yan (2016). Access to credit and the scale-up of biometric technology in Malawi. Innovations for Poverty Action. Available from http://www.poverty-action.org/study/access-credit-and-scale-biometric-technology-malawi.

country's macroeconomic stability. Raising domestic tax revenues can reduce the gap. It involves deepening the tax base, strengthening tax administration and formalizing the informal sector. A case in point is Mozambique, where, following increased efficiency in tax collection, fiscal performance has remained strong over the past five years, with total revenue rising from 12 per cent of GDP in 2005 to 19.6 per cent in 2010 (ECA, forthcoming (b)).

An inclusive green economy thrives when supported by a policy mix that offers incentives to promote green investment; and fiscal reforms that create fiscal space for public green investment. In Ethiopia, the Government has designed macroeconomic policies to ensure sustainable and equitable development outcomes. Fiscal and monetary policies are geared towards supporting the Government's objectives of a sustainable and inclusive development trajectory (box 1). Additionally, the regulatory environment is important in addressing biases and inertia that work against the green economy. Regulations could impose excessive costs and constraints on economic actors – potentially making the green economy unattractive. On the other hand, reduced regulations could hamper incentives for the green economy. The relative macroeconomic stability of most African countries has facilitated high growth rates that boost investment in green sectors. However, the development of the private and financial sectors in Africa will be a constraint in terms of the kind of policies that governments can put in place to promote a green economy. A country where the domestic private sector is well developed will have a wider range of instruments to promote investment in a green economy, while

Box 1: Policy mix in Ethiopia

The fiscal policy focuses on maintaining the deficit at a sustainable level by strengthening the capacity to generate domestic revenues while enhancing public spending to benefit the poor. Mobilizing external grants and borrowing, without affecting macroeconomic balances, has also been envisaged. Monetary policy continues to focus on price and exchange rate stability, with single-digit inflation to be maintained by limiting growth in the money supply at a rate below that of nominal GDP growth. Exchange rates have been adjusted to facilitate export and import substitution.

The Government's fiscal policy has focused on sectors that could benefit the poor as well as improving the protection and conservation of natural resources. It has identified spending priorities and increased its budgetary allocation to green and social sectors, such as agriculture, education, health and infrastructure. In particular, capital expenditure allocated to these sectors increased by about 32 per cent between 2004/05 and 2012/13. Likewise, credit to these sectors has increased. In particular, credit to natural-resource-based sectors, such as agriculture, mining, power and water, grew on average by 29 per cent between 2006/07 and 2012/13. A large share of credit has been channelled to agriculture, indicating that monetary policy has been wielded in support of natural-resource-based sectors.

The monetary policy framework swings between the conflicting objectives of restraining inflation and accelerating economic growth. Inflation control has remained the dominant objective of the Government in the periods covered by the Plan for Accelerated and Sustained Development to End Poverty and the GTP. Rapid growth in real GDP has closely coincided with deceleration of the inflation rate in recent years, and vice versa. The Government has undertaken various measures to stabilize inflation, including tight fiscal and monetary policies as well as administrative measures. Fiscal measures include reducing the budget deficit and refraining from financing the deficit through direct advance borrowing from the central bank. For their part, monetary policy measures include raising the banks' reserve requirement (from 5 per cent to 15 per cent), increasing interest rates and reducing domestic credit. Administrative measures include a price cap on selected commodities and the distribution of subsidized commodities to urban dwellers, indicating that monetary policy interventions also feature social protection. Overall, the Government's monetary policy aims to restore macroeconomic stability, protect the vulnerable segments of the population and channel credit to poverty-oriented sectors and natural resources management.

Source: ECA, 2015a.

countries where the private sector is less developed will have to put more effort into attracting foreign direct investment and deploying green public investment in key sectors.

2.3 Responsiveness of the macroeconomic environment to the inclusive green economy

2.3.1 Structure of the economy

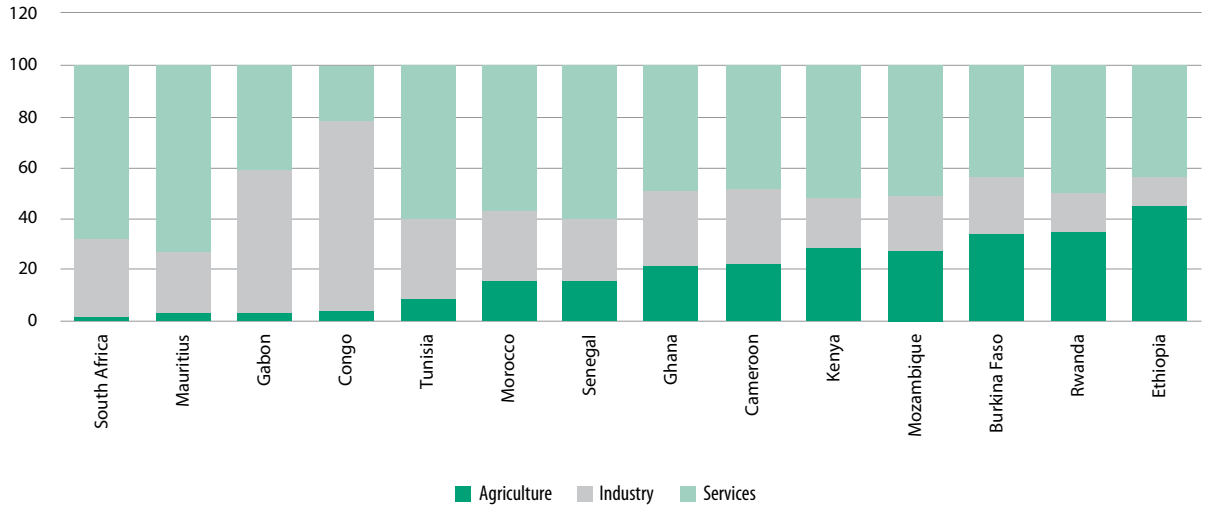
The structure of the economy reflects the structural transformation of national economies. Structural transformation, according to Kuznets (1966, 1989), is characterized by: a growing share of modern manufacturing and services and a declining share of agriculture in both output and employment; a rapid shift in the location of economic activities from rural to urban areas; and demographic transition from high to low birth and death rates. From an economic point of view, the structure of output, growth, exports and employment can provide a good picture of the process of structural transformation in the five study countries. Moreover, the structure of the economy will give a better understanding of the strength and opportunities for these countries' transformation to an inclusive green economy.

Structure of output

Of the five study countries, Burkina Faso, Ethiopia and Mozambique have similar structures, dominated by the service and agriculture sectors (see figure 3). The service sector represents more than 40 per cent of value addition for these economies, while agriculture still represents a significant portion of value added to GDP and accounts for about 85 per cent, 79 per cent and 73 per cent of employment respectively. In Burkina Faso, industry mainly depends on minerals and the construction sector, while manufacturing has not grown since the 1990s. In Gabon, structural reforms have been in place since 2009. The strategic plan, ***Plan Stratégique Gabon Emergent*** (PSGE), which aims to diversify the sources of growth and sustainable development, will help develop the country's manufacturing industry and services sector. However, oil and mineral extraction still dominate Gabon's economic structure. Tunisia has an important services sector, including communication, transport and tourism, while industry includes some extractive activities.

Sectoral shares of output for 2000 to 2014 (see table 2) show that the share of the services sector is growing in almost all countries, while the shares of agriculture, industry and manufacturing are declining. Industry comprises value addition in mining, manufacturing (also reported as a sepa-

Figure 3: Value added by economic activity (shares of GDP), 2013



Source: United Nations Statistical Division, National Accounts Main Aggregates Database.

Table 2: Value added by economic activity (shares of GDP), 2000 and 2014

	GDP US$ billions		Agriculture Perecentage of GDP		Industry (including manufacturing) Percentage of GDP		Manufacturing Percentage of GDP		Services Percentage of GDP	
	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
Burkina Faso	2.6	12.5	19	22	26	26	16	7	55	52
Ethiopia	8.2	54.8	48	42	12	15	6	4	40	42
Gabon	5.1	17.2	6	4	56	43	4	2	38	54
Mozambique	4.3	16.4	24	29	25	21	12	11	51	50
Tunisia	21.5	47	11	9	30	30	18	17	58	61
Cameroon	9.3	32.5	22	23	36	31	21	14	42	47
Congo	3.2	14.1	5	5	72	69	3	5	23	26
Ghana	5	38.6	39	21	28	30	10	6	32	50
Kenya	12.7	60.9	32	30	17	19	12	11	51	50
Mauritius	4.6	12.6	7	3	31	23	23	16	62	74
Morocco	37	107	15	16	29	28	18	15	56	56
Rwanda	1.7	7.9	37	33	14	14	7	5	49	53
Senegal	4.7	15.6	19	17	23	24	15	14	58	59
South Africa	136.4	349.8	3	2	32	29	19	13	65	68

Source: World Bank, 2015b.

rate subgroup in table 2), construction, electricity, water and gas. Agriculture, industry and manufacturing, which are key sectors that drive the green economy, continue to take significant shares of GDP, accounting for over 50 per cent in a number of countries.

Structure of employment

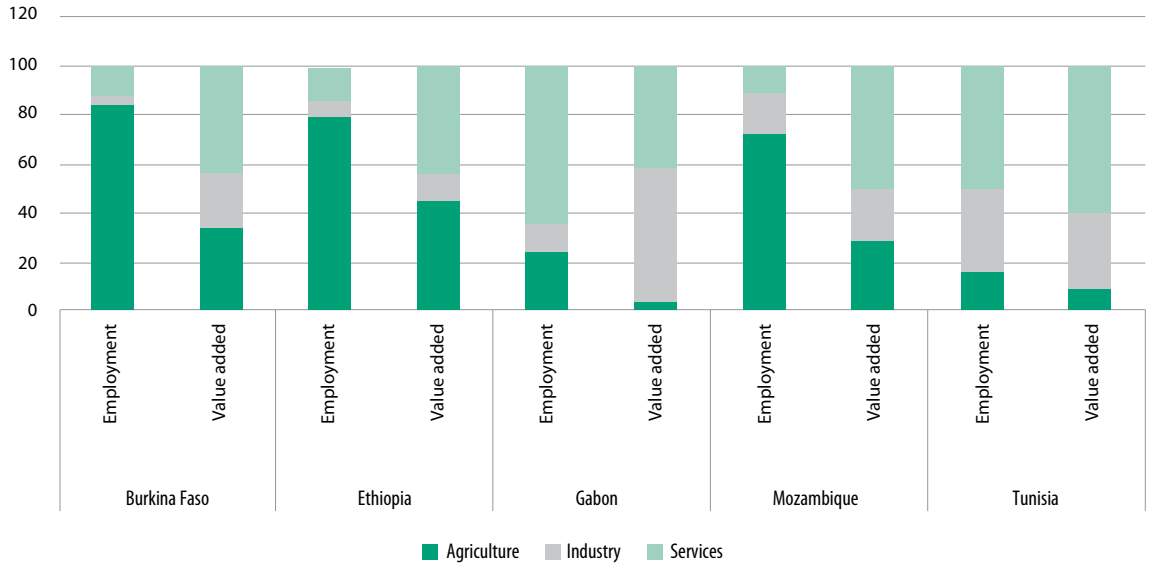
Generally, the bulk of the labour force has moved from agriculture to industry and services over the last decade, but the change has not occurred quickly enough. Structural change – the shift of resources from low-productivity to high-productivity sectors of the economy – is believed to play a key role in moving African economies towards more productive sectors, thereby boosting job creation and reducing the role of the informal sector.

Agriculture remains the major source of employment across Africa, although the share of agriculture in total employment continues to decline in many countries. In Ethiopia, the sectoral structure of employment reveals that the share of agriculture declined from 80.3 per cent in 2005 to 72.7 per cent in 2013 (see figure 4). The shares of the manufacturing and services sectors in total employment have remained low. This indicates that the vast majority of jobs are still connected to the extraction of natural resources, such as agriculture, dominated by smallholders and low productivity.

Structure of exports

Table 3 shows that many countries depend mainly on primary commodity exports. The export product concentration index measures the degree of export concentration within a country – usually close to zero for industrialized countries, reflecting highly diversified export sectors. Burkina Faso, the Congo, Gabon, Ghana and Mozambique have indices higher than 0.5. Burkina Faso's exports are dominated by cotton and gold, and Gabon's by oil and wood. A high export concentration is historically associated with high dependence on natural resources. The relative share of agricultural raw commodities, ores and minerals and fuel is also shown in table 3. Increasing diversification

Figure 4: Employment and value added by economic activity (shares of GDP), 2013



Source: Employment share: World Development Indicators and ILO statistics for Mozambique (http://www.ilo.org/ilostat/faces/help_home/data_by_country/country-details?country=MOZ&_afrLoop=30488136177739#!%40%40%3F_afrLoop%3D30488136177739%26country%3DMOZ%26_adf.ctrl-state%3Dljyx6mq2s_360). Value added: United Nations Statistical Division, National Accounts Main Aggregates Database.

and value addition provides great opportunities for greening, and can help to transform African economies by shifting resources from low-productivity to high-productivity activities and by exploring new sectors with potential dynamic comparative advantage for greening.

Contribution of natural resources to GDP

Natural resources contribute significantly to GDP (see table 4). As result of the importance of the natural resource sectors, macroeconomic policies have emphasized the efficient management of natural resources – which are also considered crucial for greening, protecting livelihoods and social inclusion.

Natural resources are mostly the basis for primary production and support sectors that drive output. Forest resources, for example, provide food, fuel for cooking and heating, medicine, shelter and clothing. Forests also support vital ecosystem services, such as erosion control, water quality preservation, biodiversity conservation and carbon sequestration. In Ethiopia, credit to natural-resource-based sectors, in particular the agricultu-

Table 3: Composition and share of merchandise exports

	Primary commodities (per cent)	Of which (excluding precious stones, gold and food commodities; per cent)			Export product concentration index,
		Agricultural raw materials	Ore and minerals	Fuel	2011
Burkina Faso (2010)	97	18	1	0	0.52
Ethiopia (2011)	90	8	1	0	0.36
Gabon (2009)	94	9	3	81	0.75
Mozambique (2010)	91	4	53	18	0.51
Tunisia (2010)	23	1	2	13	0.16

Source: ECA and AUC, 2013.

Table 4: Contribution of natural resources to GDP, 2013 (per cent)

	Total natural resources rents	Oil rents	Natural gas rents	Coal rents	Mineral rents	Forest rents
Burkina Faso	22	0	0	0	13.7	8.3
Ethiopia	15.8	0	0	0	1.1	14.8
Gabon	46.2	42.4	0.3	0	0.1	3.4
Mozambique	14.2	0.1	4.1	1.5	0.1	8.3
Tunisia	6.2	4.1	1	0	0.8	0.4

Source: World Bank, 2015b.

re, mining, power and water sectors, increased by an average of 29 per cent between 2006/07 and 2012/13. Agriculture is by far the largest recipient of credit.

The Mozambican economy in general, and the rural economy in particular, heavily depend on the exploitation and use of natural resources. Natural resources contribute directly, with over 33 per cent of the national wealth, and current dynamics in the mineral resources and hydrocarbons sectors suggest a need to increase their weight in the economy. The country has an abundance of natural resources: fertile plains that favour agriculture; minerals, iron, extensive reserves of natural gas and other fossil energy resources, such as coal. In addition, Mozambique's water resources are vast and virtually untapped. Large rivers (the Zambezi being the largest) traverse the country. They represent a great value and potential for agriculture (irrigation), as well as for the production of hydroelectric power. Current natural resources extraction and exploitation methods, such as those applied in the mineral sector, present high environmental risks. With no appropriate control capacity to cover all extracting areas, Mozambique could face increasing levels of environmental damage. Deforestation and other potential risks from drilling for oil and gas in Mozambican waters and land degradation resulting from peasant practices are also a major concern.

Burkina Faso's economy depends on natural resources and an environment that is under increasing pressure, with 44.6 per cent of the country's GDP being based on activities and sectors that heavily depend on natural resources. The overall cost of inefficiency and environmental damage is estimated to be equivalent to 21.2 per cent of the country's GDP (Burkina Faso, 2011). While Burkina Faso has relatively abundant groundwater, its water resources are overused, and the past few years have seen a decline in its aquifers. Moreover, land degradation is also a serious concern. It is estimated that 34 per cent of the land is degraded. Through the Strategy for Accelerated Growth and Sustainable Development (SCADD: *Stratégie de croissance accélérée et de développement durable)*, policies were put in place to help improve agricultural yields, productivity and the growth of agricultural value addition by 10.7 per cent between 2011 and 2015. This was also expected to increase the growth of value addition in the secondary and tertiary sectors by 11.8 per cent and 12.5 per cent respectively.

Similarly, the agriculture sector is key in Tunisia's National Strategy for Sustainable Development. Policies to support transformation in the agriculture sector through crop diversification, coupled with soil and water conservation, can help improve agricultural yields and revenues, fight rural poverty and reduce rural emigration. The forest is very important for Gabon, representing as it does over 80 per cent of the country's land mass. The forest is significant in terms of the economy and biological diversity. According to the Forest Department's 2013 report, the deforestation rate increased from 0.1 per cent annually in 2005 to 0.7 per cent in 2013. There is a need for economic diversifica-

tion in Gabon, and an inclusive green economy pathway provides an opportunity to better exploit the country's natural resources. This is particularly relevant for the forestry sector, which is the third most important economic sector, and the most important in terms of employment, representing 2.6 per cent of GDP and 4.6 per cent of exports. A green economy approach will target sustainable forestry while promoting timber processing to stimulate value added in manufacturing.

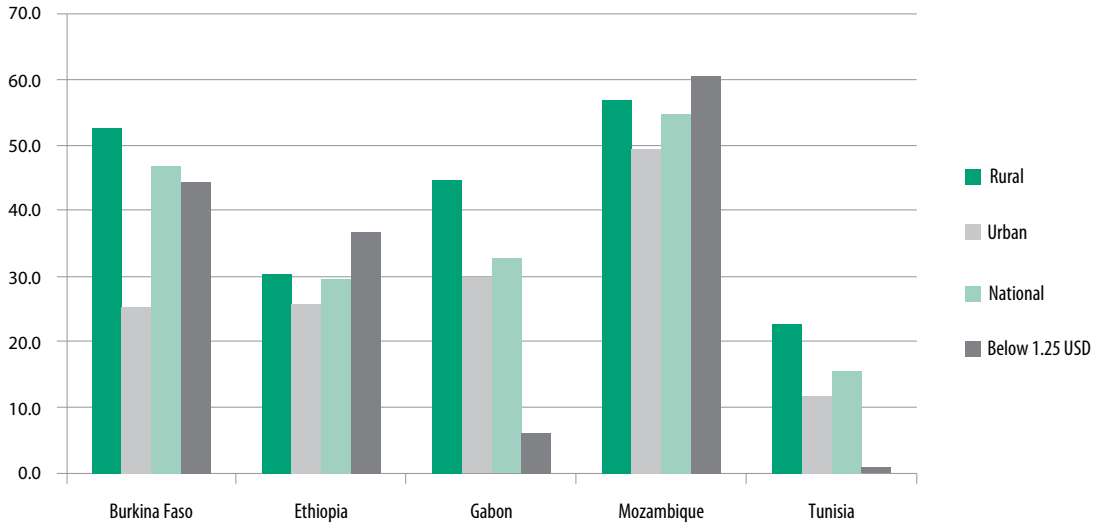
2.3.2 Poverty and employment

Despite the encouraging growth rates, poverty and inequality persist. Poverty rates (see figure 5) are quite significant in Burkina Faso, Ethiopia, Gabon and Mozambique, with marked disparities between rural and urban areas. In general, however, the proportion of the population living on less than US$ 1.00 a day has been declining steadily in all the study countries. In Ethiopia, the poverty headcount decreased from 38.7 per cent in 2004/05 to 29.6 per cent in 2010/11, a decline of 9.1 percentage points (Ethiopia, 2013).

In Mozambique, the Poverty Reduction Action Plan 2011-2014 had as its primary goal reducing the incidence of poverty from 54.7 per cent in 2009 to 42 per cent in 2014. The Plan stipulated that government action must first and foremost promote growth to benefit the poor. In the Mozambican context, this "broad-based" growth can be achieved through investment in agriculture in order to boost the productivity of the sector and diversify the economy. This will create jobs and linkages between foreign investment and the local economy, support micro, small and medium-sized enterprises, and foster human and social development. Such economic growth will simultaneously reduce food insecurity and chronic child malnutrition, while strengthening defence mechanisms against endemic diseases, such as HIV/AIDS, tuberculosis and malaria.

The Human Development Index (HDI) devised by the United Nations Development Programme (UNDP), which is a composite index encompassing life expectancy, education and GDP, highlights the progress that Africa still needs to make. Indeed, the majority of African countries have a low ranking on the index, while only five (Algeria, Libya, Mauritius, Seychelles and Tunisia) have a high ranking. Although Burkina Faso, Ethiopia and Mozambique have a low ranking (see table 5), all the study countries have made steady progress in the HDI.

Figure 5: Percentage of the population below the poverty line



Source: AfDB, 2015 and Tunisia, 2012.

Table 5: HDI and Gini coefficient

	HDI	HDI ranking	Inequality-adjusted HDI	Overall loss	Gini coefficient
Burkina Faso	0.388	181	0.252	35.0	39.8
Ethiopia	0.435	173	0.307	29.4	33.6
Gabon	0.674	112	0.512	24.0	41.5
Mozambique	0.393	178	0.277	29.5	45.7
Tunisia	0.721	90	0.562	22.0	36.1

Source: UNDP, "Briefing note for countries on the 2015 Human Development Report 2014: Tunisia" Available from http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/TUN.pdf.

Access to basic services

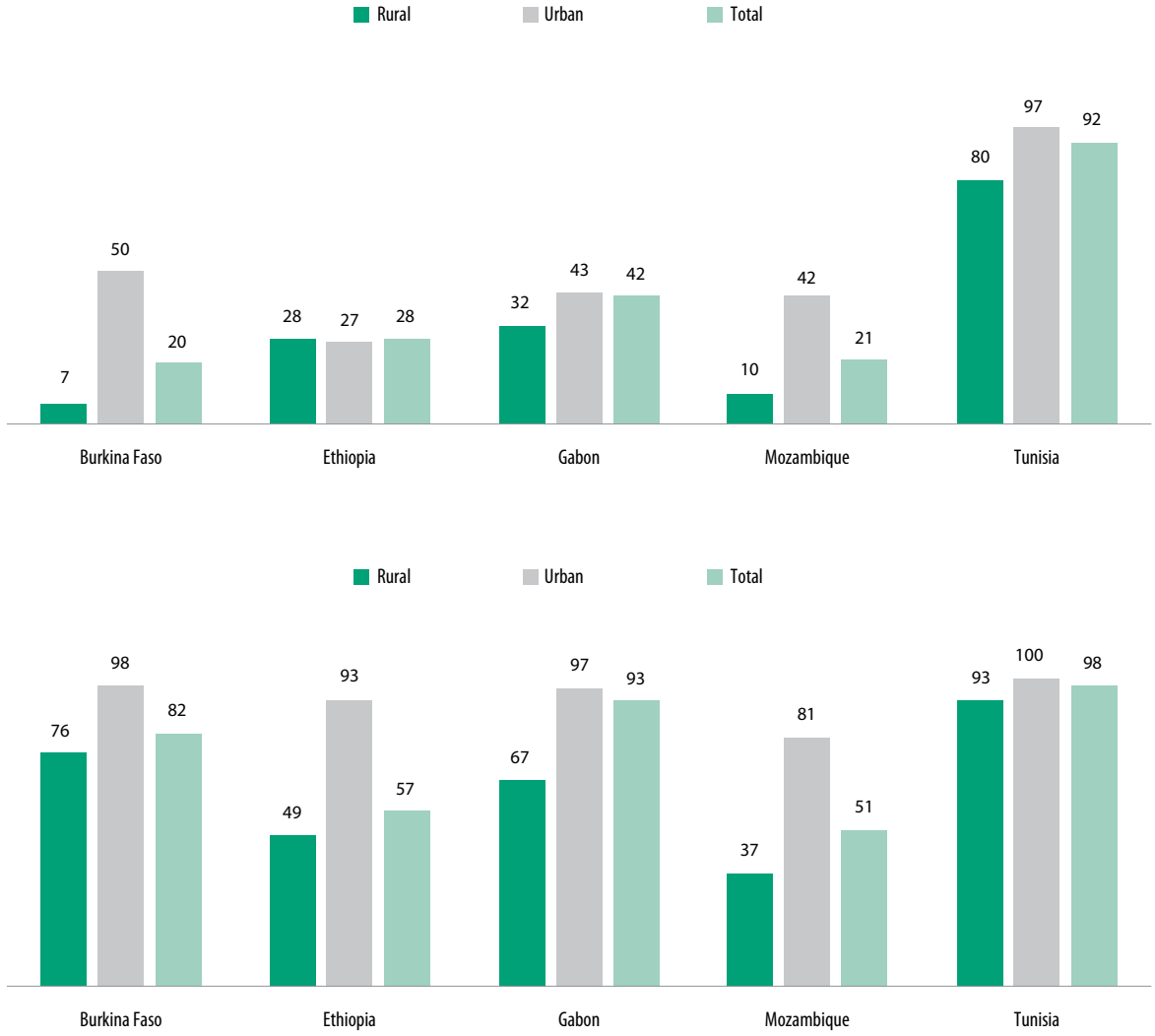
Monetary and non-monetary variables have a bearing on the well-being of a population and hence on poverty (Bourguignon and Chakravarty, 2003). Drawing on this assumption, the Multidimensional Poverty Index devised by the University of Oxford identified three components of poverty: poor health, lack of education and an inadequate living standard, in the form of, for example, lack of access to electricity, water or sanitation (Alkire and Santos, 2010). While Africa has achieved improvements in access to education, access to water, sanitation, electricity and public health care remain challenges. Mozambique has made major progress in providing access to education and in moving towards gender parity. Between 2013 and 2014, the net enrolment of six-year-old children increased from 76 to 93 per cent. Furthermore, every year, more children are enrolled in the education system. Nonetheless, challenges still remain in school retention and the quality of educational outcomes. And progress has not been even across all dimensions of social development, with slower progress in water and sanitation.With the exception of Tunisia, the proportion of the population with access to water and sanitation is still low in the study countries (see figure 6). Major progress has been made in access to water sources during the last decade, but sanitation remains a critical issue (see figure 7).

Lack of access to electricity is another component of inadequate living standards identified in the Multidimensional Poverty Index. Access to electricity is a real constraint that hinders Africa's socioeconomic development. In 2015, only 35 per cent of sub-Saharan Africa's population had access to electricity.

Demand for electricity is increasing rapidly. In 2011, electricity consumption increased by about 18 per cent over 2006 (from 569,510 to 671,344 million kWh). Total hydroelectricity generation (and access) in the study countries was as follows: Burkina Faso 256 MW (14 per cent national, about 40 per cent in urban areas and not more than 5 per cent in rural areas) (World Bank, 2013). In 2015, Ethiopia's installed hydroelectric capacity was 10,641.6 MW; representing 90.80 per cent of current power generation. Only 17 per cent of households are directly connected to the grid; and only 2 million people have access to electricity (Ethiopia, 2012).

In Gabon, current energy production capacity is 373 MW, of which 45 per cent comes from fossil fuel thermal power plants, notably derived from oil and gas. However, hydroelectric power generation potential is quite significant, estimated at 5,000 to 6,000 MW (AfDB Group, 2011a). Despite a high national electrification rate of 83 per cent, access to electricity is very low in rural areas (15 per cent) (World Bank, 2015a). In Mozambique, current total installed power generation capacity is about 939 MW. Hydropower contributes 561 MW (61 per cent), oil 27 per cent and natural gas 12 per cent of total electric grid generation (Uamusse, Juízo and Person, 2015). Only 17 per cent of the population had access to electricity in 2011 (AfDB Group, 2011b).

Figure 6: Percentage of the population with access to (a) improved sanitation facilities and (b) improved drinking water sources in 2015



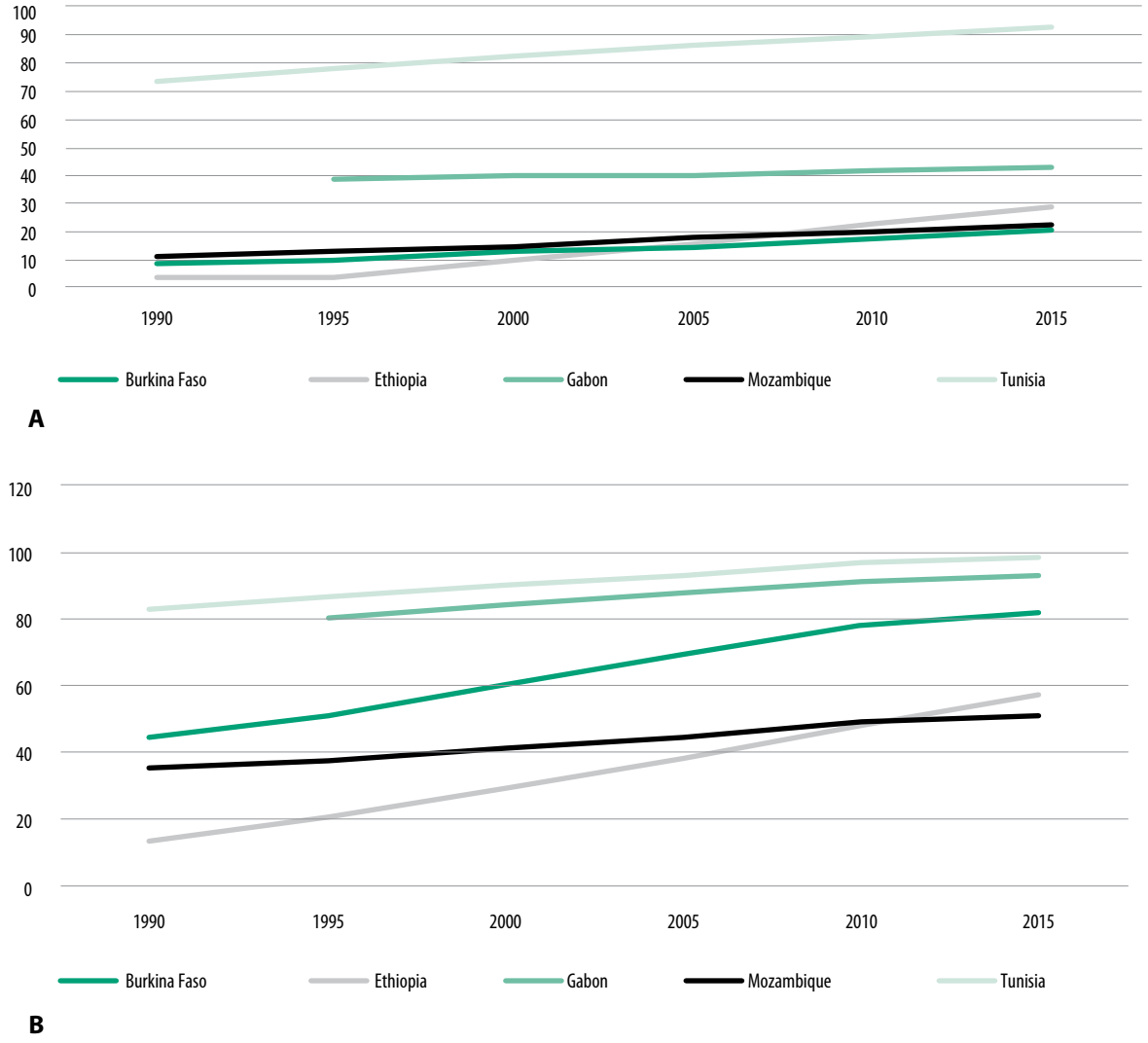
Source: MDG database, 2015.

In Tunisia at the end of 2011 the installed capacity of the power generating system was around 4,024 MW, consisting of gas turbines (1,532 MW); four steam units totalling 1,090 MW, burning either natural gas or heavy fuel; combined-cycle plants at Sousse (364 MW) and Ghannouch (416 MW); a wind farm at El Haouaria (53 MW); and hydroelectric power stations with a combined installed capacity of 62 MW. The rate of electrification for Tunisia as a whole was 99.5 per cent in 2012: 98.9 per cent in rural areas and 99.8 per cent in urban areas (Benedetti and others, 2013).

Health

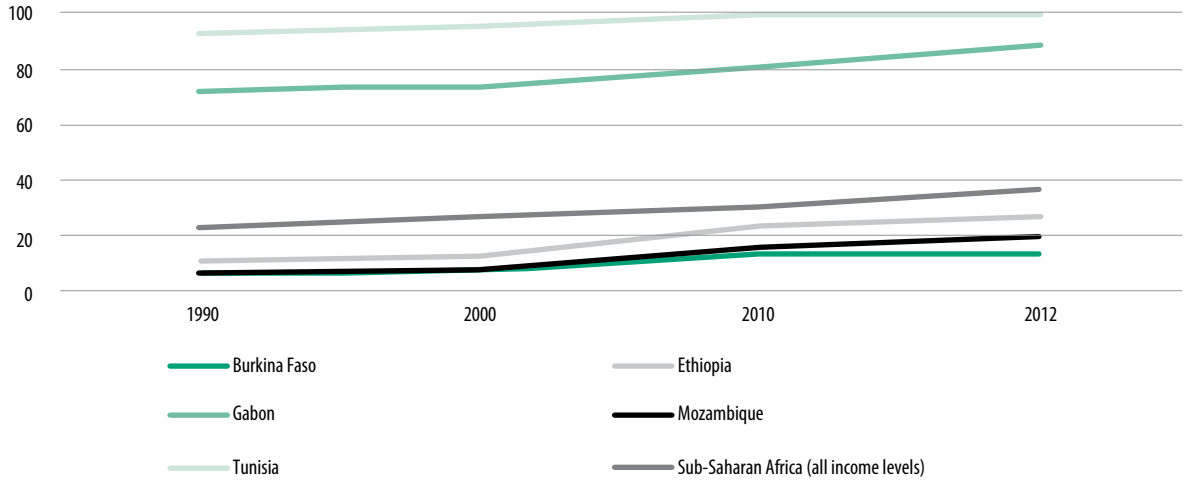
Significant progress has been made in the health sector in the last 20 years, as shown by the impressive decline in the mortality rates for children under five in all the study countries (see figure 9). However, many people remain undernourished, with 17 per cent of the African population considered to be in this category. Moreover, total health expenditure per capita and the number of physicians per inhabitant are very low in the study countries, and so is human development, notably in Burkina Faso, Ethiopia and Mozambique (see table 6).

Figure 7: Percentage of the population with access to (a) improved sanitation facilities and (b) improved drinking water sources, 1990-2015



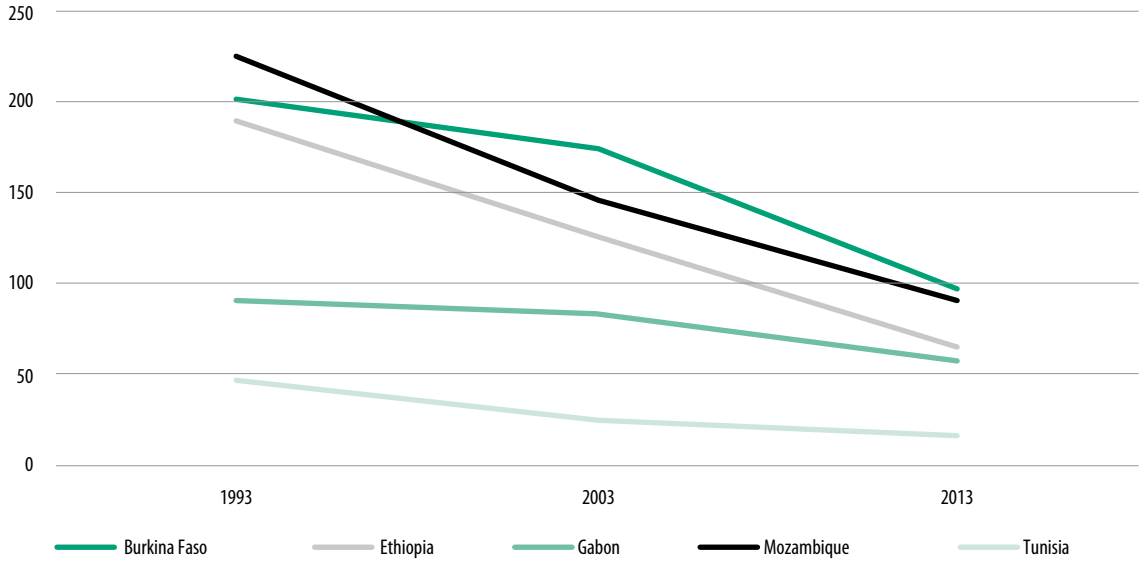
Source: MDG database, 2015.

Figure 8: Percentage of the population with access to electricity, 1990-2012



Source: World Bank, 2015b.

Figure 9: Mortality rate for children under five (per 1,000), 1993-2003



Source: World Bank, 2015b.

In Burkina Faso, the proportion of households living within 30 minutes of a health centre has been increasing, and stood at 45.5 per cent in 2009. This improvement can be explained by the rising number of new health facilities and greater access to them. Better access to health centres had a positive impact on undernourished children under five, who represented 30 per cent of that age group in 2014. Ethiopia has also made improvements, notably in achieving universal access to basic health services, with primary health service coverage rising to 93 per cent in 2013. The proportion of births attended by skilled health personnel improved from 5.7 per cent in 2005 to 23.1 per cent in 2013. Similarly, infant, maternal and under-five mortality rates declined between 2005 and 2013.[6] However, some health-related indicators, such as maternal, infant, and under-five mortality rates, showed no improvement between 2010 and 2013. In Mozambique the increase in access to health care stands out, especially in rural areas. The proportion of the population with access has increased from 78 per cent (2013) to 82 per cent (2014). Since 2010, Gabon has been making improvements in economic and social infrastructure, such as roads and university hospitals.

[6] For instance, infant and under-five mortality rates (per 1,000 live births) declined from 77 and 123 in 2005 to 59 and 88 in 2013, respectively.

Access to health care is an important aspect of the fight against poverty, because poor health decreases labour productivity and malnutrition among children adversely affects their school performance, whereas a healthy population is an engine for economic growth (WHO, 2002). Improving health care and education should be priorities in the effort to tackle income poverty in the long term. Investment in health and education will help make growth inclusive and reduce inequality.

Employment

The high growth rates recorded in most countries have not created enough jobs for the growing working-age population. Access to productive employment is essential for including poor people in the growth process.

The unemployment rate, a widely used measure of unutilized labour supply, is high in Gabon and Tunisia (see table 7). However, although some countries have relatively low unemployment, the problem in many developing countries is the lack of decent and productive work, rather than unemployment. This results in various forms of labour underutilization, including underemployment and low incomes. With the high rates of informal work, most workers are locked in vulnerable employment. The share of the working poor

Table 6: Key health indicators

	Life expectancy at birth (years), 2014	Undernourished in total population (per cent), 2013	Total health expenditure as a percentage of GDP, 2012	Total health expenditure per capita (US$), 2012	Physicians per 100,000
Burkina Faso	56.7	21	6.2	37.8	5
Ethiopia	64.2	35	3.8	17.6	3
Gabon	63.8	5	3,5	396.7	29
Mozambique	50.6	28	6.4	37.2	4
Tunisia	76.1	5	7.0	296.9	122
Africa	59.6	17	6.1	112.4	..

Source: AfDB, 2015.

Table 7: Unemployment rates, 2013

	Unemployment rate (per cent)	Youth unemployment rate (per cent)	Adult unemployment rate (per cent)	Share of youth unemployed in total unemployed (per cent)	Share of youth unemployed in youth population (per cent)	Employment-to- population ratio
Burkina Faso	3.1	4.9	2.2	53.4	3.8	81
Ethiopia	5.7	8.0	4.5	47.8	6.1	79
Gabon	19.6	35.2	17.2	24.0	9.0	49
Mozambique	8.3	14.3	6.1	47.3	9.4	77
Tunisia	13.3	31.2	10.2	34.5	9.8	41

Source: ILO, 2015.

in total employment is 38.8 per cent and 62.2 per cent when the poverty level is set at US$ 1.25 and US$ 2 a day respectively (ILO, 2015). Youth employment rates are about twice as high as adult unemployment (see table 7), and, coupled with the high proportion of youth in the total of unemployed, this suggests an unequal distribution of the problem of unemployment.

In Mozambique, the exponential growth of the urban population (68.6 per cent)[7] has exerted great pressure on the environment, through demand for space (reducing green areas in the urban belt), pressure on infrastructure and the proliferation of informal settlements in all the country's cities and towns. This phenomenon has put pressure on the employment market, which cannot meet the demand. Consequently, the number of destitute people has grown, worsening urban poverty. This reality has increased the proliferation of informal settlements and the occupation of spaces in unsafe areas (beside electricity transmission lines, in the protective strip along railways, in areas prone to flooding and on steep slopes).

2.3.3 Energy and resource efficiency

Energy is an important driver of economic growth and social development. Energy is needed to power Africa's industrialization and structural transformation drive. Clean energy is a critical requirement for inclusive green growth. Renewable and modern forms of energy enhance productivity, environmental protection and climate change mitigation and adaptation.

[7] Mozambique, Instituto Nacional de *Estatistica (2010). Projecções anuais da população total, urbana e rural (2007–2040) por Provincia.* Maputo.

Energy sources

The Congo, Morocco, Senegal, South Africa and Tunisia depend heavily on fossil fuel for their primary energy supply (see figure 10). Table 8 shows that energy use outstrips energy production, except for Gabon (an oil producer), Cameroon, the Congo and South Africa.

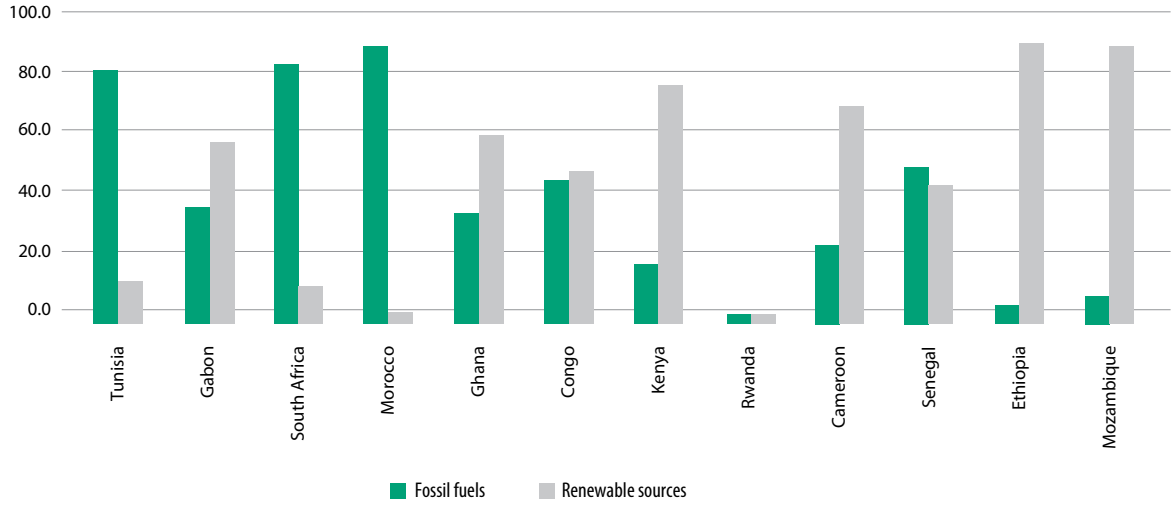
In Burkina Faso, the forested area shrank from 25 per cent of the surface area in 1990 to 20.6 per cent in 2010. According to studies on forests (Burkina Faso, 2002), the observed trend is a result of human activities and the impact of climate change. Back in 2000, the forest area covered 62,480 sq. km., which was in the region of 23 per cent of the country's total land area. However, a decreasing trend is clearly discernible; by 2011, forest coverage had fallen to 55,890 sq. km., or some 20 per cent of the land area. The deforestation rate as of 2012 stood at 107,626 hectares per year (UNEP, 2014). The country depends on wood for fuel, with 88 per cent of households using wood; 4.3 per cent and 5.3 per cent use coal and gas, respectively.

In Ethiopia, the majority of rural households use kerosene for lighting and firewood for cooking. The proportion of households which depend on wood for cooking has increased in urban and rural areas, and represents about 87 per cent of the total population. This has resulted in deforestation and greenhouse gas emissions. Similarly, a large proportion of rural households depend on unsafe sources of water (such as unprotected wells, rivers, lakes and rainwater) for drinking. Designing and implementing inclusive green economy policies and strategies could help stem greenhouse gas emissions caused by deforestation and improve inclusiveness in rural and urban areas. Energy is expensive in Burkina Faso, which imports oil, and renewable energy deployment remains low. Therefore the majority of the population depends mainly on wood fuel as a primary source of energy (82 per cent).

Sources of electricity

In sub-Saharan Africa, the primary source of electricity production is coal, which accounts for 56 per cent of the supply. Hydropower represents a significant increasing share of the electricity produced in Africa, constituting about 20 per cent (see table 9). However, as highlighted in the poverty and employment section above, access to electricity is generally low across sub-Saharan Africa. More than half of the population of Cameroon, the Congo, Ethiopia, Kenya and Mozambique have no access to electricity. This is partly due to the high cost of electricity generation owing to some countries' overreliance on fossil fuels for genera-

Figure 10: Primary energy supply as a percentage of total, 2012



Source: UNDP, 2014.

Table 8: Energy production, energy use and growth in energy use, 1990-2012

	Energy production		Energy use				Growth in energy use (per cent)
	Total, Thousands of metric tons of oil equivalent		Total, Thousands of metric tons of oil equivalent		Fossil fuel Percentage of total energy use		
	1990	2012	1990	2012	1990	2012	1990-2012
Ethiopia	20.2	43	21	45.5	3.9	5.5	3.4
Gabon	14.6	14.1	1.2	2.2	32	40.7	2.8
Mozambique	5.6	15.8	5.9	10.4	5.5	8.4	2.9
Tunisia	5.7	7.3	4.9	9.9	87	88.1	3.4
Cameroon	11	7.8	5	7	18.7	27.9	1.6
Congo	8.7	15.7	0.8	1.7	33.3	47.9	3.9
Ghana	4.4	10	5.3	10.1	18.2	43.6	2.6
Kenya	8.7	16.9	10.7	20.5	17.9	17.7	3.1
Mauritius	0.3	0.2	0.7	1.3	55.5	83.2	3.6
Morocco	1.5	1.7	7.6	18.8	85.4	89.3	4
Mozambique	5.6	15.8	5.9	10.4	5.5	8.4	2.9
Senegal	1	2.3	1.7	4.1	43.3	44.6	4.4
South Africa	114.5	166.1	91	140	86.2	87	2.3
Middle East and North Africa	570.5	815.8	187	475.5	97.1	97.9	4.3
South Asia	349.1	657.2	385.8	934.6	53.5	71.5	4
Sub-Saharan Africa	460.3	837.1	298.3	540.4	40.9	38.7	2.8

Source: World Bank, 2015b.

tion, but also to underutilization of the renewable energy potential, such as solar or hydropower.

For example, Gabon and Mozambique have vast but virtually untapped water resources. Large rivers (the Zambezi being the largest) traverse Mozambique, and constitute a great value and potential for agriculture (irrigation), as well as the production of hydroelectric power. The total capacity of this energy source is estimated at 16,000 megawatts for Mozambique and about 7,000 megawatts for Gabon.

Carbon emissions and energy efficiency

While carbon dioxide emissions are generally low in Africa, emission levels increased by 65 per cent between 1990 and 2011 in sub-Saharan Africa (World Bank, World Development Indicators database). This increase has been associated with continued dependence on fossil fuels as well as changes in land use, including deforestation and forest degradation. However, it should be noted that while carbon dioxide emissions increased in absolute terms, some decoupling has been happening in Africa since 1992 (see figure 11). GDP has increased more rapidly than carbon dioxide emissions, reflecting an improvement in energy efficiency in the region.

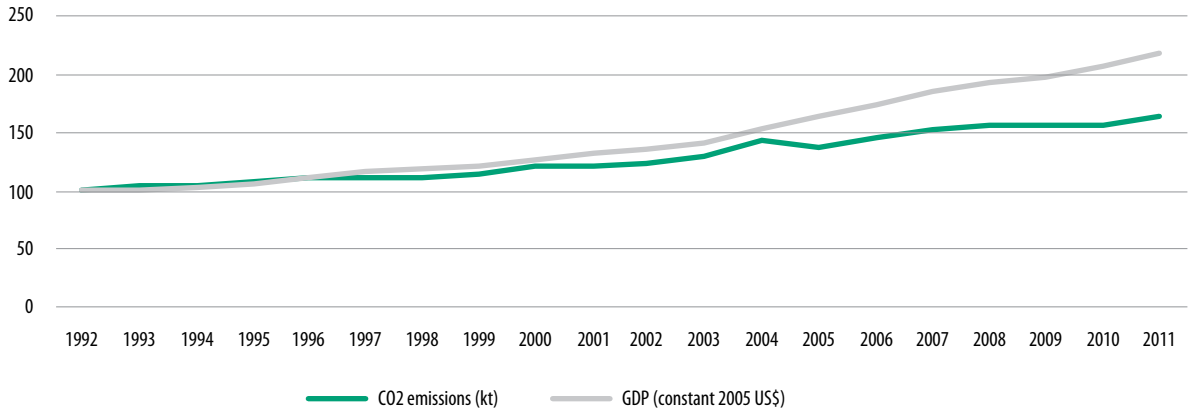
Tunisia has implemented an energy efficiency programme, whose results can be seen in figure 12.

Table 9: Electricity production, source of production and access

	Electricity production	Sources of electricity production, percentage of total, 2011						Access to electricity (percentage)
	(billions of kilowatt-hours)	Coal	Natural gas	Oil	Hydro-power	Renewable sources	Nuclear power	
Ethiopia	6.3	0	0	0.6	99.3	0.1	0	23
Gabon	2.1	0	43.6	15.4	40.6	0.4	0	81.6
Mozambique	16.8	0	0.1	0	99.9	0	0	15
Tunisia	16.5	0	97.7	0.1	0.3	0.7	0	99.5
Cameroon	6.1	0	7.1	19.5	72.3	1	0	49
Congo	1.3	0	38.1	0.7	61.2	0	0	37.1
Ghana	11.2	0	24.3	0	67.5	0	0	60.5
Kenya	7.8	0	0	32.7	44	23.3	0	23
Mauritius	2.7	40.6	0	39.2	2.1	18.2	0	100
Morocco	25	46.7	16.2	26.3	8	2.8	0	98.9
Senegal	3.2	0	2	84	8.2	2.5	0	56.5
South Africa	259.6	93.8	0	0.1	0.8	0.2	5.2	82.7
Tunisia	16.5	0	97.7	0.1	0.3	0.7	0	99.5
Middle East and North Africa	657.1	1.8	65.6	24.3	5.5	0.4	0	94.6
South Asia	1 238.30	58.1	14.6	5.5	14.6	3.4	3	74.4
Sub-Saharan Africa	443.8	56.1	7.4	3	19.9	0.7	3	31.7

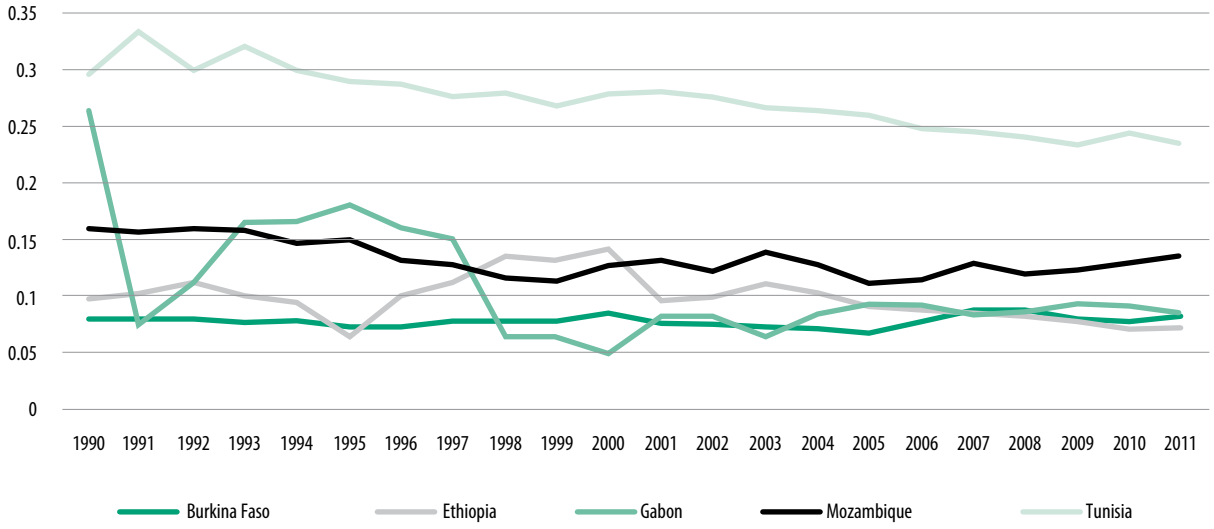
Source: World Bank, 2015b.

Figure 11: Trends in carbon dioxide emissions and GDP in sub-Saharan Africa, 1992-2011



Source: World Bank, *World Development Indicators* data normalized by the author (1992=100 for both data sets).

Figure 12: Trends in carbon dioxide emissions (kg CO2 per US$1 GDP PPP) between 1990 and 2010 in five countries



Source: MDG database.

2.4 Implications for the inclusive green economy

A number of African countries are in the early stages of their structural transformation to a diversified economy. Their economies are still largely based on agriculture and natural resources, and a high proportion of their population lives in rural areas. Green investment in key sectors, such as agriculture, could increase productivity in these sectors and generate high returns in terms of growth, employment and poverty reduction. This observation is also pertinent for the study countries.

In parallel, the development of new green sectors, such as waste management, sustainable transport, building and energy, will create employment opportunities, more equitable distribution of income and diversification of manufactured goods. It will accelerate the shift from agriculture-based economies that are overreliant on natural resources towards an economic structure based on industry and modern services. The development of these sectors will prompt diversification, and thereby reduce the vulnerability of African economies.

The employment and poverty situation is a major concern in many African countries. As a result, macroeconomic policies focus on poverty reduction and employment creation. Poverty reduction is central to the inclusive green economy and structural transformation. In Ethiopia, poverty reduction is crucial to the GTP. In order to enhance inclusiveness Ethiopia has committed resources to socially disadvantaged groups (the poor, youth and women) and increased expenditure to sectors with the greatest potential to reduce poverty. Ethiopia's macroeconomic outlook emphasizes the so-called poverty sectors: agriculture, natural resources, road construction, education, health and social welfare, which are also considered crucial for greening and social inclusion. Mozambique's Poverty Reduction Action Plan 2011-2014 aimed to reduce the incidence of poverty from 54.7 per cent in 2009 to 42 per cent in 2014. In Tunisia, the National Strategy for Sustainable Development estimates that green investment of 2 per cent of GDP would create 227,000 to 307,000 jobs (a 7 to 9.5 per cent increase in total employment).

The level of social development and the quality of infrastructure in the study countries remain below standard. Thus, through investment in

physical infrastructure and human capital the transition to an inclusive green economy can offer an opportunity to transfer the wealth of natural capital without causing risks. For example, environmental quality and climate change vulnerabilities are a major cause of food insecurity in Mozambique. Environmental degradation and climate variability exacerbate the incidence of malnutrition. The strategy contributes to the inclusive green economy by providing guidance on how families can strengthen their resilience to seasonal variations in crop production. Investment in the resilience of production systems would protect agriculture from seasonal variations in the production cycle.

Energy is one of the critical sectors for the green economy and structural transformation in Africa. Energy is a necessity for Africa's growth, and managing it offers opportunities for the development of a green economy. Supplying increased and sustainable energy is crucial to the transition to inclusive green economies. Africa's renewable energy potential presents enormous prospects for increasing the supply of sustainable energy. Mindful of the high initial capital requirements, governments are putting in place mechanisms to increase the uptake of renewable energy, inter alia through Renewable Energy Feed-in Tariffs (REFITs). A REFIT guarantees the sale of all the energy produced at a fixed and profitable price. This encourages independent power producers, such as companies, communities and even individual citizens, to invest in renewable energy technology. Many countries, including Ethiopia, Ghana, Kenya, Mauritius, Rwanda and South Africa, have either adopted or are putting in place macroeconomic policies to attract investment in renewable energy through REFITs.

A number of other energy-related policies supported by macroeconomic measures have been put in place across Africa. The Government of Tunisia has established a national solar energy plan to increase the proportion of renewable energy sources from 1 per cent to 4.3 per cent of all energy sources in 2014. The plan includes the use of solar photovoltaic systems, solar water-heating systems and solar concentrated power units for electricity generation. It is expected to generate savings of up to 22 per cent for 2016, helping cut 1.3 million tons of carbon dioxide emissions per year. Macroeconomic policy measures under the plan include value-added tax exemption on capital grants, a customs duty reduction and reduced lending rates.

Fiscal and monetary policies should be designed to support inclusive green economy initiatives. National policies should target investment in green and pro-poor sectors while maintaining macroeconomic stability. Additionally, macroeconomic stability could attract finance and investment for the green economy.

A broader macroeconomic framework will ensure that macroeconomic measures actively create a favourable environment for an inclusive green economy to thrive. Adopting the System of Environmental-Economic Accounting could help to broaden the framework by monitoring the interactions between the economy and the environment. The World Bank Adjusted Net Saving indicator, also known as genuine saving, is an indicator of sustainability based on the concepts of green national accounting. It is used to measure the true rate of savings in an economy, taking into account investment in human capital, the depletion of natural resources and damage caused by pollution. The indicator also presents resource and environmental issues in a manner that finance and development planning ministries can understand. It seeks to boost domestic savings and promote the need for sound macroeconomic policies. The indicator highlights the fiscal aspects of environmental and resource management, because collecting resource royalties and charging pollution taxes are basic ways of raising finance for development. This approach will also ensure the efficient use of the environment. It will lay bare the growth-environment trade-off by exposing the depressed rates of adjusted net saving among countries planning to grow today and protect the environment tomorrow (World Bank, 2012).

In their Consensus Statement to Rio+20, African countries recognized the need for new reference indicators to assess the economic, social and environmental performance of their economies, alongside GDP. At Rio+20, the international community recognized the need for broader measures of progress to complement GDP in order to better inform policy decisions. The conference therefore requested the United Nations Statistical Commission, in consultation with relevant United Nations entities and other organizations, to launch a programme of work in this area, building on existing initiatives. The programme of work on broader measures of progress that complement GDP, or GDP Plus, will enable countries to improve and broaden the assessment of their economies. The programme will also help countries adopt policies that internalize the social and environmental costs of growth, which in turn helps in defining paths to sustainable development. Measures that go beyond the GDP indicator also include broader GDP indicators that could build on GDP or other economic indicators from the System of National Accounts, adjusted to deliver a more comprehensive overview of a country's wealth or well-being (ECA, 2011; United Nations, 2012).

2.5 Challenges and opportunities

2.5.1 Challenges

The macroeconomic policy challenge. The broad objective of macroeconomic policy is to support economic and social well-being in an equitable and sustainable manner. However, traditional mainstream economics approaches macroeconomic policy in a cautious and minimalistic way, favouring non-expansionary policies and fiscal rigour. On the other hand, radical, proactive and targeted macroeconomic policies may be necessary in helping the inclusive green economy to realize the potential for economic transformation and sustainability. There remains a challenge in achieving consistent policy objectives regarding inflation, exchange rates, interest rates, external balances, growth in monetary aggregates and labour market and social outcomes. There is a need to complement country-level policy space through global policy coordination and coherence. Among other things, this will attract finance and investment for the green economy.

Effective alignment of overall development objectives with inclusive green economy strategies. Traditionally, macroeconomic frameworks, including targets and indicators, are drawn from national development plans, but seek to incorporate other policies and strategies. The current generation of inclusive green economy plans and strategies are mainly stand-alone, and not always linked coherently or consistently with national development plans. This makes it difficult for macroeconomic policies to cater for an inclusive green economy in an adequate and measurable manner. In Ethiopia, for example, the CRGE targets are expressed in terms of emission reductions, while the GTP targets are indicated variously, with explicit linkages or scope for supporting macroeconomic policy interventions.

Measuring or assessing macroeconomic conduciveness. Macroeconomic policies cover a wide range of sub-issues with complex and often country-specific interrelationships. However, growth rates and prices often mask the macroeconomic environment's performance. For instance, impressive growth rates have not translated into shared prosperity for all. There is a need to broaden the tenets and metrics of macroeconomic policy so that the inclusive green economy achieves better outcomes. The challenge of developing a comprehensive integrated assessment framework mainly pertains to statistical capacity, data availability and quality.

2.5.2 Opportunities

Strong growth momentum. Over the last decade, a number of the study countries have recorded sustained GDP growth rates. Growth matters, and provides opportunities for the green economy to thrive. Growth is important in creating room for the development of entrepreneurship and new

investment opportunities for the transition to an inclusive green economy. Economic growth can indirectly help alleviate poverty by simultaneously increasing employment opportunities and labour productivity (Melamed, Hartwig and Grant, 2011). If managed properly, economic growth generates fiscal space to increase spending on public services, like education and health care. Economic growth makes it possible to increase social spending without an increase in tax rates. Growth has been spurred by improvements in macroeconomic management, and in other areas, in pursuit of macroeconomic stability. A stable macroeconomic environment is fundamental to all forms of policy interventions and outcomes. At the same time, macroeconomic stability and an inclusive green economy can be mutually dependent.

Emerging direct macroeconomic policy support for an inclusive green economy. Increasingly, macroeconomic policy interventions are being crafted to support inclusive green economy strategic frameworks or specific policies. In contrast to mainstreaming economic priorities and dealing with the environment and society as an afterthought, policy frameworks are proactively aligning macroeconomic policies with environmental and social policy goals. Linking macroeconomic policies to an inclusive green economy – an integrated policy outlook - helps to strengthen macroeconomic mechanisms for the effective design and implementation of policies and strategies for the inclusive green economy. The aim is to enhance policy coherence and consistency and ensure balanced outcomes in all three dimensions. Examples of how macroeconomic policies could support strategic inclusive green economy objectives and foster the transition to inclusive green economies include REFIT measures to support investment in renewable energy emerging across Africa, and preferential credit to agriculture and natural resource sectors in Ethiopia. Such evidence also allows for lesson-learning and experience-sharing. It facilitates the development of macroeconomic tools and instruments for designing and implementing inclusive green economy policies.

The economic structure and development levels. The manner in which strategic frameworks approach the inclusive green economy underscores the role played by priority sectors in the economy, not only as key drivers of the economy, but also as the setting where targeted macroeconomic policies could spur inclusive green growth. The sectors include agriculture, industry, mining, trade, infrastructure, energy, forestry and fisheries. Natural resource sectors contribute significantly to employment and output. Predominantly they form the basis for primary production and support sectors that drive output. They also support services to ecosystems that are vital to livelihoods. Such services include erosion control, water quality preservation, biodiversity conservation and carbon sequestration. As such, the structure of the economy provides responsive entry points for macroeconomic policy intervention.

2.6 Conclusions and recommendations

2.6.1 Conclusions

A stable and sustainable macroeconomic environment is fundamental to all forms of policy interventions and outcomes. An inclusive green economy system does not operate in a vacuum. It thrives in a policy framework designed to support economic growth and resilience, resource efficiency and low-carbon development, the sustainable management of natural resources, the development of sustainable infrastructure and support for poverty reduction and social inclusion, among others. As such, the prevailing macroeconomic environment and policy outlook are prerequisites for the effective functioning of an inclusive green economy system. The conduct of macroeconomic policy *can constrain or foster the transition to an inclusive green economy.* Macroeconomic stability and an inclusive green economy can be mutually dependent or reinforce each other. An inclusive green economy can also influence the macroeconomic policies of a country to adequately cater to environmental and social policy objectives. Main-

taining macroeconomic stability is a prerequisite for sustained and inclusive development.

Countries are increasingly aware of the need for a suite of macroeconomic policies on economic, social and environmental matters to create a favourable setting for inclusive green economies. Some countries are drawing up fiscal and monetary policies to actively support: economic growth and resilience, resource efficiency and low-carbon development, the sustainable management of natural resources, the development of sustainable infrastructure and poverty reduction and social inclusion. Countries have identified spending and targeted investment priorities and increased capital allocations to green and social sectors, such as agriculture, natural resources management, energy, education, health and infrastructure. These targeted macroeconomic policy interventions in high-employment and investment multipliers and natural-resource-based sectors have demonstrated strong results through greater impacts on growth, resource efficiency and social inclusion.

The growth momentum provides opportunities for macroeconomic policies that promote a green economy. Growth is important in creating room for entrepreneurship and new investment opportunities to develop. This in turn supports the transition to an inclusive green economy. Economic growth opens up fiscal space to increase social spending. However, there is a need for a stronger alignment between inclusive green economy strategies and national development plans to ensure that macroeconomic policies adequately and measurably cater to an inclusive green economy.

2.6.2 Recommendations

Need to ensure a favourable macroeconomic environment for an inclusive green economy to operate efficiently

An inclusive green economy operates in an overarching macroeconomic environment. The design and implementation of macroeconomic policies can constrain or foster an inclusive green economy system. Thus, the prevailing macroeconomic environment and policy outlook are prerequisites for the effective functioning of an inclusive green economy system. For this to happen, macroeconomic policy frameworks must support economic growth and resilience, resource efficiency and low-carbon development, sustainable management of natural resources, the development of sustainable infrastructure poverty reduction and social inclusion, among others, as key tenets of an inclusive green economy.

Need to enhance the alignment of development plans with inclusive green economy strategies

Macroeconomic frameworks usually draw on national development plans. The current generation of inclusive green economy plans and strategies are mainly stand-alone, and not always coherently or consistently linked to national development plans. This makes it difficult for macroeconomic policies to cater to an inclusive green economy in an adequate and measurable manner. Reviews of existing development plans and macroeconomic policy reforms must ensure coherence so as to create a favourable environment for an inclusive green economy. Solid alignment will also help broaden the scope for macroeconomic policy interventions and the assessment of outcomes.

Need to pursue targeted interventions for greater impact

Certain sectors in the economy are not only key drivers of the economy, but also spur inclusive green growth through high employment and investment multipliers. These sectors include: agriculture, energy, industry, forestry, fisheries, mining, infrastructure and trade. Targeted macroeconomic interventions in these sectors have also demonstrated results in terms of impacts on growth, resource efficiency and social inclusion.

3. Inclusive green economy policies and their role and significance in fostering structural transformation

Key messages

Structural transformation in the study countries is driven by development imperatives, such as economic diversification, job creation, poverty reduction and meeting basic needs that contribute to human development. Matters that concern sustainability feature as important drivers in the development objectives of most of the countries. Emphasis on the quality of growth is stronger in countries that have longer-term visions that guide medium-term structural plans.

African countries are at various stages of developing and implementing inclusive green economy policies and strategies. Incorporating these into long-term development frameworks is a good approach as it helps in harnessing synergies and ensuring coherence in the development and implementation of strategies. Nevertheless, a mix of strategies may be a better approach, as it ensures that green economy policy objectives are defined within a framework document embodying a country's development vision, while at the same time they are clearly elaborated in a distinct document.

The visions, goals and objectives of the various inclusive green economy policies and strategies bode well for structural transformation policies. However, an inclusive green economy approach underlines the need for balanced outcomes in all three dimensions by ensuring that principles of sustainability form part and parcel of strategic development and implementation. As such, inclusive green economy policies can alter the pace of structural transformation, as well as its greenness and inclusiveness.

Irrespective of the strategic approach adopted, integration helps to maximize synergies among environmental, social and economic development outcomes, and to manage the costs, trade-offs and uncertainties. An integrated approach, which is an important objective of an inclusive green economy, provides countries with the policy choice to balance the economic benefits arising from development and any resulting environmental and welfare impacts arising from natural resource depletion, pollution and ecological degradation.

Effectively leveraging win-wins between structural transformations and the process of transitioning to an inclusive green economy could compensate for any short-term trade-offs that may arise. Additionally, incorporating inclusive green economy policies into long-term visions and development frameworks could help chart an implementation path that provides a holistic view of short-term, medium-term and long-term costs and benefits. This can facilitate transparent, participatory and informed decision-making.

For effective support, the methodologies and tools for inclusive green economy analysis should be applicable to the various phases of the integrated and inclusive policymaking cycle. In addition to their relevance for the different stages of this cycle, methodologies and tools should be assessed against their capacity and aptness in supporting integrated assessments in specified contexts.

3.1 Introduction

Since the mid-1990s, many African countries have undertaken macroeconomic management reforms, including the adoption of pro-growth policies,[8] to structurally transform their economies and meet development goals. However, countries have yet to realize their vision of such a transformation, regardless of the planning phases and approaches adopted. Achieving the objective of structural transformation requires a more inclusive approach to planning, more effective implementation mechanisms and robust monitoring and evaluation systems that track progress and take corrective measures to improve plan implementation.[9] As indicated in the introductory chapter of this report, African Agenda 2063 is the latest in a series of continent-wide development frameworks. The Agenda will help realize structural transformation ambitions in a rapidly changing international environment. Its 7 aspirations and 18 goals cover continental development issues that embody economic, social, environmental and governance dimensions relevant to inclusive green economy and structural transformation.

A green economy is diverse, defined not only by jobs and products, but also by major public and private investment and government policies that effect market change. Many current and emerging sectors will be affected by new green innovations and policies, ranging from sustainable agriculture to energy efficiency and from green buildings to new and renewable energy resources. The transition will involve investment in new technologies, equipment, buildings and infrastructure, and create new markets and jobs. This will address the challenge posed by the current growth pattern, which is attributed to increasing job losses or a failure to create enough new jobs. Sectors that drive the green economy are also often associated with longer and more diversified value chains than conventional sectors. This results in the creation of indirect jobs upstream and downstream, as well as induced effects through increased demand. The transition to a green economy will also involve research and development in green technologies with spillovers in many other areas of the economy. It will also stimulate new lines of business, thereby creating more jobs (UNEP, 2012).

Studies show that the employment multiplier is higher with investment in sectors that drive the green economy. In South Africa, it has been shown that between 2012 and 2030 green economy investment will stimulate 3 per cent more employment on average than the traditional investment scenario (UNEP, 2013). While net employment is set to increase, certain sectors will inevitably suffer job losses. Inherent in the inclusive nature of the green economy is a strong focus on the social dimension. This will ensure that deliberate measures are taken to mitigate the negative impacts of the transition by supporting labour markets with the right policies and institutions for decent employment, job security, social protection and livelihood support arrangements. The transition is not automatic. It needs to be supported by development-led policies and concerted actions to achieve long-term sustainable transformation visions and goals that ensure inclusive outcomes across and within countries (UNCTAD, 2011). It will necessitate changes in institutions and policies that support production systems which increase the risks and costs of environmental damage (the so-called "brown economy") (Gasparatos and Stevens, 2015).

This chapter reviews structural transformation and inclusive green economy policies and strategies in the study countries with particular attention to their visions, goals, objectives and priority areas. The chapter discusses synergies between the two policy themes and explores win-win scenarios and possible trade-offs. In this context, it underlines the importance of integrated assessment methodologies and tools for inclusive green economy analysis. It highlights challenges to, and opportunities for, developing and im-

[8] http://www.iag-agi.org/IMG/pdf/agenda-2063-c9fa.pdf.
[9] http://www.uneca.org/stories/planning-africa%E2%80%99s-development.

plementing inclusive green economy strategies that support structural transformation. Finally, it presents conclusions and recommendations based on findings.

3.2 Structural transformation strategies

The nature and type of structural transformation policies and strategies have evolved from economic stabilization, and today focus on moving up the development ladder (ACET, 2014). Since the early 1960s, most African countries have adopted an indicative planning approach to the economy. Social and economic development action plans were founded on medium-term plans. This reflected the main direction of public policies and provided a coherent framework for all stakeholders. Neither the public authorities nor economic operators ever formally and explicitly used the concept of structural transformation before the 1970s. And even today, only recent development strategies in countries such as Ethiopia explicitly mention structural transformation, rather than structural reforms or structural change. It is obvious that general policy choices, such as sectoral policies and programmes, lead to structural changes, but not necessarily to structural transformation in the way the term is defined in this report (see the introductory chapter).

In the 1980s and 1990s, especially with structural adjustment programmes, structural reforms mainly sought to implement or deepen economic liberalization, including that of foreign trade, prices and private investment. They also aimed to promote the private sector and limit State intervention while prompting the withdrawal of the State from the competitive sectors of the economy. The reforms also aimed to stabilize prices and rationalize public finances and external accounts. Restrictive economic policies increased pressure for the strategies being pursued to achieve socioeconomic outcomes. Subsequently, while most countries sought internal and external economic liberalization, they also adopted strategic development that focused on the ultimate goal of achieving social well-being.

The causes of Africa's low levels of industrialization and dependence on primary commodity exports are rooted in the colonial extractive mode of production and the industrial policies pursued from the 1950s to the 1990s. Import substitution policies did not lead to industrialization in Africa. However, it is debatable whether industrialization based on import substitution failed in Africa because governments were simply unable to pursue it, or whether they were incapable of doing so in the methodical manner adopted by Latin American or Asian governments. It is also now generally agreed that the structural adjustment programmes made African industry worse off. They failed to raise productivity, boost manufacturing or enhance value addition (ECA and AUC, 2013).

Recently, in the context of pursuing sustainable development aspirations, structural transformation policies and strategies (or simply national development policies and strategies) in Africa have begun to adopt an integrated approach to development, giving consideration to economic and social goals as well as environmental ones. The five country reports demonstrated evidence of this.

Structural transformation drivers, goals, objectives and priority areas

Structural transformation in the study countries is driven by development imperatives, such as economic diversification, job creation, poverty reduction and meeting basic needs that contribute to human development. The plans of Ethiopia, Gabon and Tunisia, and the objectives of Burkina Faso, explicitly point to sustainability as being an important driver. The National Development Strategy of Mozambique considers environmental resources and integrity as central to economic growth and poverty reduction. It should be noted that the drivers play a role in defining the goals and objectives, which aim to achieve rapid economic growth, social inclusiveness, climate resilience and environmental sustainability (see table 10). The focus on economic growth and the quality of that growth

is stronger in some countries like Burkina Faso and Ethiopia. It is noteworthy that these countries have in place longer-term visions that guide medium-term structural policies. While economic development is the main focus, the strategies cover the three dimensions of sustainable development and the need to create a macroeconomic environment that is favourable for transformative growth. The priority areas are complementary and interact to achieve the objectives of accelerated growth and sustainable development.

Ethiopia's GTP (2010 to 2015) is driven by the need to transform the economy and translate rapid economic growth into sustained and inclusive growth. Ethiopia is doing this through economic diversification that creates productive jobs, reduces poverty and inequality, enhances access to basic services and ensures environmental sustainability. Burkina Faso's SCADD strategy (2011-2015) is driven by the need to achieve a significant reduction in poverty in view of the country's rapid population growth. Burkina Faso deemed it important to accelerate the pace of growth and intensify job creation in order to reduce employment, while raising income levels and improving living conditions. Gabon adopted its PSGE strategy in 2009 in a bid to diversify its sources of growth by boosting the non-oil sector through forestry and agriculture. These two sectors have a high potential to create wealth and employment and to foster an inclusive green economy that drives structural transformation and sustainable development.

Factors driving structural policies in Mozambique include the need to: reduce poverty and enhance human and social development, diversify the economy, create jobs and strengthen linkages between foreign investment and the local economy. The National Development Strategy (2015-2035) considers environmental factors important in determining economic growth and reducing poverty. Tunisia's twelfth five-year plan, 2010-2014 and its development strategy (2012) were driven by the need to pursue internal and external economic liberalization and competitiveness as a strategic line of development, a key motivating factor since the 1980s. The plan and strategy also recognize the need to foster social solidarity and sustainable development as essential factors of overall long-term development.

With regard to priority areas, Ethiopia's GTP emphasizes promotion of the agricultural and manufacturing sectors. While maintaining the emphasis accorded to the agricultural processing and construction industries, it also gives priority to the chemical and metallurgical industries so as to develop a dynamic industrial sector that supports the country's transformation initiatives. The Plan also recognizes the importance of environmental issues, such as climate change and conservation, and the management of natural resources for sustainable structural transformation.

Burkina Faso's SCADD focuses on four strategic areas in an effort to meet the challenge of accelerating growth and sustainability: (a) developing the pillars of accelerated growth; (b) consolidating human capital and promoting social protection; (c) strengthening good governance; and (d) including cross-cutting priorities in development policies and programmes. The annual assessment in 2014 put the average rate of implementation of measures and actions under the strategy's performance matrix at 63.34 per cent between 2011 and 2013, and the average rate of fulfilment of targets at 60 per cent. The annual growth rate of real GDP fell short of the 10 per cent target. However, at 7 per cent, the annual average growth recorded between 2011 and 2013 was higher than the 5.2 per cent achieved between 2000 and 2009. This achievement is attributable to growth realized in the agricultural, mining and infrastructure sectors. It is also the result of progress in education, health, social protection, governance and cross-cutting areas such as gender, the environment, land use planning and demography. However, difficulties in public procurement and inadequate human, material and financial resources have hampered the proper implementation of sectoral and regional policies. The 2016-2018 outlook for the implementation of the Strategy has been approved, and preparations for the second phase have begun.

Gabon's PSGE is being implemented through its three pillars, namely Green Gabon, Industrial Gabon and *Gabon des Services,* and is expected to start yielding concrete results in 2016. However, the plunge in oil prices that began in mid-2014 has undermined the implementation of the Plan, particularly as the financing of the plan was based on the assumption that oil prices would remain strong. Growth was projected to slow to 4.5 per cent in 2015 from an estimated 5.1 per cent in 2014, but with a considerable risk of shrinking further. The outlook could improve in the coming five years, driven by public investment, non-oil natural resources and services. New projects in agriculture, mining and wood processing are expected to help sustain non-oil growth (Salinas, 2015). Mozambique's Plan recognizes that when planning and carrying out investment to develop the agriculture, industry, infrastructure, energy and tourism sectors, it is necessary to take into account their vulnerability to climate change. The country's transformation policies hinge on the infrastructure and natural resource sectors, with the strengthening of fiscal policy and national institutions, and climate-resilient development, considered important implementation strategies. Meanwhile, Tunisia's strategy places emphasis on sectoral policies, promoting the GDP shares of high-value-added sectors, technology development and industrial upgrading. It also focuses on service sector development, while exploring new opportunities in traditional sectors such as agriculture, tourism, crafts and trade.

3.3 Inclusive green economy policies and strategies

If they are to lead to growth that is socially inclusive, resource-efficient and environmentally sustainable, inclusive green economy policies and strategies should embody, economic, social and environmental objectives in a balanced manner. It is important to assess strategic and potentially wider environmental considerations in relation to economic and social concerns and opportunities within a holistic institutional framework. Therefore countries need to develop and implement holistic or system-wide inclusive green economy policies, strategies and institutional systems (OECD, 2012). Clear institutional mandates and support for government leaders and stakeholders are crucial for developing credible analyses and establishing policies to promote inclusive green growth (GGBP, 2014). Policies and strategies within an effective institutional setting could play a pivotal role in advancing inclusive green economy objectives by integrating the three dimensions of sustainable development in a balanced manner, addressing market failures, risks and uncertainties, and effectively analysing win-wins and trade-offs.

Status of development and implementation

African countries are at various stages of developing and implementing inclusive green economy policies and strategies (see table 11). Ethiopia, Kenya and Rwanda have developed, and Zambia is developing, explicit green economy strategies. For their part, Mozambique and South Africa have developed a green economy vision and a road map, respectively. A number of countries studied have yet to develop policies and strategies. Nevertheless, the experience of countries that have developed and are implementing inclusive green economy policies and strategies provides invaluable insights into policy options.

Policymakers have at least three options in pursuing inclusive green economy objectives. Firstly, they can build a stand-alone inclusive green economy plan. Secondly, they can integrate an inclusive green economy strategy into existing national policy frameworks. A case in point is Tunisia, which has formulated a development vision based on the inclusive green economy concept and is incorporating the inclusive green economy into its constitution. Thirdly, policymakers can adopt a strategy mix that combines the two options, as is the case in Ethiopia, Kenya, Mozambique, Rwanda and Zambia.

Mainstreaming is a good approach because it helps harness synergies and ensures coherence in the development and implementation of strate-

Table 10: Structural transformation plans of the case study countries

Country	Drivers	Vision/goal	Objectives	Priority sectors
Burkina Faso: SCADD, adopted 2011 (2011-2015)	Insufficient GDP growth, incomes and living conditions; unemployment and poverty	Burkina Faso 2025: "A nation of solidarity, progress and justice that consolidates its respect on the international stage" *(Etude nationale prospective, Burkina Faso 2025)*	Sustained and high-quality economic growth; MDGs; sustainable development	Agriculture; value added in secondary and tertiary sectors, etc.
Ethiopia: Growth and Transformation Plan, adopted 2010 (2010/11-2014/15)	Unemployment; poverty and inequality; limited access to basic services; environmental concerns	Achieve middle-income status by 2025 in a climate-resilient green economy	Double-digit growth; MDGs; stable macroeconomic conditions; State-building	Agriculture; industry; infrastructure; renewable energy; social development; capacity development and good governance; gender and youth empowerment and equity; natural resources, etc.
Gabon: PSGE, adopted 2009 (2009-2025)	Undiversified sources of growth; unemployment; need to harness natural assets	Emerging Gabon in 2025: "A united nation, a competitive economy, sustainable development, shared prosperity and a voice respected on the regional and world stages."	Economic diversification; environmental protection; inclusiveness; good governance	Industry, services, the environment and sustainable development
Mozambique: Poverty Reduction Action Plan, 2011 (2011-2014); National Development Strategy (2015-2035); Agenda 2025 (2013-2025)	Poverty; human and social development needs; undiversified economy; unemployment; need for effective foreign investment	Achieve inclusive middle-income status by 2030, within ecological limits	Living conditions; economic/structural transformation; productivity in agriculture and fisheries; employment	Development of human capital; infrastructure; institutions; industrialization; agriculture; economic diversification; jobs; foreign investment
Tunisia: Development Strategy of the New Tunisia (2012)	Need for further internal and external economic liberalization and competitiveness, social solidarity and sustainable development	Revival of dynamic growth, oriented more towards productivity and diversification of activities; an open international relationship and international integration; equity and inclusion; macroeconomic stability and resilience	Optimal development conditions; Passage to an advanced stage development based on social justice	High-value-added sectors; technology centres; industrial modernization; service sector development and increased liberalization; traditional sectors (agriculture, tourism, crafts and trade)

Sources: ECA, 2015a,b & c ; ECA, 2016 (a) and ECA, forthcoming (a) ; *Ministère du Développement Régional et de la Planification, Stratégie de Développement de la Tunisie Nouvelle, mai 2012* ; Ayari and Reiffers, 2015.

gies. However, the strategy mix may be a better approach as it ensures that green economy policy objectives are defined within a framework document embodying a country's development vision, and at the same time are clearly elaborated in a distinct document. Therefore, in addition to the main strategy document, sectoral green economy strategies can be developed to support the overall green economy objective in a coherent fashion. For instance, Ethiopia, in implementing the CRGE strategy – a stand-alone strategy guiding the country's green economy transition - realized that a national development strategy alone was insufficient, and moved further to incorporate the CRGE strategy into GTP II. Nevertheless, the stand-alone CRGE strategy was vital for galvanizing stakeholders, creating awareness and building capacity and consensus (Ethiopia, 2011).

Although Burkina Faso, Gabon and Tunisia have yet to develop inclusive green economy policies and strategies, policymakers understand the significance of the concept. This understanding is attributed to the measures the countries have taken over the years to integrate environmental concerns into economic development processes. The aim is to respond to increasing pressure on the environment and natural resources that sustain economic development and the livelihoods of a large proportion of Africans. This, and the need to foster human and social development, are adequately reflected in policy documents examined in the study reports of the countries under review. Therefore, these countries' development of inclusive green economy policies should, in addition to other processes, take into account existing policy documents on the three dimensions of sustainable development. The countries should make the adoption of integrated and synergistic approaches central to the implementation of existing policies on the economy, society and the environment.

Tunisia plans to develop a national green economy strategy based on its Constitution of 26 January 2014. The strategy will also draw on various sectoral programmes and strategies, cross-sectoral strategies and initiatives, such as the national report for Rio+20, the National Strategy for Sustainable Development, finalized in 2014, and international environmental conventions. Essentially the green economy strategy was based on the main conclusions of the National Strategy. The reason is that the green economy is recognized as a tool for implementing the Strategy and its strategic pillars, validated during national consultations on sustainable development. An analysis of the completed questionnaires of Cameroon, the Congo, Ghana, Mauritius and Senegal shows that these countries have yet to develop comprehensive national green economy policies and strategies. Nevertheless, most of these countries, their governments and their partners are actively working to integrate the green economy in their national development strategies[10] and deploying inclusive green economy initiatives.

Inclusive green economy goals, objectives and priority areas

With regard to visions, goals and objectives, Ethiopia's CRGE Strategy (2010/11-2014/15) aims to follow a green growth path that fosters development and sustainability. Rwanda's National Strategy for Climate Change and Low Carbon Development (2011-2050) aims to transform that country from a subsistence agricultural economy to a middle-income country by 2020. In 2015, Kenya developed a Green Economy Strategy and Implementation Plan (Kenya, 2015) to guide the transition to a green, low-carbon and climate-resilient economy, in line with the country's second medium-term plan and Kenya Vision 2030. Zambia is developing a green economy policy to be complemented by an inclusive green growth strategy. The aim is to incorporate the green economy into its national development plan. Mozambique's road map for a green economy aims to lead the country to inclusive middle-income status by 2030. The road map is based on the protection, restoration and rational use of natural capital and its ecosystem services to ensure sustainable, inclusive and efficient

[10] Ghana, Mauritius and Senegal are currently being supported through the Partnership for Action on Green Economy in integrating the inclusive green economy into their national development strategies.

development. South Africa's Green Economy Accord aims to achieve economic prosperity, green industrial development, poverty reduction and a greener country with reduced waste emissions and lower dependence on coal.

Ethiopia, Kenya and South Africa have, to varying degrees, specified targets in order to measure progress towards achieving set goals and objectives. Quantified targets in Ethiopia's CRGE strategy relate to reductions in emissions (60 per cent lower emissions than estimated for a business-as-usual (BAU) scenario and near-zero net emissions by 2030, with per capita emissions falling from 1.8 tons of carbon dioxide equivalent in 2010 to 1.1 tons in 2030 (-40 per cent)). The CRGE focus on emission targets is not unexpected, given that this is a low-carbon development strategy with positive spill-over effects on the economic, social and other sectors. South Africa's Green Economy Accord seeks to achieve green development with local production of at least 35 per cent by 2016, and to increase local content in the years to follow towards a target of 75 per cent. In the social sector, the road map aims to reduce poverty by intensifying the creation of employment and enhancing equality. Its target is to create 5 million new jobs by 2020, including 300,000 new jobs in the rural areas. The road map does not specify quantified targets related to environmental objectives.

Given that inclusive green economy policies and strategies should contribute to sustainable development objectives, they should focus on priority areas across the economic, social and environmental dimensions. Documents from all the study countries with explicit green economy policies, strategies or visions (Ethiopia, Kenya, Mozambique, Rwanda and South Africa) reflect priority areas across the three dimensions. Burkina Faso, Gabon and Tunisia do not have explicit inclusive green economy policy documents. However, their policy documents across the three dimensions target relevant priority areas to foster sustained economic growth, human and social development and rational management of environmental and natural resources.

Ethiopia's CRGE strategy is aligned with domestic priorities, with sector-specific strategies for agriculture, forestry, water, transport, manufacturing and energy (ECA, 2015a) similar to those spelt out in Kenya's Green Economy Strategy and Implementation Plan (Kenya, 2015). The scenario analysis carried out in the process of developing Kenya's green economy strategy indicates that the strategy envisaged a holistic approach encompassing all three dimensions from the outset. Real GDP was expected to exceed the BAU 2 per cent scenario by about 12 per cent by 2030, to reach US$ 45 billion. Real per capita income was to rise from US$ 498.7 in 2012 to US$ 871.3 in 2030 under the GE 2 per cent scenario, compared to US$ 664.3 in 2030 under the BAU 2 per cent scenario. In social terms, under the GE 2 per cent scenario, the size of the population living below the poverty line would be about 2 percentage points lower than under the BAU 2 per cent scenario on average between 2015 and 2030. Public health would improve, with better water and air quality. Action in the targeted sectors would help improve rural development and achieve higher energy efficiency for households. As for the environment, energy savings would reach 2 per cent of future BAU energy consumption in 2030. Geothermal power capacity would increase from 0.1 GW in 2011 to 1.34 GW by 2030 (twice as much as in the BAU scenario). Furthermore, other new renewables would reach a total of 20 per cent of power supply (Kenya, 2015).

3.4 Synergies among inclusive green economy and structural transformation strategic frameworks

A review of the visions, goals and objectives of the various inclusive green economy policies and strategies above shows that they bode well for structural transformation policies. Traditionally, structural transformation objectives are silent on environmental and sustainability objectives. Interestingly, however, in their visions and goals, Ethiopia, Gabon and Mozambique include poli-

Table 11: Inclusive green economy-related policies and strategies of the case study countries

Country	Drivers	Vision/goal	Objectives	Priority areas
Ethiopia: Climate-Resilient Green Economy Strategy (2011)	Climate change and environmental degradation	High income and sustainability in powering the country to graduate to middle-income status by 2025	Reduce carbon emissions; resilience to climate change; foster growth and economic development	Mitigation of climate change; climate resilience; agriculture and land use; forests; technologies in industry, transport and buildings
Burkina Faso : Politique Nationale de Développement (2013) and SCADD	Heavy dependence on natural resources (about 50 per cent of GDP related to natural resources, as of 2011)	By 2050, Burkina Faso to be an emerging economy pursuing sustainable development	Create an enabling environment for green investment; direct investment to green the economy; contribute to global governance for the green economy	Agriculture, livestock, fisheries and forestry; industries; environmental management and efficient use of natural resources; climate change adaptation and mitigation
Gabon: Green Pillar of the PSGE	Need to harness abundant natural resources	Balanced and sustainable development	Sustainable management of forestry and fishery resources; optimal benefits from timber; ensure food security	Forests, biodiversity, timber, agriculture, marine resources
Mozambique: Green Economy Road Map (2012) (2012-2030), Action Plan for a Green Economy (2013)	Need for rational exploitation and efficient use of natural resources to sustain economic growth	Mozambique to be an "inclusive middle-income country based on the protection, restoration and rational use of natural capital and of ecosystem services, ensuring inclusive and efficient development" (Action Plan for a Green Economy)	Accelerate sustainable development in the economic, social and environmental fields	Infrastructure; sustainable use of natural capital; livelihood resilience
Tunisia: Various national plans (1992 onwards)	Desertification; pollution; climate change; competitiveness	Decouple economic growth from resource consumption; ensure the integration of environmental and social dimensions; resilience to climate change; and good governance	Harness the important functions of forest and pastoral areas; greenhouse gas mitigation; and the elimination of dangerous products; efficient management of water resources; protection of biodiversity, etc.	Protection of soil and water resources; forests; biodiversity; ecological tourism; etc.

cies and plans that recognize environmental and broader sustainability issues.

From the analysis of the various structural transformation documents, it is clear that transformation remains pivotal for sustained growth, productive employment creation and poverty reduction. And the agricultural and natural resource sectors remain its key drivers. In the context of Africa, these same sectors are critical for driving inclusive green economies. However, an inclusive green economy approach underlines the need for balanced outcomes in all the three dimensions by incorporating sustainability principles in the development and implementation of strategies. Thus, inclusive green economy policies can alter not just the pace of structural transformation, but also the greenness and inclusiveness of that transformation.

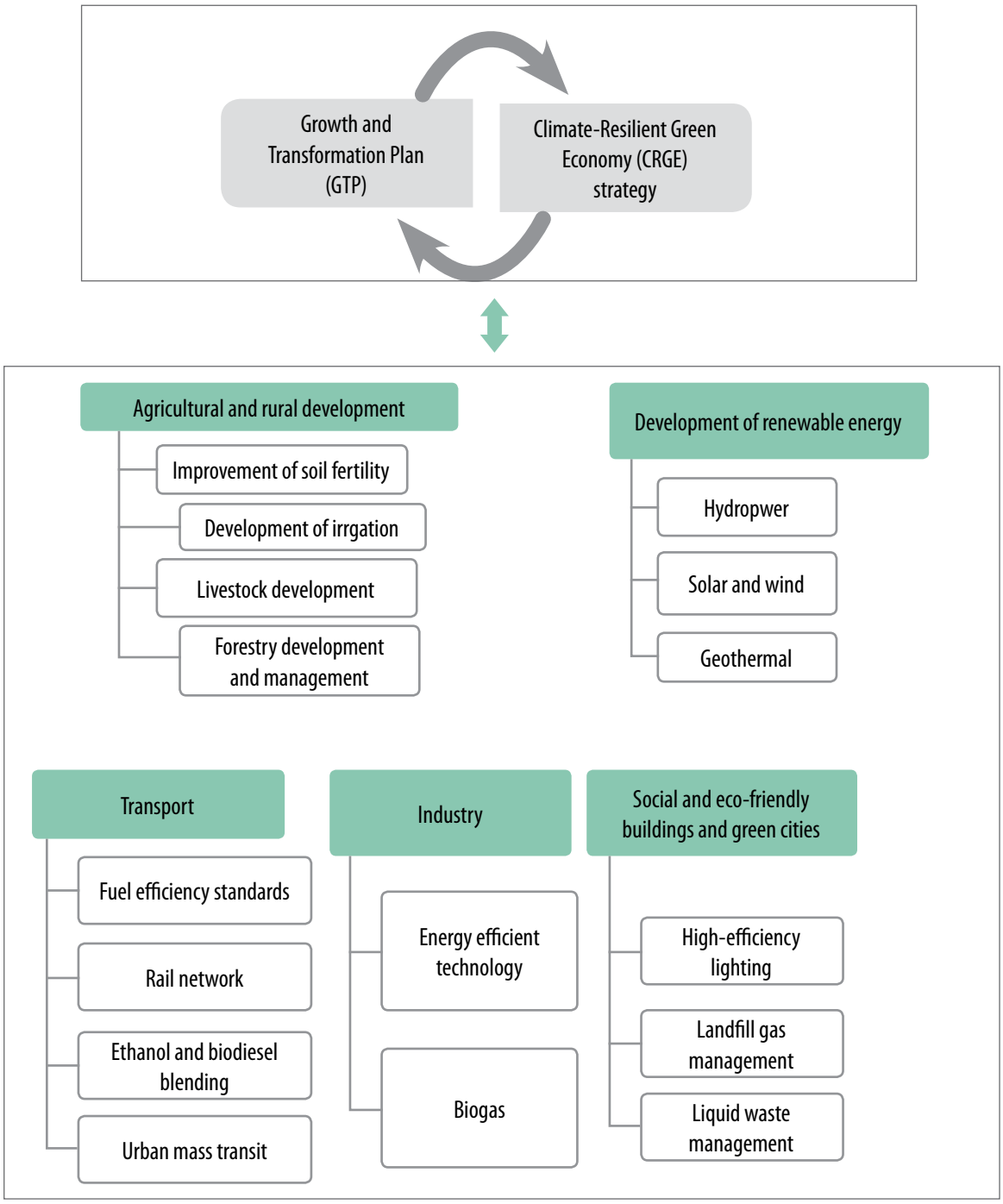
The success of structural transformation policies and plans in Africa largely depends on how well and inclusively natural resources are managed. It calls for holistic, integrated and synergistic solutions that promote sustainable economic, as well as environmental and social development. In terms of synergies between the inclusive green economy and structural transformation policies, most national inclusive green economy strategies have one key feature in common. They combine a long-term target reflecting the general vision with medium-term and short-term targets to guide concrete actions. Policy integration helps to maximize synergies between environmental, social and economic development outcomes; and managing costs, trade-offs and uncertainties.

Burkina Faso's current five-year strategy, SCADD, incorporates inclusive green economy objectives. It seeks to build synergies among the three dimensions of sustainable development, through: (a) a more efficient economy and higher GDP growth; (b) environmental sustainability which aims to preserve and enhance the environment and natural resources; and (c) social equity that aims to meet human needs, as well as equity and social cohesion objectives. In the primary sector, the objective of SCADD is to improve agricultural yields and productivity and increase agricultural value addition by 10.7 per cent. It is also expected to increase the growth of value added in the secondary and tertiary sectors by 11.8 per cent and 12.5 per cent respectively. The country's various social development and environmental protection policies and plans also support sustainable structural transformation outcomes.

Ethiopia used multiple criteria to prioritize and select a small suite of green economy priority options, including local relevance and feasibility, alignment with the GTP and low-cost abatement potential. In particular, sector-specific strategies related to agriculture, forestry, water, transport, manufacturing and energy were developed under the CRGE strategy to drive transformation towards a green economy (see figure 13). One example is the integration into the GTP of agricultural and rural development green initiatives, such as the improvement, development or management of soil fertility, irrigation, livestock and forestry. Similar programmes in the transport sector include the railway network and the blending of ethanol and biodiesel to reduce carbon emissions. Among the eight priority large and medium-sized manufacturing subsectors identified in the GTP, the cement industry has been the main target in the CRGE strategy owing to its high emission intensity. Green-economy-related interventions in the industrial sector include the development of biogas and fuel-efficient technology. Such policy integration helps maximize synergies among environmental, social and economic development outcomes and manage the costs, trade-offs and uncertainties, thereby supporting the country's structural transformation agenda.

Gabon is implementing its strategic plan (PSGE 2009-2025) with the objective of diversifying its economy, which still relies mainly on oil revenues. While it has no specific inclusive green economy strategy, the structural transformation plan has the notable distinction of integrating aspects of environmental protection, the right to inclusiveness and good governance practices. Its implementation portfolio contains specific inclusive

Figure 13: Ethiopia: Integration between the GTP and the CRGE strategy at the policy development stage



Source: ECA, 2015a.

green economy programmes and projects. Policies to promote structural transformation and an inclusive green economy in Gabon are based on the foundations of this strategy. Along with the Industrial Gabon and *Gabon des Services* pillars, the PSGE is also built on the Green Gabon pillar, to focus implementation towards achieving expected results by 2025.

Mozambique's National Development Strategy, 2015-2035 focuses on industrialization and seeks to advance structural transformation using an integrated development approach (Mozambique, 2015). According to the Strategy, structural transformation should focus on some development priority sectors, such as agriculture and fisheries and the manufacturing, extractive and tourism

industries. The Strategy predates the inclusive green economy strategy. The green economy road map adopted by Mozambique aims to propel the country to inclusive middle-income status by 2030. It is based on the protection, restoration and rational use of natural capital and its ecosystem services to guarantee sustainable, inclusive and efficient development. Spanning 20 years, the road map covers a much longer time frame than the five years of the structural transformation strategy. Subsequent structural transformation strategies should integrate an inclusive green economy vision and objectives that seek to accelerate sustainable economic, social and environmental development.

Tunisia's Development Strategy of 2012 aims to revive growth through diversification and the establishment of technology centres, modern industries and service sectors, and enhancement of productivity in traditional sectors such as agriculture, tourism, crafts and trade. Since 1992, development plans in Tunisia have consistently featured inclusive green economy imperatives. The Tunisian National Conference on Sustainable Development, held in October 2014, and the National Strategy for Sustainable Development reflect the country's strong commitment to an inclusive green economy. Transformation in the agriculture sector through crop diversification, along with soil and water conservation, will help enhance agricultural yields and revenues. This will have positive impacts on rural poverty and reduce rural emigration. The need to protect the Tunisian coast has led to a strategy to diversify the tourism sector, which is expected to boost the services sector's contribution to GDP. Energy efficiency and renewable energy also offer vast scope for the deployment of inclusive green economy policies. The Tunisian Solar Plan has had positive impacts on employment, estimated at between 7,000 and 20,000 jobs (Deutsche Gesellschaft für Internationale Zusammenarbeit, 2012). Additionally, the environmental upgrading of industrial enterprises is an essential component of inclusive green economy and structural transformation policies in Tunisia. Thus, the outcome of the Conference and implementation of the sustainable development strategy will go a long way in supporting the country's transformation objectives.

The baseline report of Rwanda's National Strategy on Climate Change and Low Carbon Development identifies integration as the next step for the policy's success. Initiatives to promote integration include designating adaptation investment plans by key themes (see box 2). This is to help shape priorities and efficiently advance funding applications across key sectors and ministries (University of Oxford, 2011).

3.5 Win-win attributes of inclusive green economy and structural transformation policies

A key tenet of the inclusive green economy is that it is win-win - that economic growth is possible within environmental limits while improving human well-being, alleviating poverty and reducing inequalities (Gasparatos and Stevens, 2015)(see table 12). Consistent with the vision of achieving sustainable transformation, the broad range of sector-specific green initiatives launched and integrated into national transformation plans also offer win-win opportunities. An integrated approach, which is an important objective of the inclusive green economy, provides countries with the policy choice to balance the economic benefits of development with environmental and welfare impacts of natural resource depletion, pollution and ecological degradation. This is true irrespective of the strategy approach adopted - specific inclusive green economy and structural transformation policy frameworks, or long-term frameworks that incorporate short-term objectives. For example, priority areas in the inclusive green economy strategies of Ethiopia, Kenya, Mozambique, Rwanda and South Africa generally take into account agriculture, industries, and environmental and climate resilience concerns (see table 11).

In Ethiopia, four initiatives have been selected to fast-track implementation of the CRGE strategy: in hydropower development, rural cooking tech-

Box 2: Rwanda's National Strategy on Climate Change and Low Carbon Development and its integration into the National Development Plan

In October 2011, Rwanda launched its National Strategy on Climate Change and Low Carbon Development under the title "Green Growth and Climate Resilience". The strategy provides a framework for integrating climate change and green growth approaches in national socioeconomic planning. The strategy sets three strategic objectives:

- To achieve energy security and a low-carbon energy supply that supports the development of the green industry and services and prevents deforestation
- To achieve sustainable land use and water resource management that results in food security, appropriate urban development and the preservation of biodiversity and ecosystem services
- To ensure social protection, improved health and disaster risk reduction that minimizes vulnerability to climate change impacts.

Under the strategy, the Government has developed 14 programmes of action, implemented through different institutions.

In 2013, Rwanda launched its Economic Development and Poverty Reduction Strategy II, which aims to assist the country in achieving the national Vision 2020 through economic transformation. This includes a target of 11.5 per cent average GDP growth per year. Pursuing a green economy approach is one of the five economic priorities of the Strategy. Indeed, many of the objectives and actions within the National Strategy on Climate Change and Low Carbon Development's 14 programmes of action have been incorporated into the Strategy, and sectoral policies are being updated to reflect its priorities.

The United Nations country team in Rwanda recently launched a joint green economy programme. The programme will further support the Government of Rwanda in its green economy mainstreaming and transition.

Source: Rwanda, 2011 and Nash and Ngabitsinze, 2014.

nologies, the livestock value chain and forestry development. The initiatives offer the prospect of immediate economic "wins" and "big wins" in carbon abatement. They address some of the key challenges and bottlenecks in the economy. The initiatives will improve production conditions, foster interlinkages within and between industries and further unleash Ethiopia's potential for sustained transformation. GDP per capita is expected to increase to more than US$ 1,800 by 2030, while per capita greenhouse gas emissions will fall to 1.1 tons of carbon dioxide equivalent (Ethiopia, 2013). A number of factors are essential to achieving this goal, and include improving industrial performance (for instance in food processing) through stable domestic input supply and the creation of new industries. Also essential are a dependable renewable energy supply and transport development, especially the electric railway. Equally important is the need to improve employment, and empower women and young people. Additional efforts are also being made to further integrate the CRGE initiatives into the second generation GTP (GTP-II), with clear green economy targets and indicators. GTP-II envisages the full integration of CRGE activities and their funding.

In the Kenyan context an inclusive green economy refers to a shift towards development that promotes the efficient harnessing of resources and their sustainable management, social inclusion, resilience, and sustainable development of infrastructure. Policies and programmes include investment in renewable energy, the promotion of resource-efficient and cleaner production and enhanced resilience to economic and climatic shocks. They also cover pollution control and waste management, environmental planning and governance and the restoration of forest ecosystems (Kenya, 2015). Kenya's Green Economy Strategy and Implementation Plan is expected

to improve access to affordable energy while accelerating industrialization, urbanization and real GDP growth. It will support development efforts towards addressing key challenges such as poverty, unemployment, inequality, environmental degradation, climate change and variability, infrastructure gaps and lack of food security.

Mozambique's inclusive green economy plan places emphasis on integrating the three dimensions, as evidenced in its vision and objectives. Specifically, the inclusive green economy is intended to ensure sustainable economic growth that is resilient to climate change. Ways of achieving this will include appropriate valuation of natural capital and ecosystem services. There will be a need to restore and protect ecosystem assets and services for the benefit of the present and future generations. The plan seeks to guarantee social equity in distributing the benefits of natural capital and its ecosystem services. It also promotes the harnessing of development opportunities that help reduce poverty and create decent green jobs, while restoring the environment and access to services and clean technologies (Mozambique, 2012). Increased job creation and sustainable production, particularly in the agriculture and infrastructure sectors, should help reduce poverty, which is one of the main expected outcomes of structural transformation.

Rwanda's strategy emphasizes "big wins" which, if achieved, will have a significant impact on adaptation to climate change, the mitigation of its effects and economic development. The "big wins" are likely to produce the greatest returns on investment: facilitating low-carbon development, increasing food and energy security, reducing vulnerability to oil price hikes and reducing payments abroad. The reason is that they have a far-reaching and long-term impact on the entire economy. Despite synergies among them, they have been split into two categories: low-carbon development and climate mitigation; and climate resilience and adaptation. The three largest sources of greenhouse gas emissions in Rwanda, agriculture, energy and transport, are addressed in the mitigation "big wins". Rwanda has also identified a number of immediate "quick wins" that can be implemented to begin addressing the "enabling pillars" of its strategy. The "quick wins" focus on incorporating climate resilience and low-carbon development into initiatives that are under way: institutional framework; finance; integrated planning and data management; capacity-building; knowledge management; technology; and infrastructure (Rwanda, 2011). This will create the necessary environment for the effective implementation of policies.

South Africa's Green Economy Accord is based on an economy-wide and multi-stakeholder approach. It largely targets new economic activities and seeks to provide an important entry point for broad-based Black economic empowerment, and to create competitive domestic markets in the green economy space. At the same time, the Accord addresses the needs of women and young entrepreneurs and offers opportunities for enterprises in the social economy. The aim is also to foster green industrial development, using existing and new tools and incentives. For instance, Commitment Two of the Accord includes: investment in the inclusive green economy; roll-out of renewable energy; energy efficiency; waste recycling, reuse and recovery; biofuels; clean coal initiatives; retrofitting; reducing carbon emissions on roads; the electrification of poor communities and reduction of fossil-fuel open-fire cooking and heating; economic development in the inclusive green economy; and the promotion of localization, youth employment, cooperatives and skills development (South Africa, 2011). The implementation of the Accord is expected to result in further industrial development in manufacturing or assembly, renewable energy plant and equipment, green industries and transport, and increased generation of employment.

Table 12: Win-win attributes of inclusive green economy and structural transformation policies and strategies

Country	Key inclusive green economy interventions/expected outcomes	Expected positive impacts of inclusive green economy interventions/outcomes on structural transformation objectives/outcomes
Burkina Faso	Sustainable management of land and water and land security; agricultural productivity Human capital; universal access to electricity	Investment and agricultural growth Better human capital Greater factor productivity and economic growth
Ethiopia	Adoption of agricultural and land use efficiency measures Electricity generation from renewable energy sources and scaling up of the renewable energy programme	Agricultural productivity, including livestock; industrial performance; renewable energy; transport (e.g. electric railway) Employment, and women and youth empowerment
Gabon	Sustainable forest management Agricultural potential and fisheries; new and renewable energy; sustainable tourism Raw materials for green industries	Pulses value chain Sectoral changes; growth of agriculture; green industries Stabilization of rural populations and migration
Kenya	Poverty reduction; improved human capital Energy efficiency for households Energy-saving and renewable energy	Access to affordable energy Real GDP growth Industrialization Urbanization
Mozambique	Sustainable infrastructure; natural capital Strengthening livelihoods resilience and the capacity for adaptation Regulatory policies, fiscal policies; national institutions	Increase in job creation and sustainable production, particularly in agriculture and infrastructure, contributing to poverty reduction - the main goals of the structural transformation strategy
Rwanda	Energy security and a low-carbon energy supply; sustainable resource use Green industries and services Poverty reduction; reduced vulnerability to climate change	Technological and industrial development Middle-income status
South Africa	Reduced dependence on coal Waste-recycling; reducing carbon emissions on the roads Social inclusiveness	Industrial development in manufacturing or assembly, renewable energy plant and equipment
Tunisia	Enhancement of plant cover; crop choices adapted to environmental constraints; irrigation technologies Buildings; specific programmes: industry, transport, tourism, consumer spending Improving urban and rural areas Social equity	Industrial diversification; auditing and monitoring services A boost to rehabilitation activities for existing building standards Integration into the world economy; competitive sectors with high added value; green industries

3.6 Trade-offs between inclusive green economy and structural transformation policies

Transitioning to an inclusive green economy not only entails co-benefits or win-win outcomes in terms of greater economic performance, effective environmental protection and social achievements, but also trade-offs in the short run. Efforts to "green" production are likely to increase short-term production costs, as new production technologies are introduced. The increase in production costs could have an impact on the overall competitiveness of locally produced products on the national, regional and international markets, at least in the short run. However, by supplying green goods and services, in the long run, countries would become competitive in the regional and global markets.

In most African countries, the effective integration of environmental protection and social inclusiveness in the implementation of development policies has remained a concern. The region's current comparative advantage lies in its favourable agro-ecological conditions. Given the yield gap and the scarcity of land, an increase in agricultural productivity requires more intensive as well as extensive use of available land. In this regard, Governments such as those of Burkina Faso, Ethiopia and Mozambique are increasingly promoting the use of chemical fertilizers. However, chemical fertilizers can be highly detrimental to water sources and generate high levels of greenhouse gases (Resnick, Tarp and Thurlow, 2012).

Studies (including Stern, 2006) indicate that chemical fertilizers can adversely affect the environment. Firstly, chemical fertilizers are the largest single source of greenhouse gas emissions from the agricultural sector. Nitrous oxide possesses a global warming potential that is 300 times greater than carbon dioxide. Secondly, fertilized land exerts great pressure on scarce water resources because it requires more water. Thirdly, high levels of chemical fertilizer use can increase toxins in groundwater, which is harmful for fish stocks and human health (Tilman and others, 2002). However, chemical fertilizers dramatically increase crop yields, and reducing food production is not an option. Therefore, the use of chemical fertilizers will remain central to the realization of agricultural development strategies, at least in the short run.[11] Furthermore, the expansion of agricultural areas, particularly into the remaining forest and woody land areas, could be a threat to the environment.

Moreover, the creation of large-scale agricultural development zones without proper environmental and social impact assessments could have undesirable environmental impacts. The modernization of agriculture and subsequent replacement of draught oxen with farm machines are other aspects of agricultural transformation strategies in African countries, as indicated in the GTP, PSGE and SCADD. Farm machinery consumes fossil fuels, generating emissions into the atmosphere. In Ethiopia, given the large number of smallholder farmers, the use of farm machinery would generate substantial quantities of emissions. Yet keeping a large number of oxen for draught power will also increase emissions. The relative benefits and costs of each of these interventions must be weighed.

To mitigate the negative impacts of agricultural intensification and expansion on the environment, Ethiopia is planning a shift to conservation farming, organic fertilizers and intercropping. It is developing less harmful fertilizers, clean technology and technology screening. It is also reducing land clearance by switching to plantation-based production and promoting smallholder agricultural intensification. Tunisia is embarking on sustainable agriculture to save water and energy and reduce carbon dioxide emissions. There are trade-offs between these and related possible negative

[11] Governments are exploring other options, such as greater use of organic fertilizers and conservation farming techniques that aim to conserve soil and water use by employing mulch and minimum tillage to minimize run-off and erosion. Another policy option, from a long-term perspective, is to promote research and the development of alternative and less harmful fertilizers.

effects in terms of falling crop production, rising production costs and fewer rural employment opportunities.

Burkina Faso's ambition to promote industrial development and higher economic growth may be accompanied by increased carbon dioxide emissions**,** pollution and increased pressure on water resources. For its part, Gabon is working towards industrial diversification. Certain major infrastructure projects in the country, such as the hydroelectric dam at the Empress Eugénie falls on the Ngounié river (with capacity of 36 MW), could adversely affect environmental quality, including fauna and flora, and trigger population displacement. These need to be weighed against limited investment in the manufacturing sector, limited employment, international competitiveness and exposure to external shocks.

The considerations and initial costs may be overwhelming, particularly for politicians who seek to make their mark within restricted electoral time frames in the hope of re-election. However, effectively leveraging the win-win outcomes highlighted in the previous section could compensate for short-term trade-offs that may have to be made (see table 13). Additionally, integrating inclusive green economy policies into long-term visions and development frameworks could help chart an implementation path that provides a holistic view of short-term, medium-term and long-term costs. This would also benefit and facilitate transparent, participatory and informed decision-making.

3.7 Integrated assessment methodologies and tools for inclusive green economy analysis

Over the years, African countries have used a wide variety of methodologies and tools to inform policy development and implementation across the policy cycle (Bernard, 2012; De Janvry and Sadoulet, 2010; De Janvry, Dustan and Sadoulet, 2011; ECA, 2005; ECA, 2015c; ECA 2016 (b); South Africa, 2004). Annex I to this report provides a snapshot of these applications. For effective support, the methodologies and tools should be applicable to the various phases of the integrated and inclusive policymaking cycle. In addition to their relevance for the different stages of this cycle, methodologies and tools are assessed against their capacity and aptness in supporting integrated assessments in specified contexts. This helps identify those most suitable for assessing economic, social and environmental aspects of inclusive green economy policies, as well as overarching issues, such as good governance and technological feasibility. The inclusive policymaking cycle is effective in supporting inclusive green economy policies only if it simultaneously addresses social, economic and environmental outcomes of policy implementation in an integrated manner. While no single tool can support decision makers throughout the entire policy cycle, some tools can support two or more steps of the cycle by virtue of their flexibility and features. The following criteria are important in determining the choice of methodology and tool for policymaking.

(a) Support for the different stages of the policymaking process;
(b) Target audience (multi-stakeholder involvement);
(c) Time horizon of the analysis;
(d) Complementarity with other methodologies and tools.

Prioritizing assessment tools in Africa

Given the definition of the inclusive green economy and its policy ramifications, integrated models would be the most adequate tools for the assessment of the inclusive green economy in Africa. In addition, these tools match the cross-sectoral scope of national visions and development plans. However, some of the integrated models are data-intensive and require cross-sectoral stakeholder involvement and interdisciplinary skills (which is both a strength and weakness, depending on the local context). Many are not easy to customize to the African country context and inclusive green economy policy assessment goals. It is thus

Table 13:Trade-offs between inclusive green economy interventions and outcomes and those of structural transformation strategies

Country	Key inclusive green economy interventions/expected outcomes	Expected negative impacts of the inclusive green economy interventions/outcomes on structural transformation objectives
Burkina Faso	Promotion of industrial development Higher economic growth	Increased carbon dioxide emissions Land degradation Chemical accidents Pressure on water Higher initial net cost of investment
Ethiopia	Shift to conservation farming, organic fertilizers, intercropping and the development of less harmful fertilizers Shift to clean technology; technology screening Reduce land clearing by shifting towards plantation-based production, or promote intensification of smallholder farming	Falling crop production and reduced job creation Rising production costs, limited investment in the manufacturing sector; limited employment; Fewer rural employment opportunities
Gabon	Industrial diversification Hydroelectric dam on the Ngounié river, with capacity of 36 MW	Impact on the environment, fauna and flora Population displacement
Mozambique	Intensifying agricultural production Use of agricultural chemicals; introduction of new crops and practices; diversification of crops Industrial development (agro-industry) Technological innovation	Increased carbon dioxide emissions Degradation of soil and nutrients Pressure on water
Tunisia	Sustainable agriculture, including Water and energy saving Industrial upgrading International competitiveness	Pressure on land and soil quality Higher carbon dioxide emissions Exposure to external shocks

useful to combine several tools by using nested models. However, these are even more data-intensive. There is therefore a need to ensure that the methodologies and assumptions used are coherent, and that the models complement each other. Common elements of the analysis include the need for a multi-stakeholder approach, and multidisciplinary knowledge.

Despite the challenges arising in the creation and use of integrated models, the advantages of using them to carry out an inclusive green economy assessment are considerable. First and foremost, they ensure that a sustainability appraisal of policy interventions can be carried out to assess the feasibility of long-term goals. Specifically, the simultaneous assessment of social, economic and environmental indicators allows for a comparison of the investment required (such as for renewable energy capacity) with the resulting job creation (including manufacturing and operation and management) and potential emission reductions. The increase in access to energy can be related to income generation and

indirect employment creation in non-energy sectors. This simple assessment of the direct and indirect outcomes of investment in renewable energy supports the evaluation of the outcomes of several development policy options at the country and regional level as well as the underlying interlinkages.

In other words, the use of integrated approaches improves the monitoring and evaluation of inclusive green economy interventions, helping reduce the likelihood of side effects. This is particularly relevant for Africa, where several development goals are considered simultaneously and where short-term planning (including budgetary planning) needs to be aligned with long-term development goals. Therefore, in the African context, the use of integrated models helps translate a conceptual vision into actionable interventions, including policy options, to inform short-term and medium-term development planning.

Sectoral models can also contribute to inclusive green economy assessments, provided that their results are analysed in the context of cross-sectoral outcomes. For instance, economic models (such as the computer general equilibrium model) and energy optimization models can be used to assess the outcomes of fossil fuel subsidy removal, either in isolation or in conjunction with other inclusive green economy/structural transformation goals. Nevertheless, it has to be acknowledged that the economic impacts of fossil fuel subsidy removal will have repercussions on energy prices and on energy consumption. Price impacts may then trigger investment in energy efficiency, as well as diversification of the energy mix. These, in turn, will affect greenhouse gas emissions. Sectoral models are also needed, especially in Africa, because they provide vertical details (as against integrated models, which provide horizontal integration). And once the strategic priorities are identified, taking into account cross-sectoral outcomes, policy documents can be developed in detail with the support of sectoral models. This pertains, for instance, to the choice of technologies (such as for energy) or the identification of targeted interventions across household groups (including for fossil fuel subsidy removal).

For sector or project-related analysis, it is important to consider short-term and long-term impacts, analysing both the impact of the project – for example using an environmental impact assessment – and the behavioural responses resulting from the completed project (for instance, using social and institutional assessments). Spatial impacts at the ecosystem level are of particular relevance for capital investment (such as infrastructure). The analysis of maps facilitates the effective integration of socioeconomic and environmental assessments, a crucial issue for the effective coordination of policy processes and other investment options in Africa in the context of the inclusive green economy.

3.8 Challenges and opportunities

3.8.1 Challenges

While an inclusive green economy development pathway enjoys support at the global, regional, subregional and national levels, several factors continue to pose a challenge to the development and implementation of related national policies and strategies.

Inadequate understanding of the inclusive green economy concept. Judging by country reports and responses to the questionnaire, inadequate understanding of the green economy concept is a key challenge in several countries, including Burkina Faso, Cameroon, Kenya, Mauritius and Morocco. Insufficient data, knowledge and information on the inclusive green economy create a weak climate, limited incentives, and even refusal (by some private-sector entities, for instance in Ghana) to engage in the implementation of the inclusive green economy.

Little knowledge and awareness of the national inclusive green economy strategy process at lower government levels. Although high-level government officials, policymakers and experts within the countries are aware of national inclusive green economy strategies, there is seemingly inadequate awareness of these strategies among middle-level and lower-level government officials and non-governmental stakeholders. This is another important challenge that needs to be tackled, given the critical role of middle-level and lower-level government cadres and grassroots-level stakeholders in the design, implementation, monitoring and evaluation, as well as the upscaling and outscaling, of inclusive green economy initiatives.

Inadequate political will, weak institutional and legal frameworks. While political support and will have been the key success factors in the implementation of the inclusive green economy in several countries, many others have yet to fully demonstrate leadership for it. This means that decision makers do not always give priority to the allocation of funds for the formulation and implementation of specific policies for an inclusive green economy. In its strategic plan, Gabon clearly expresses its commitment to the transition to a green economy, but has yet to demonstrate this in concrete terms. Furthermore, although strong institutions and adequate legal frameworks are very critical to successful implementation, these requirements have yet to be met in countries such as Cameroon and Gabon.

Coordination, harmonization and integration. Weak coordination, harmonization and integration create an environment where the fragmented nature of sectoral policies on the green economy leads to duplication of activities (as in Ghana and Senegal). Lack of coordination and integration among sectoral ministries and overlapping powers and responsibilities among institutions hamper effective implementation. Various activities are implemented at different levels for the same purpose owing to lack of clarity in roles and responsibilities (for example in Burkina Faso). In some cases (such as Mauritius), competing initiatives generate a plethora of buzzwords and new concepts that weaken the ability of institutions to find adequate entry points and harmonize actions. For instance, Ghana's initial approach to inclusive green growth was sectoral in nature, driven to a large extent by the ministry responsible for the environment.

Lack of adequate capacity. Lack of adequate national capacity adversely affects the ability of inclusive green economy policies to address near-term development and longer-term green economy transformation goals. The necessary institutions are in place and national inclusive green economy strategy units have been established, including in key sectoral institutions in some countries. Nevertheless, inadequate technical capacity and the frequent turnover of technical staff have remained a daunting challenge for the continuity of inclusive green economy policies and the subsequent development of inclusive green economy-related plans.

Technical, institutional and statistical capacity for the effective application of integrated assessment methodologies and tools for inclusive green economy analysis. Technical experts play a central role in assessing the inclusive green economy. This justifies strengthening the capacity to enhance their level of knowledge and expertise in developing, using and customizing assessment methodologies and tools. Institutional capacity development is also important in ensuring that the implementation process involving diverse stakeholders is well managed. Weak statistical capacity in Africa, lack of data and quality issues hamper the effective application of methodologies and tools that support the assessment of integrated inclusive green economy policies.

Inadequate funding and investment. The questionnaire survey cited insufficient funding for the implementation of green economy initiatives and unpredictable and slow disbursement of financial resources by development partners as key challenges in Kenya, Mauritius and South

Africa. Ambitious inclusive green economy and structural transformation plans require huge financial resources, while the saving-investment gap shows a large resource deficit in most African countries, hampering their ability to fund strategic investment.

3.8.2 Opportunities

In spite of the challenges faced by African countries in advancing inclusive green transformation, there are many opportunities that can be harnessed to develop and implement inclusive green economy policies that foster sustainable transformation in Africa.

Expressed political commitment. In their Consensus Statement to Rio+20, African countries pledged to redouble efforts to improve the national governance environment, ensuring the full accountability of institutions and transparent and inclusive planning and budgetary processes. To this end they are developing national strategies for sustainable development. They also called on the international community to step up efforts to support the strengthening of institutions and planning capabilities in Africa. Several African governments also expressed this political will and commitment.

High-level engagement and long-term vision. The development of inclusive green economy policies in most African countries was overseen and supported by high-level government officials. This has helped to bring together not only the different government offices, but also selected non-governmental stakeholders. In addition, driven by support from high-level political leaders, the inclusive green economy vision, goals and objectives have also been integrated into long-term national development visions, transformation plans and sectoral strategies in some countries. All this gives additional impetus for ownership. This linking of the inclusive green economy with long-term visions and structural transformation plans is an opportunity to push the agenda forward with a view to attaining sustainable structural transformation.

Existing institutional and policy frameworks. Many African countries already have in place institutional and policy frameworks for sustainable development that provide a supporting context for an inclusive green economy. These include planning, environmental and social development or management agencies, commissions or relevant institutions, alongside policies, laws and regulations that mandate and guide their operations. Strengthening the institutional arrangements that will facilitate the integration of the inclusive green economy in medium-term and long-term development plans, national sector strategies and policies makes budgeting and planning procedures easier.

Increased adoption of inclusive green economy policies, strategies and policies. Countries such as Ethiopia, Morocco and Mozambique have adopted inclusive green economy policies that complement their structural transformation agenda. The experience of these countries, if properly documented, provides opportunities for others to learn from it and provide the momentum needed to enhance the development and implementation of policies in Africa. The increased adoption and implementation of inclusive green economy policies in Africa has highlighted the importance of integrated assessment methodologies and tools for informed decision-making and actions across the policy cycle. This is spurring action by governments to enhance the adoption of integrated assessments for improved policy analysis. Existing cases and applications in various forms of assessment present opportunities for scaling up, sharing capacity and learning lessons to adapt the relevant integrated assessment tools to further entrench inclusive green economy policy for structural transformation.

Coordination among institutions. Most of the national green economy plans and strategies mark new forms of coordination across multiple ministries – including finance, planning, energy

and the environment (for instance in Ethiopia, Kenya, Mozambique and Rwanda). There is a need to build on this momentum by strengthening institutions for enhanced development and implementation of policies and strategies. This should take into account the need to strengthen the involvement of social-sector institutions and non-governmental stakeholders.

Commitment of development partners to support the inclusive green economy in Africa. Through various programmes, plans and strategies, bilateral and multilateral development partners are, with varying degrees of commitment, providing technical and financial support. This is encouraging multi-stakeholder participation, as well as promoting institutional linkages and balanced integration of the three dimensions of sustainable development.

3.9 Conclusions and recommendations

3.9.1 Conclusions

Well-articulated inclusive green economy policies integrated in long-term visions and other national development frameworks are fundamental to supporting sustainable structural transformation in Africa. Generally, high-level government commitment and leadership have driven the increasing development and implementation of inclusive green economy policies and strategies in African countries. This has been instrumental in garnering support and buy-in from the various stakeholders.

Overall, the strategies, which in most cases support structural transformation objectives, seek to improve resource efficiency; increase productivity and economic growth; and reduce greenhouse gas emissions, poverty and inequality. They provide integrated and synergistic solutions that promote sustainable economic, environmental and social development. This is key to the successful implementation of structural transformation policies and plans in Africa. Integrated approaches are central to promoting policy coherence, consistency and results that foster sustainable structural transformation in Africa. An integrated systems framework also promotes multisectoral approaches and policy coordination to maximize the linkages between inclusive green economy policies and structural transformation. Consistent with the vision of achieving sustainable transformation, the broad range of sector-specific green initiatives launched and integrated into national transformation plans also offer win-win opportunities. However, this also involves trade-offs, at least in the short run.

Although inclusive green economy policies and strategies can reinforce structural transformation, countries face significant challenges in developing and implementing them. The challenges include inadequate understanding of the inclusive green economy concept, inadequate knowledge, awareness and engagement in the development and implementation process, insufficient policy integration, limited implementation capacity and inadequate policy coordination. These limit countries' capability to build on the current momentum in the economy and on comparative advantages, and to leverage the full potential of inclusive green economy policies that support sustainable structural transformation.

Despite the challenges arising in advancing an inclusive green transformation in African countries, there are many opportunities that could be harnessed to enhance the role that the inclusive green economy plays in achieving a sustainable transformation in Africa. Among the opportunities are: political commitment and long-term vision, existing institutional and policy frameworks and the commitment of development partners to support the implementation of an inclusive green economy. In harnessing the opportunities, it is important to create an enabling environment to maximize the complementarities between an inclusive green economic system and structural transformation objectives. This involves policy shifts that offer new growth and development

perspectives and call for enhanced policy coordination and harmonization at all levels. Since policies are path-dependent, their effectiveness hinges on the quality of existing institutions and the depth of institutional capabilities. Thus, the strengthening of institutions should form an integral part of the implementation of the green economy, including the design and implementation of inclusive green economy policies and strategies.

Inclusive green economy assessments are already being conducted in African countries to maximize the benefits of green economy policies and strategies across economic, social and environmental sectors. However, it is vital to create additional capacity in the cross-sectoral and systemic analysis of green economy policy outcomes. In particular, while African decision makers generally acknowledge the importance of adopting a multi-stakeholder and interdisciplinary approach, the actual development and implementation of government policies still largely adhere to rigid sectoral frameworks and methodologies. There is a need for a systematic move towards more flexible, seamless and integrated inclusive green economy policy assessment. This requires capacity development interventions targeting relevant skills, the institutional environment and sustainable infrastructural support for data management.

Statistical capacity is crucial to the application of quantitative methodologies and tools. However, despite efforts over nearly half a century to improve statistical capacity in Africa, the capacity of most countries in the region remains weak, with policymakers making limited use of data. Although some African countries have improved their statistical capacity, many continue to face problems in providing relevant and reliable statistics. Findings indicate a need to enhance institutional, policy and technical capacity. This will improve statistical analysis and the application of relevant methodologies and tools for integrated assessment using sustainable mechanisms that also encourage local ownership.

3.9.2 Recommendations

In the light of the findings, the following recommendations are made to contribute to the development and implementation of inclusive green economy policies and strategies that are coherent with and reinforce structural transformation in Africa. The recommendations focus on: policy coherence and the regulatory environment; inclusive green economy incentive systems; and coordination, networking and information-sharing.

Policy coherence, regulatory environment and leadership

To effectively develop and implement inclusive green economy policies and strategies that support sustainable structural transformation, countries should incorporate them into a framework document that embraces their national development vision and draw up a distinct policy or strategy that galvanizes support for an inclusive green transformation.

In addition to the national inclusive green economy policy and strategy, there is a need for coherent sectoral inclusive green economy-related strategies targeting key sectors of the economy. This will contribute to the achievement of results in diverse areas that support structural transformation in Africa. To this end, a detailed inclusive green economy road map should be developed for each priority economic, environmental and social sector, taking into account static and dynamic comparative advantages on international and regional markets.

Targets and indicators of inclusive green economy policies and strategies should be aligned with those of structural transformation plans so as to boost links between them. This will also assist in identifying and assessing synergies and trade-offs, not only among the economic, environmental and social dimensions, but also across sectors and priority themes. Thus, inclusive green economy strategies should embody objectives and targets that cover relevant eco-

nomic, social and environmental variables. The strategies could then be factored into national medium-term plans. This would make it possible to identify and assess the synergies and trade-offs among the social, economic and environmental dimensions of the transformation.

Leaders, institutions and policies at all levels should fully contribute to all key areas of an inclusive green economy. They should ensure: leadership on the inclusive green economy and balanced integration of the three dimensions of sustainable development; production and maintenance of quality of environment and resources; and better redistribution of development outcomes for social inclusiveness and equity.

Inclusive green economy incentive schemes

There is a need to conduct a thorough assessment of the various inclusive green economy incentive schemes across sectors to establish whether they are compatible with the structural transformation objectives of the country. Inclusive green economy incentives should vary across sectors and be based on the agreed terms of reference (between the incentive provider and recipient), with clear and transparent associated targets and indicators. This is essential in ensuring that incentives regarding the inclusive green economy are effective, and that the public and private stakeholders are adequately informed.

For inclusive green economy objectives to support sustainable structural transformation, it is important to improve resource productivity, reduce the environmental impact of industrialization and enhance inclusiveness. Governments should therefore provide incentives such as subsidies for the adoption of clean or environmentally sound technologies, promoting green foreign direct investment and providing the labour force with the requisite skills for newly introduced technologies.

Coordination, networking and information sharing

There is a need to strengthen and expand platforms and networks for managing and sharing knowledge, including: good practices and lessons learnt in the inclusive green economy; and the formulation and implementation of structural transformation policy. The platforms and networks could include not only physical ones, but also online access to relevant information on inclusive green economy policies and structural transformation.

There is also a need to identify and support inclusive green economy champions. And their knowledge and experience should be shared with other stakeholders so as to attract and influence the latter and enhance green investment.

Inclusive green economy strategy development and implementation should involve all the relevant stakeholders, including social-sector ministries, and the formal and informal private sectors, which are currently marginalized. This is important in fostering understanding on the inclusive green economy paradigm and ensuring effective actions by all stakeholders at all levels.

To foster effective stakeholder involvement, countries should, in addition to their inclusive green economy policy or strategy documents, develop capacity-building and communication strategies to educate and sensitize the entire population on the inclusive green economy. In particular, it is crucial to build the capacity of young people to become active advocates and implementers of the inclusive green economy.

There is also a need for an appropriate institutional framework to strengthen coordination and collaboration on inclusive green economy matters. This should take into account the need to designate a green economy focal point or coordinating institution that provides an entry point for green economy interventions by all partners, domestic and external alike.

Capacity-building for integrated assessment methodologies and tools

It is necessary to enhance knowledge on the analysis of systems for integrated assessment methodologies and tools, and to provide the necessary training to professionals in various disciplines and across stakeholder groups. It is equally important to build the analytical capacity of policymakers and develop their technical skills. This will help improve not only understanding of short-term and long-term impacts of inclusive green economy policies, but also the contextualization of analytical outcomes in relation to the specific realities of African countries.

Capacity-building should focus on the creation of integrated tools, the combination of different tools and the simultaneous analysis of outcomes across social, economic and environmental dimensions. In particular, the combination of qualitative and quantitative methods is key to gaining relevant insights on the actual context and expected impacts of green economy strategies. Capacity-building should address comprehensive elements, including strengthening systems and tools for measuring an inclusive green economy, institutional capacity, resources and statistical and data infrastructure.

4. Experiences, good practices and lessons learned

Key messages

African countries have been implementing green economy initiatives in various sectors of the economy. These include sustainable agriculture, renewable energy, sustainable transport and natural resource management. While implementation commenced relatively recently, countries are acquiring invaluable experience that could enhance the development and implementation of inclusive green economy policies and strategies that foster structural transformation, and inform the region's transition.

Establishing lead institutions with clear mandates to coordinate the development and implementation of inclusive green economy policies and strategies enhances efficiency and effectiveness in implementation. Such institutions enhance collaboration, multidisciplinary approaches, coherence and integration. This fosters synergies with structural transformation polices and plans.

Inclusive green growth in agriculture would entail an increase in sustainable farming practices, including organic production. Training in and learning agricultural practices are key to improving agricultural productivity and the empowerment of farmers. However, the political and general policy environment are also important in allowing the private sector to take a meaningful role in organic agriculture. Participatory sustainable land management interventions give communities a greater voice in decision-making, which in turn promotes social and gender inclusiveness.

The growing market for renewable energy products and carbon credits holds potential for expanding trade in Africa. In addition to harnessing the continent's renewable energy resources, promoting the efficient use of energy reduces the need for fossil fuel in electricity generation, and mitigates associated adverse impacts. Countries have been investing in renewable energy generation while enhancing the efficient use of energy.

African governments and development partners are investing more in road and rail infrastructure. However, more is needed to address persisting challenges. Countries are adopting sustainable transport systems such as light rail and rapid bus systems as part of their green economy transition objectives. They are also successfully phasing out fossil fuel subsidies, and have introduced more stringent emission controls.

Achieving inclusive and sustainable structural transformation in Africa requires adequate financial resources. The financial sector is increasing flows into green economy investment that supports structural transformation. African financial institutions are introducing innovative financial tools, and several countries have established national funds, which have directed flows into green economy implementation.

Several factors influence successful implementation of the green economy, starting with policy development. These include high-level political support, flexibility in policy design that builds on existing institutional frameworks and an integrated approach that caters for the transition in the long term while effectively addressing immediate development needs or priorities. Effective monitoring and reporting on progress are other important factors. All this calls for the establishment of key targets that feed into broader development planning processes.

4.1 Introduction

From the preceding chapter, it has been seen that many African countries are developing and implementing green economy policies and strategies that largely support structural transformation objectives. While the strategies are still at the early stages of implementation, evidence shows that a green economy fashioned around a transformative agenda could solve critical development challenges in the region. These include expanding renewable energy capacity, investing in cleaner public transport or adopting greener agricultural practices, with positive impacts on job creation, the expansion of export opportunities and poverty reduction. The opportunities provided by the transition to a green economy have been the subject of a wide range of analyses. For example, a shift to a green economy in Kenya is expected to lift 1.2 million people out of poverty by 2030 (UNEP, 2014a). In Senegal, the transition to a green economy is expected to increase the real GDP growth rate to 4.3 per cent in 2035 in the green scenario, and 3.7 per cent in the business-as-usual scenario (UNEP, 2014b).

An inclusive green economy approach can promote better links between sectors, and equitable distribution of income, and help Africa deal with environmental crises. In general, natural resource management is a driver for growth, poverty eradication and job creation. Sectors that maintain and improve the natural environment can also be a source of growth. Since 1995, an estimated 486,000 work opportunities have been created in South Africa through environmental rehabilitation programmes.[12]

Green investment can reduce air pollution, improve agricultural yields and increase forest cover. Although most African countries are not major greenhouse gas emitters, a green economy also helps lower greenhouse gas emissions across the continent without imposing unnecessary costs on the implementing countries. For example, Ethiopia is expecting carbon-neutral growth under its Climate-Resilient Green Economy strategy (ECA, 2015a). Green energy investment can also meet Africa's increasing demand for electricity: Africa is expected to dramatically increase the size of its electricity grid. Between 2012 and 2030 Africa will require 250 GW of capacity, two and half times current levels (IRENA, 2013). This offers a unique opportunity to invest in cleaner energy and avoid locking in the carbon-intensive, polluting energy infrastructure reminiscent of other economies. Such a transition will enable Africa to be less reliant on international fuel markets and reap the benefits of the decline in the costs of renewable energy.

African countries have been implementing green economy initiatives in sectors such as sustainable agriculture, renewable energy, sustainable transport and natural resource management, which foster structural transformation. While implementation commenced relatively recently, countries have begun acquiring invaluable experience. This may help improve the basis for the development and implementation of inclusive green economy policies and strategies, and for the region's transition. The experience ranges from establishing coordination and collaboration mechanisms and stakeholder participation to multidisciplinary approaches. Other experience concerns the integration of the three dimensions of sustainable development, the implementation of initiatives in various sectors of the economy and the mobilization of financial resources for the inclusive green economy. This chapter presents some of the implementation experience, showcases good practice resulting from the implementation process, and discusses success factors and lessons learned.

4.2 Promoting coordination and multidisciplinary approaches

In implementing green economy policies and strategies, countries have established coordination mechanisms that are crucial to enhancing

[12] Placing economic value on Africa's natural resources. UNEP press release, 4 December 2013.

collaboration, multidisciplinary approaches, coherence and integration, thus fostering efficient implementation. Designating a lead entity and establishing multi-stakeholder committees has allowed for effective communication and cooperation. This has played a vital role in coordinating the efforts of government ministries, agencies and other stakeholders, as well as decentralized structures. The mandates of most of the coordinating entities ranged from fostering holistic and integrated approaches to incorporating the inclusive green economy into national development plans, and implementing sectoral inclusive green economy initiatives.

In Ethiopia, the Prime Minister's Office plays a lead role in the implementation of the CRGE strategy. The Office is supported by nine ministries, namely the Ministry of Environment and Forestry, the Ministry of Finance and Economic Development, the Ministry of Agriculture, the Ministry of Water, the Ministry of Irrigation and Energy, the Ministry of Trade and Industry, the Ministry of Transport, the Ministry of Science and Technology and the Ministry of Urban Development and Construction, as well as the Ethiopian Development Research Institute and organizations in the country's regions.

Similarly, in Mozambique, the Ministry for the Coordination of Environmental Affairs plays a lead role in the implementation of the green economy. The Ministry, together with the National Council for Sustainable Development and the Environment Fund, coordinates the implementation of policies, plans and programmes for sustainable development in the country. The Council, chaired by the Prime Minister, plays a key role in public consultations (Mozambique, 2012). The Ministry and the Council ensure adequate consultations with all the relevant stakeholders. This facilitates the coordination of green-economy-related policies, plans and programmes.

Rwanda's Ministry of Natural Resources coordinated the drafting of the development strategy. Directing the coordination was a steering committee of 10 cabinet ministers (disaster management, agriculture and animal resources, trade and industry, finance and economic planning, education, infrastructure, natural resources, local government and health). A permanent institutional set-up which includes the Technical Coordinating Committee, the National Fund for Climate and Environment and the Centre for Climate Knowledge for Development coordinates implementation of the Strategy. The Committee has adopted an integrated sector plan that balances cross-cutting issues, resource management and the continuity of the transition process.

In Kenya, the Ministry of Devolution and Planning is considered the lead agency in the country's Green Economy Strategy and Implementation Plan, with ministries in sectors such as water, industry and agriculture playing important roles (UNEP, 2015). Sectoral working groups have been set up to ensure coordination and collaboration in the implementation of initiatives in specific sectors. There is strong involvement of local-level institutions, particularly in the 47 county governments.

South Africa's Green Economy Accord is an outcome of a social dialogue on the New Growth Path, which was considered an important step towards a greener and more prosperous South Africa. The Accord has high political buy-in and is viewed as an important rallying point in the partnership between the South African Government, the business community, the trade union movement and community organizations. An interdepartmental Green Growth Committee, which has adopted a collaborative policy design and implementation approach, leads the process. Government ministries involved include those for energy; water and environmental affairs; economic development; agriculture, forestry and fisheries; transport; higher education and training; trade and industry; public enterprises; public works; and rural development and land reform.

In Mauritius, the Ministry of the Environment and Sustainable Development coordinates the *Maurice Ile Durable* Policy and Strategy Action Plan,

which provides a framework for the implementation of the green economy. A *Maurice Ile Durable* Commission was established in the Prime Minister's Office to collaborate with the Ministry of the Environment and Sustainable Development in the coordination process. Also in the Prime Minister's Office, a *Maurice Ile Durable* Strategic Committee was established with members from key ministries, parastatals, the private sector and civil society.[13]

It has been shown through analysis that national coordinating entities for the inclusive green economy do not usually involve institutions handling social affairs. In some cases social issues were not adequately reflected in priority areas. In Kenya and South Africa, the social affairs ministries were not members of the green economy institutional entities. Additionally, in Kenya, social issues were not considered as distinct priority areas, but more closely related to issues of mainstreaming. In Ethiopia, poverty, inequality and other social issues have largely remained peripheral. This confirms the observation about the marginalization of the social dimension in green economy analysis and policy. Also overlooked are the impacts of green economy strategies on different social groups whose values, priorities and interests are shaping the concept and policies of the green economy, and on and patterns of inequality. Other matters overlooked at the local, national and global levels include alternative visions and processes for achieving social, environmental and economic objectives in a holistic way (UNRISD, 2012). It is therefore necessary to further emphasize the social dimension of an inclusive green economy to ensure effective integration of the three dimensions of sustainable development.

Nevertheless, the coordination arrangements put in place have helped foster multidisciplinary approaches in the development and implementation of green economy policies. This has helped not only to achieve multi-stakeholder participation and enhance the integration of the three dimensions of sustainable development, but also to integrate inclusive green economy approaches into the national development agenda. The deployment of multidisciplinary expertise and approaches has supported the development and implementation of inclusive green economy policies and strategies. In cases that require specialized skills that are not locally available external experts provide support, with the transfer of skills being a vital aspect. In Ethiopia and Rwanda, policy development and implementation teams consist of local experts from various government ministries, agencies, departments or institutes, academia, the private sector and civil society, supported by international experts as necessary.

4.3 Good practice and lessons in the implementation of green economy approaches in selected sectors

Good practice has been emerging across the African continent, providing useful lessons for designing and implementing inclusive green economy initiatives. This section showcases examples in the fields of agriculture and land management, energy, transport and green entrepreneurship, as well as in financing the inclusive green economy.

4.3.1 Agriculture and land management

In agriculture, a dominant sector in most African economies, green investment could result in positive yields and revenues. Since the sector accounts for 32 per cent of Africa's GDP and supports about 65 per cent of the labour force (AGRA, 2013), targeted green investment in the sector could yield the highest social impact and long-term positive results for the economy. For example, increased green investment has resulted in higher agricultural production in Senegal. Meanwhile, similar investment has led to a rise in export opportunities in higher-value-added activities, such as organic produce in Uganda, further driving growth (UNEP,

[13] http://mid.govmu.org/portal/sites/mid/MIDRole.htm.

2010). Modelling analysis also suggests that an increase in green investment will bring about a rise in average crop yield, as demonstrated in the example of Kenya in figure 14.

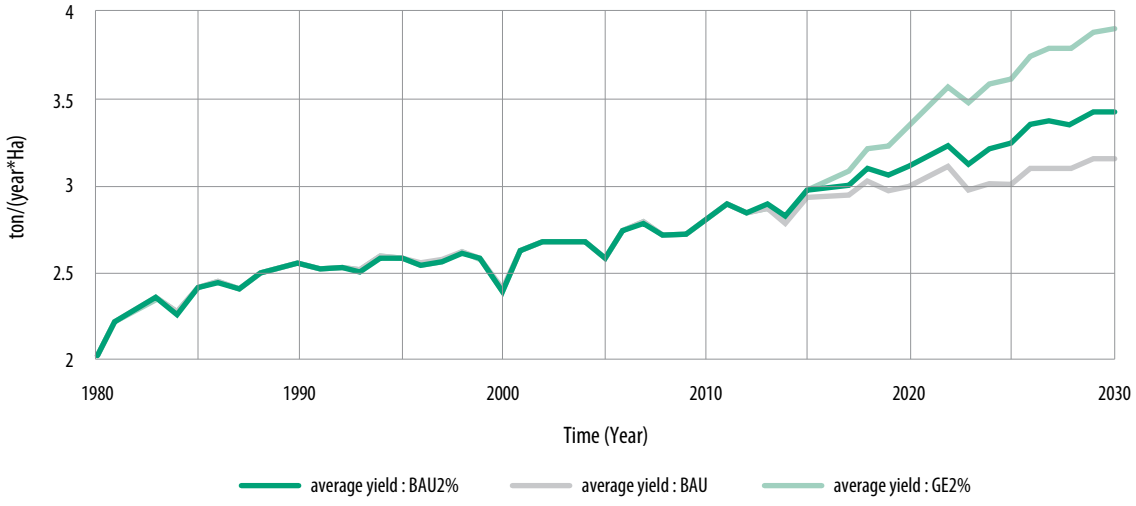
In terms of structural transformation, there is a need to increase value addition in the agricultural sector in Africa. In many sectors, African countries export raw food materials and are less involved in manufacturing and higher-value activities. For instance, African producers account for 11 per cent of total green coffee production by volume, but only 8 per cent of roasted coffee and 2 per cent of instant coffee production (ACET, 2014). Africa produces around 70 per cent of total raw cocoa volume, but has a small share of grinding processes and a negligible share of chocolate manufacturing (ACET, 2014). Structural transformation in Africa would increase value addition in these sectors.

However, huge problems remain in African agriculture, particularly in terms of soil erosion. Africa suffers from considerable land degradation, with severe consequences for agricultural production, nutrition and human health. Since 1950, some 500,000 square kilometres of land have been affected by soil degradation. Over 60 per cent of the population in Burkina Faso, Ethiopia, Lesotho and Mali live on degraded land (UNEP, 2013). This has impacts on long-term agricultural growth. A green economy approach would help increase investment in technologies that reduce land degradation, stepping up agricultural productivity and improving long-term growth.

Inclusive green growth in agriculture would entail an increase in sustainable farming practices, including organic production. In Eastern Africa, the land under organic production has been expanding. Between 2000 and 2012, land under organic production grew more than 20-fold, as shown in figure 15. Uganda has the biggest proportion of land under organic cultivation (Willer and Lernoud, 2014), with 16 per cent of Africa's total (see case study in box 3). Ethiopia and the United Republic of Tanzania also have significant areas of land under organic agriculture, with 13 per cent and 12 per cent respectively.

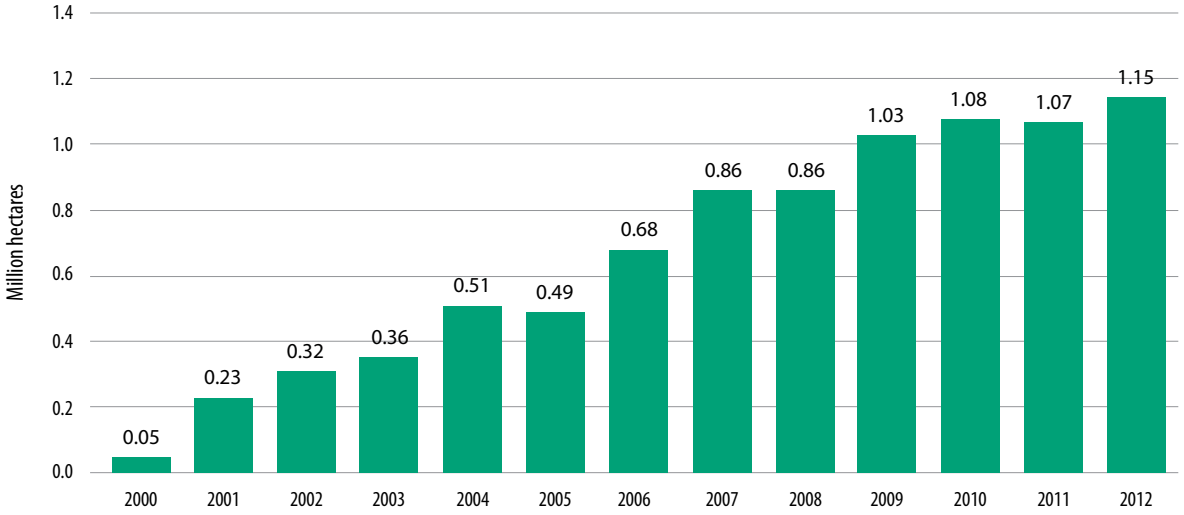
Furthermore, sustainable land management, such as in Ethiopia (box 4), demonstrates how an inclusive green economy approach in agriculture and land management could support sustainable social and economic development in African countries.

Figure 14: Kenya: Average agricultural yield, 1980-2030



Source: UNEP, 2014a.

Figure 15: Development of organic agriculture, 2000-2012



Source: Willer and Lernoud, 2014.

Box 3: Organic agriculture in Uganda

In 2005/06, 85 per cent of the population of Uganda was engaged in agriculture, which produced 42 per cent of GDP and 80 per cent of export earnings. Uganda has taken important steps in transforming conventional agricultural production into an organic farming system, with significant benefits for its economy, society and the environment. Uganda is among the world's lowest users of artificial fertilizers: of the already very low average of nine kilograms per hectare in sub-Saharan Africa, Uganda accounts for less than 2 per cent (or one kilogram per hectare). The widespread avoidance of fertilizer use has been harnessed as a real opportunity to pursue organic forms of agricultural production, a policy direction widely embraced in Uganda.

By 2003, Uganda had Africa's largest land area under organic agriculture and the13th largest in the world. By 2004, the country had around 185,000 hectares of land under organic farming. This represented over 2 per cent of agricultural land, with 45,000 certified farmers. By 2007, 296,203 hectares of land were under organic agriculture, with 206,803 certified farmers. This was an increase of 359 per cent in the number of farmers and 60 per cent in the acreage between 2002 and 2007.

As a significant producer of organic products, Uganda reaps the benefits of this important source of export earnings and revenue for farmers. Certified organic exports increased from US$ 3.7 million in 2003/04 to US$ 6.2 million in 2004/05, before jumping to US$ 22.8 million in 2007/08. In terms of price premiums and income for farmers, studies commissioned by UNEP and UNCTAD indicate that in 2006, the farm gate prices of organic pineapple, ginger and vanilla were 300 per cent, 185 per cent and 150 per cent higher than those of conventional products respectively. Through organic farming, Uganda not only gains economically, but also contributes to mitigating climate change, as greenhouse gas emissions per hectare are estimated to be on average 64 per cent lower than emissions from conventional farms.

Lessons learned

(a) Training in and learning agricultural practices are key to improving agricultural productivity and empowering farmers;
(b) The political and the general policy environment is important in allowing the private sector to assume a meaningful role in organic agriculture.

Source: UNEP, 2010 and unpublished ECA case study of 2014.

Box 4: Sustainable land management in Ethiopia

The Ethiopian sustainable land management project is being implemented as part of the country's Climate-Resilient and Green Economy strategy. The CRGE strategy was initiated to reverse the serious level of land degradation by promoting and scaling up successful sustainable land management (SLM) technologies and approaches. The project embodies a comprehensive approach to sustainable land and integrated watershed management. It tackles interlinked problems of poverty, vulnerability and land degradation at the rural community level by overcoming key barriers in terms of knowledge, technology and policy, as well as legal, institutional, economic and financial issues. The project has a capacity-building component, which includes developing an SLM knowledge base and creating the necessary enabling policy and legal, institutional and financial environment in identified priority areas. The project's other component involves harnessing social infrastructure for natural resource management. The aim is to support community participation and the use of labour-intensive vegetative, structural and agronomic land management practices.

The economic benefits of the project are attributed to fertility improvement, soil moisture retention, water availability and increased biomass in the agricultural landscape. These outcomes have led to greater agricultural productivity and higher income for participating farmers who adopted SLM technologies. Generally, the economic returns of farmers who used SLM technologies were double those earned by farmers who did not use the technology.

Sustainable land management practices have enhanced social protection and gender equity in the watersheds where they have been implemented. In Ethiopia, households headed by males usually own more livestock than those headed by females, and in the free and uncontrolled grazing systems, households headed by females do not benefit as much from grazing lands. In SLM intervention watersheds, households receive the same benefit regardless of whether they are headed by females or males. The benefit is in the form of conservation tillage, cut-and-carry systems, access to credit for water harvesting structures and other SLM activities. Furthermore, households headed by females can either sell their forage and crops for cash, or exchange them for traction power for ploughing and threshing.

The interventions also resulted in positive environmental impacts. These included: the development of springs; increased vegetation cover; soil fertility and rehabilitation; stream flow during the dry season; water infiltration and ground water recharge; and reduced run-off, soil loss, downstream flood hazards and sedimentation. Additionally, the intervention minimized the spread of invasive species. A case in point is the clearance of Hygrophila auriculata (amikela), an invasive thorny weed species, from 268 grazing areas in Fogera district during forage development. Additionally, the interventions promoted the growth of palatable forage and legume species, as well as indigenous bee forage perennial plants, thus increasing honey bee colonies.

The system also builds schools as an incentive and frees children from huge workloads, including the fetching of fuel wood and water. The project provides opportunities for farmers to grow new crops and gives them free time to pursue other income-generating activities, such as cattle and poultry rearing, sheep fattening, beekeeping and raising fruit seedlings for sale. The increased groundwater recharge and downstream flow are good production assets for irrigation during drought years. Expanding farmers' knowledge of SLM technologies and soil and water conservation measures, as well as growing new crops and controlling invasive species, would increase the ability of the farming communities to adapt to the impacts of climate change. Encouraged by the achievements to date, SLM will continue to serve as a vehicle for building community climate resilience and to enhance the ecosystem and its service, including carbon sequestration and storage.

Lessons learned

Extensive community mobilization helped scale up local technologies that have been in use for generations;

The construction of schools, health centres and roads served as incentives for community participation, fostering forest development and natural resource conservation and management;

(a) Land regulation and provision for land certification ensured long-term land use rights, which encouraged the sustainable management of land resources;

(b) Documenting and popularizing traditional SLM practices and technologies and their impacts fostered sustainable development and food security. This was made possible through access to funding designated for the emerging ecotourism market and climate sectors. A case in point is the Konso Cultural Landscape, which is registered as a UNESCO World Heritage Site;
(c) Integrating national and regional field visits as part of SLM project activities was instrumental in promoting technology transfer in the local context, because it enabled farmers to easily adopt technology through experience-sharing and impact observation;
(d) The SLM interventions played a vital role in promoting community empowerment. The participatory approach in the planning, design and implementation phases gave women and young people a greater voice in decision-making, which in turn promoted social and gender inclusiveness in the drive to achieve inclusive green growth.

Source: ECA, 2015d.

4.3.2 Energy

The growing demand for energy across Africa offers a unique opportunity to lock in cleaner energy capacity. The continent is expected to increase electricity capacity by 250 GW (150 per cent) by 2030. A shift to green energy would present an economic opportunity through increased energy supply and improved energy efficiency. Increasing investment in geothermal, solar and wind power, hydroelectricity and biofuels has environmental, economic and social benefits. This would lead to lower energy costs and greater connectivity, and ultimately to better costs of doing business, as well as better services in health and education.

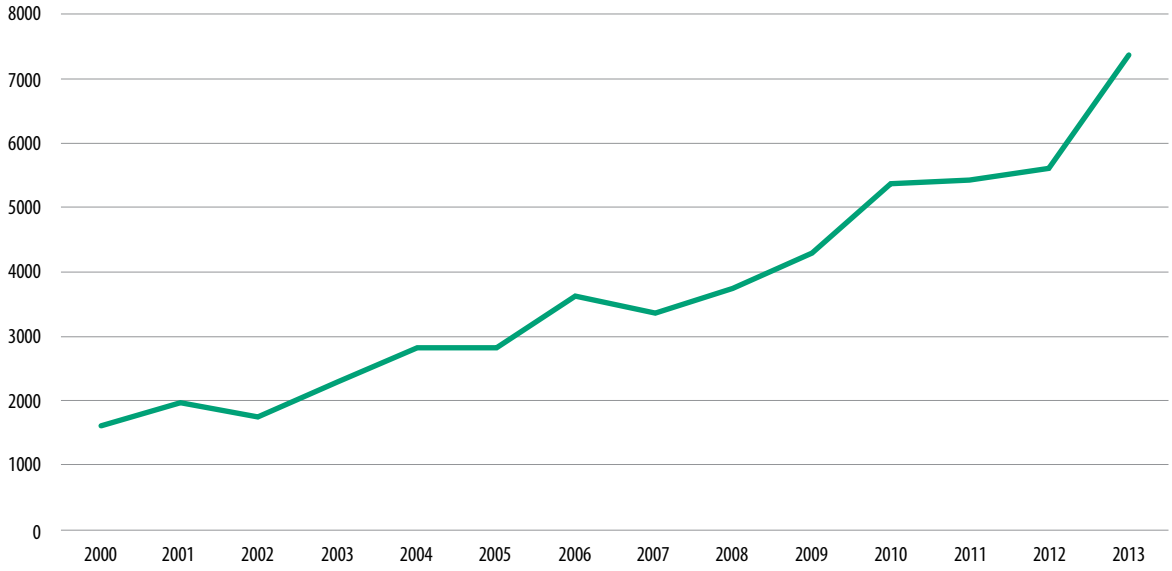
A transition to cleaner energy could help increase energy independence, with lower marginal costs. Many African countries are net importers of fossil fuels. However, the region's wind, hydro and solar potential is enough to power the continent's population many times over, given that 93 per cent of Africa's natural and renewable energy resources remain untapped (IRENA, 2013). Evidently renewable energy has the potential to reduce Africa's dependence on foreign energy sources.

The last 12 years have seen a steady rise in Africa's production of renewable energy. As demonstrated in figure 16, Africa's electricity production has risen steadily in the last decade. While the increase in hydropower and geothermal facilities has been steady, that of non-hydropower facilities has been rapid. In addition, recent years have seen the launch of major renewable projects across the continent, including the 301 MW Tarfaya Wind Farm in Morocco, the 110 MW Olkaria III Geothermal Power Station in Kenya and the 96 MW Jasper solar plant in South Africa. Figure 16 illustrates this surge in renewable energy across the continent.

However, the noted rise in renewables correlates with an increase in the use of conventional fossil fuel. As shown in figure 17, the generation of electricity using oil, coal and particularly gas has been increasing since 2000. As a percentage of overall electricity generation, renewables have remained at a relatively consistent level, around 25 per cent. A transition to the green economy would lead to a steady fall in the percentage share of fossil fuels.

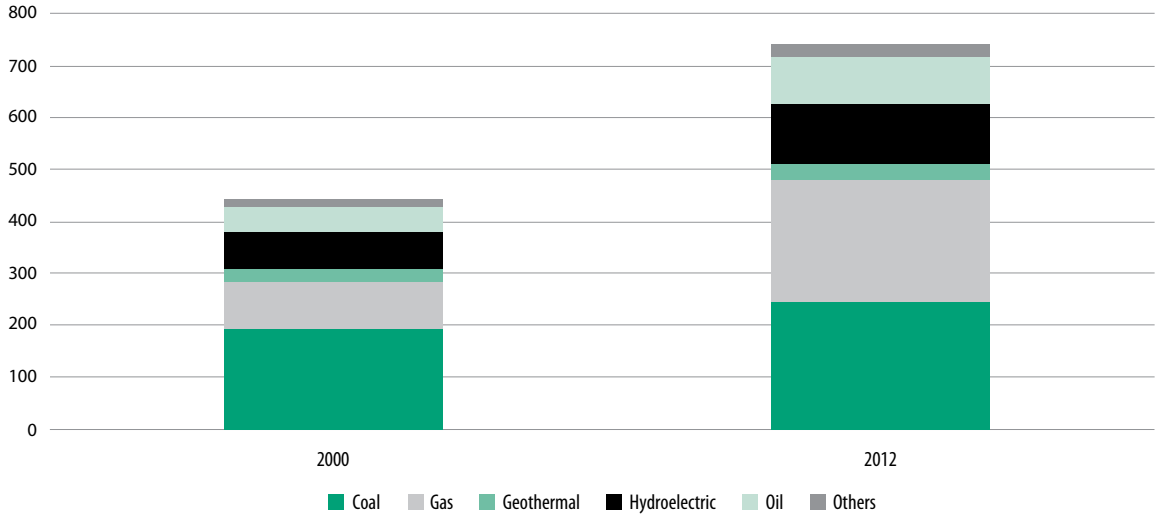
A range of policy support from domestic and international sources has spurred investment in renewable energy. Several countries have adopted feed-in tariffs. These include those that have made significant investments in renewable energy: Ghana, Kenya and South Africa. Additionally, most major infrastructure projects have used development finance to support their programmes (for example, in Lake Turkana in Kenya), from multilateral institutions such as AfDB and the International Finance Cooperation, as well as bilateral mechanisms such as the Norwegian Investment Fund for Developing Countries and the German bank KfW. In addition, Africa has the potential to increase its energy efficiency, starting with more

Figure 16 : Electricity production from renewable sources, excluding hydroelectric (Gwh) 2000-2013



Source: International Energy Agency, www.iea.org/stats/index.asp.

Figure 17: Composition of Africa's energy mix, 2000-2012 (millions of tons of oil equivalent)



Source: World Bank, 2014.

efficient lighting and use of industrial energy. In many sectors, from cement to aluminium, African companies lag behind the global standard in terms of energy efficiency. Increasing investment in energy efficiency technologies would also support structural transformation. Finally, action at the household level, such as switching to more efficient lighting systems (see case study in box 7), can contribute to a green economy transition and to structural transformation.

The growing market for renewable energy products and carbon credits holds potential for regional trade expansion. Exports of solar energy to the European Union, or of hydropower and other renewable energy within Africa, are a case in point. Moroccan renewable energy projects, which include the Moroccan Solar Plan and Morocco's Wind Energy and Hydropower Development Project, illustrate how clean energy development can reduce energy costs and turn a country's economy

around (box 5). In addition to harnessing the continent's renewable energy resources (see also box 6 on solar water heaters in Mauritius), the efficient use of energy (for example in Ghana, see box 7) also reduces the need for heavy fuel generation and cuts associated adverse impacts. Thus countries are investing in renewable energy generation while improving the efficient use of energy.

4.3.3 Transport

Supported by their development partners, African governments are investing more in road and rail infrastructure. However, there is a need to step up efforts to address persisting challenges. Only then can current impressive economic growth translate into real social and economic development on the continent. Congestion, a common problem in many African cities, has negative implications for the economy. A World Bank study put the estimated cost of congestion in Cairo at US$ 8 billion per year, or 4 per cent of GDP. In Lagos, traffic continues to worsen, with car ownership increasing tenfold in the past 10 years. Finding more sustainable solutions to increased car use and congestion is an important aspect of the transition to a green economy.

The main challenges are road fatalities, poor transport governance, connectivity and increasing greenhouse gas emissions from cars. The urban and rural poor are the most affected. Only one in three rural Africans have access to an all-season road - about half of what obtains elsewhere in the developing world (AfDB Group, World Bank and Infrastructure Consortium for Africa, 2011). Moreover, even where good roads exist, the haulage industry is split into cartels. This leads to high profit margins that prevent the transfer of cost savings from road improvements to consumers (AfDB Group, World Bank and Infrastructure Consortium for Africa, 2011), denying benefits to low-income groups.

Box 5: Tapping the trade potential in the renewable energy subsector in Morocco

Morocco, the only North African country with no natural oil resources, is the largest energy importer in the region, with about 96 per cent of its energy needs being sourced externally. The country imports most of its electricity from Spain (15 per cent) and Algeria. With electricity demand projected to quadruple by 2030, the country has turned to implementing various strategies to promote renewable energy. In 2008, Morocco launched the National Renewable Energy and Energy Efficiency Plan, whose aim is to develop alternative energy to meet 15 per cent of domestic energy needs and increase the use of energy-saving methods.

In 2009, Morocco introduced the Solar Plan, one of the world's largest solar energy projects. The project aims to produce energy sustainably, using concentrated solar technologies and photovoltaic systems with a total installed output of 2,000 MW by 2020. The solar project is expected to reduce dependence on energy imports and cut energy costs by an estimated US$ 750 million per year for wind and US$ 500 million per year for solar.

In addition, the project is expected to establish an industrial infrastructure for solar technologies so that, over time, Moroccan companies will also be involved in constructing and exporting solar power technologies. As such, the project includes training and industry-orientated applied research. The project will support efforts to preserve the environment by limiting emissions of greenhouse gases and to combat climate change. The Solar Plan is expected to reduce greenhouse gas emissions by 9.1 million tons per year.

Morocco's target is to obtain 42 per cent of its installed electrical capacity from renewable sources by 2020, including 2 GW of solar energy from five large plants, 2 GW of wind energy and 2 GW of hydropower. The government has committed US$ 9 billion, and the sector is heavily financed by investment loans from multilateral institutions such as the World Bank, the European Union and AfDB. Apart from the expected shift in the country's energy mix, creating business for distribution and cutting energy costs, the investment in the renewable sector is expected to create between 13,000 and 35,000 new jobs, depending on the technology deployed.

Source: ECA, 2014 and 2015e.

Box 6: Solar water heater loan scheme in Mauritius

In 2008 Mauritius launched a programme under which grants of 10,000 Mauritian rupees were offered to families wishing to buy a solar water heater. Funded under the Maurice Ile Durable Fund, the project benefited some 24,000 families. The same grants were available under the second phase of the scheme, launched following the release of the 2012 budget.

Beneficiaries are saving 11,000 rupees per year, equivalent to nearly a month's average salary. They have been able to use the savings for other household expenditure, to improve their standard of living and boost the local economy. To ensure that the scheme runs efficiently, registration of solar water heater suppliers is compulsory, taking into account their credibility, experience, technical capacity and the after-sales service they provide.

Establishing eligibility criteria for the registration of suppliers as well as monitoring and evaluation of the project have facilitated the successful implementation of the policy.

Source: Capacity Development for the Clean Development Mechanism, 2009 and Clean Energy Solutions Center and Meister Consultants Group, 2015.

Box 7: Replacement of incandescent bulbs with compact fluorescent lamps in Ghana

Ghana is the first African country to ban the import of incandescent bulbs as a load reduction measure to achieve energy efficiency and promote inclusive green growth. The replacement of incandescent bulbs with compact fluorescent lamps and the ban on the import of incandescent bulbs were part of the Government's measures to solve the acute energy crisis over the period August 2006 to September 2007. The Government imported and distributed some 6 million compact fluorescent lamps to residential consumers free of charge in exchange for installed incandescent lamps in 2007. The objective was to reduce household expenditure on electricity, eliminate brownouts and transformer overloads and cut the domestic peak load by 200-220 megawatts. In its first three years of implementation the project, spearheaded by the Energy Commission, cut the use of incandescent lamps from 58 per cent of the total in 2007 to 3 per cent in 2009, while the penetration of compact fluorescent lamps increased from 20 per cent in 2007 to 79 per cent in 2009.

The policy's economic benefits include a cut in the amount of electricity consumed in residences from 0.29 TWh to 0.19 TWh. Likewise the policy led to a decline in industrial electricity consumption from 0.72 TWh to 0.52 TWh, and from 0.29 TWh to 0.21 TWh for outdoor lighting. According to a UNEP report, the total energy saved as a result of the shift to energy-efficient lighting in residential, commercial, industrial and outdoor sectors is about 375.0 GWh in annual electricity consumption, which is comparable to the power output of three small (20 MW) power plants. This is equivalent to 5.8 per cent of the total national electricity consumption and 29 per cent of electricity used for lighting, which translates to about to 32.3 kilotons of crude oil. The report also estimates that the annual operating cost for all lamps, including installation, maintenance, replacement and electricity costs, has dropped from US$ 185 million to US$ 141.1 million. This means that about US$ 44.8 million is saved annually, which represents a payback period of four months.

Ghanaian consumers have generally accepted the compact fluorescent technology. It offers better illumination of indoor and outdoor surroundings, while the drop in energy bills has freed funds for other activities. By cutting the peak load, the project has helped reduce power outages. Meanwhile, the free exchange of incandescent bulbs for compact fluorescent lamps gave Ghanaians confidence in the Government's resolve to solve the power crises, which strengthened social relations between government and people.

Countrywide emissions of 0.061 million tons of carbon dioxide from residences were reduced to 0.0401 million tons after the implementation of the policy. Industrial emissions fell from 0.179 million tons to 0.122 million tons, while emissions in outdoor areas dropped from 0.063 million tons to 0.046 million tons. In general, the project is expected to generate carbon dioxide savings of about 112,320 tons per annum. According to an assessment by UNEP, recycling incandescent and linear fluorescent lamps has led to a drop in the amount of mercury released from 2.06 kilograms to 1.36 kilograms. This suggests that reducing the use of incandescent lamps has prevented 0.7 kilograms of mercury emissions. Generally, the annual reduction in carbon dioxide emissions is around 90.9 kilotons, which is equivalent to removing 22.7 thousand medium-sized cars from Ghana's roads.

Lessons learned

(a) A vital lesson learned from the project is the importance of the science-policy interface. Policy decisions supported by research lend credibility to implementation. Research demonstrated that peak load could be reduced, making it easy to convince the Government to undertake the project;
(a) Project implementation also demonstrated the benefits of stakeholder consultation for buy-in and meaningful participation.

Source: ECA, 2015f.

Efforts to address the transport challenge are evident at continental and country levels. In 2010 leaders established the Programme for Infrastructure Development in Africa, an initiative of AfDB, NEPAD and the African Union, in an ambitious effort to boost African infrastructure, including railways and roads.

Countries such as Kenya and Uganda are emulating Ethiopia's national railway and bus projects (box 8). In December 2015, the Government of Uganda signed a memorandum of understanding with the Chinese Government for the construction of an initial 35-kilometre light-rail system for greater Kampala. Worth US$ 440 million, the project aims to decongest traffic in the country's capital and surrounding areas (NTV (Uganda), 2015). A new high-speed train between Tangier and Casablanca, and rapid bus systems in Nigeria and South Africa, have been commissioned. However, many more of these systems will be needed to meet Africa's growing urbanization.

African countries are successfully phasing out fossil fuel subsidies, and have introduced more stringent greenhouse gas emission controls. Historically, African governments have subsidized several fossil fuel inputs, including diesel, kerosene and petrol. However, in recent years, governments have made significant strides to reduce this burden, thus freeing resources and securing positive environmental impacts. The case study on fossil-fuel subsidy reform in the Niger (box 9) provides further detail on one country's ability to reduce subsidies.

4.3.4 Green entrepreneurship

The transition to a green economy offers a range of new opportunities for green entrepreneurship that promote sustainable and inclusive economic development. Conversely, enterprises play a vital role in building an inclusive green economy. They are partly responsible for the environmental effects of products – from the extraction of raw material to the production, use and disposal of products and by-products. Additionally, enterprises provide employment opportunities for young people, women and rural populations, while contributing to economic growth. Examples (see box 10) of stellar green entrepreneurs are emerging in Africa, making huge contributions to the economic and social transformation of their communities and countries in a sustainable manner.

4.3.5 Ecosystem goods and services

The inclusive green economy emphasizes approaches to ecosystem management that ensure a sustainable flow of ecosystem goods and services, while maintaining healthy and fully functional ecosystems (UNEP, 2011). This is crucial for Africa, which, while endowed with a very rich and diverse natural resource base, is one of the most vulnerable continents, with high poverty levels and worrying trends of degradation of natural resources (ECA, 2013). Reversing this trend is vital if countries are to leverage the benefits derived from the natural environment.

Box 8: National railway and bus projects in Ethiopia

The transport sector is one of the largest sources of greenhouse gas emissions in Ethiopia. Transport emissions are expected to grow from 5 metric tons of carbon dioxide equivalent in 2010 to 40 metric tons in 2030, driven by emissions from freight transport (growing by over 13 per cent per year) and passenger transport (over 9 per cent per year). The Government of Ethiopia initiated the national railway and rapid bus projects as part of its CRGE strategy to pursue the economic growth targets of the GTP, with a zero increase in greenhouse gas emissions. The objective is to shift freight transport from the roads to an electric rail network in order to eliminate emissions from the largest source of greenhouse gases in the transport sector and promote economic efficiency.

Key aspects of the projects are the: construction of an electric rail network powered by renewable energy, to offer an alternative to freight transport by road on the major import-export corridor; enhancement of urban transport in Addis Ababa by introducing urban electric rail transport and ensuring fast and efficient bus transport; introduction of stricter fuel efficiency standards for passenger and cargo transport; and promotion of hybrid and electric vehicles to counter the low efficiency of the existing vehicle fleet. The national railway network comprises seven routes; the construction of the route that connects Ethiopia (Addis Ababa) with Djibouti is near commissioning. The route is the country's major import-export corridor. The objective of the US$ 15.6 billion National Railway Project is to connect the country's economic corridors with each other and with neighbouring countries. The total railway network covers 4,787.6 kilometres, out of which 2,395 kilometres will be constructed in the first phase. As for rapid bus transport, an urban development study conducted in 2005 recommended the construction of a light-rail system along a north-south corridor and a bus system along an east-west corridor in Addis Ababa.

The Ministry of Transport has adopted a plan to invest in public transport. In Addis Ababa, in addition to ongoing renovation of the city bus operator's fleet, the city government aims to create a multimodal network that is centred around two light-rail corridors, seven bus lines that will feed and complement the light-rail lines, and three main high-frequency bus lines that will operate without fully segregated infrastructure. These 12 lines will serve as a backbone for the city's transport system. The construction of a 34-kilometre light-rail system for the north-south and east-west corridors has been completed, and the system is operational. A railway academy has been established and has started the training of staff to ensure that the country has skilled human resources for effective management and operation of the railway industry.

The aim of the national railway, light rail and bus projects is to counter the adverse social, economic and environmental impacts of the transport, energy and industry sectors and boost the country's trade and investment opportunities. The projects will also support efforts to mitigate greenhouse gas emissions. Anticipated impacts include the abundant use of renewable energy sources, such as hydroelectric power, ethanol, biofuel, solar and wind. This will help reduce foreign currency expenditure on imported fossil fuels as well as greenhouse gas emissions, which could enhance access to climate finance. When fully operational, the projects will provide employment for more than 300,000 citizens, particularly women and young people. The light-rail and bus lines are intended to cater to 72 per cent of public transport activity in the capital and provide transport to about 60,000 people per hour. The shift in the transport system from road to rail and the conversion of all public transport vehicles to electric traction will help lower traffic congestion, cut pollution and reduce accidents. The replacement of diesel-powered public transport by electric rail and electric-operated vehicles is also expected to lower transport costs and improve the efficiency and affordability of public transport services, thus facilitating sustainable access to public transport.

Source: ECA, 2015d.

Ecosystems generate benefits that help tackle current challenges by supporting adaptation to climate change and poverty alleviation. When wisely used, they play a crucial role in helping develop a model for a sustainable economy and thus contribute to Africa's structural transformation. Investing in ecosystems brings local and global benefits by supporting local communities in meeting their needs (such as food, drinking water and income) and helping mitigate global climate impacts, depending on the practices applied (ECA, 2015a). In pursuing structural transformation, the inclusive green economy approach provides a framework for policymakers, the private sector

Box 9: Fossil fuel subsidy reform in the Niger

In the early 2000s the Niger introduced a price stability mechanism for petroleum products. As international prices rose in 2005, the Government introduced an explicit subsidy component within this mechanism to even out domestic prices. In mid-2008 and 2010, when international import prices increased rapidly, the subsidy component rose further.

The subsidy eventually reached unsustainable levels, and had highly regressive impacts on distribution. In response the authorities decided to gradually phase out subsidies. Fuel prices were increased by 12 per cent in mid-2011. This led to a significant drop in the subsidy, with the total allocated to fuel subsidies in 2011 falling below the 2010 level, at around 1.1 per cent of GDP.

The Government went out of its way to reflect the costs of the petroleum subsidy in the budget as a way of raising public awareness on the matter. To gain support from civil society, it launched public information campaigns describing the regressive nature of the subsidies and demonstrating that the savings from petroleum price increases would fund social spending. The authorities established a committee to identify appropriate ways of designing and implementing the reforms.

The fuel price reform was accompanied by measures to protect the poorest segments of society from increases in transport costs. The transport sector, which bore the brunt of the increases and mainly served poor communities, received a direct subsidy.

Source: IMF, 2 013.

Box 10: Waste recycling in Kenya: EcoPost

One woman's success story shows how green entrepreneurship could be an answer to youth unemployment and environmental degradation in Africa. Since Lorna Rutto started EcoPost at the age of 24, she has created more than 500 jobs, saved over 250 hectares of forest and eliminated over 1 million kilograms of waste from the environment. She has won a number of awards, including a prize in the green category of an ILO-sponsored business plan competition.

Lorna Rutto is the co-founder and director of EcoPost, a Kenyan-based social and green enterprise that recycles waste plastic into aesthetic, durable and environmentally friendly fencing posts. The enterprise aims to address some of Kenya's main challenges in waste management, deforestation and unemployment. Kenya generates over 10,000 tons of garbage every day but the lack of an organized system of waste management has resulted in crude dumping of the waste, leading to heaps of garbage littering streets and open fields. In addition, the country faces massive and rapid deforestation. This is particularly alarming since forests cover less than 2 per cent of Kenya's land mass. When it comes to unemployment, some 500,000 of Kenya's youth (8 per cent being graduates) enter the job market every year with limited employment prospects.

The efforts of EcoPost have registered remarkable ecological and social impacts. So far, EcoPost has withdrawn over 1 million kilograms of plastic and saved an estimated 100 hectares of forest. Plastic recycling also saves 2.5 kilograms of carbon dioxide per kilogram of plastic, preventing 2,500 tons of carbon dioxide emissions and further mitigating climate change. In addition, the enterprise recruits its factory employees from nearby slums, providing them with permanent full-time jobs. Thanks to this opportunity, many of them have managed to move to better locations and make a living wage. EcoPost receives its used plastic mainly from waste collectors around Nairobi, most of whom used to be homeless with few prospects. Counting the waste collectors, EcoPost employs over 300 people who would otherwise be living in poverty.

Source: SEED, 2014.

and others to ensure that the full range of goods and services provided by ecosystems are fully integrated into development planning, enterprise and social programmes.

Champions are already emerging who are promoting the role of ecosystem goods and services in Africa's inclusive and sustainable economic growth. Examples exist of initiatives that conserve ecosystems while securing economic and social benefits to, among other things, growth and poverty eradication. Among the examples are South Africa's Working for Wetlands programme (box 11) and community management of forests (the Gambia) and protected areas (Namibia) (box 12).

4.3.6 Financing as an important enabler of an inclusive green economy that supports structural transformation

To secure inclusive and sustainable structural transformation in African, it is necessary to provide and generate financial resources that will ensure an inclusive green economy approach to development. There is a need to finance the inclusive green economy as an integral part of sustainable development financing. This will enable such an economy to help achieve sustainable development while balancing and integrating economic,

Box 11: The Working for Wetlands programme in South Africa

Wetlands provide valuable ecosystem goods and services, such as: habitat for flora and fauna; species of food and medicinal plants; and water flow regulation and purification. In South Africa, however, wetlands are the most threatened of all ecosystems, with 48 per cent of wetland ecosystem types critically endangered, and many already irreversibly lost. To reverse this trend, the departments of environmental affairs, agriculture, forestry and fisheries and water affairs initiated the Working for Wetlands programme. A partnership for the rehabilitation, protection and sustainable use of wetlands, the programme is also a vehicle for the alleviation of poverty. Partnership involves government, landowners, communities, civil society and the private sector.

The Working for Wetlands programme is based on key interlinked concepts that ensure the effective and sustainable rehabilitation of wetlands. The concepts include wetland protection, wise use and rehabilitation; skills and capacity development; cooperative governance and partnerships; research and knowledge-sharing; and communication, education and public awareness. The programme is designed to create employment opportunities and the capacity to earn income while rehabilitating and protecting wetlands. It provides vocational and life skills, including in health and agriculture. Through field visits with decision makers, the distribution of resource material and other initiatives, the programme influences its diverse stakeholders. In the past 12 years, the programme has invested 530 million rand (approximately US$ 60 million) in the rehabilitation of 906 wetlands, improving or securing the health of more than 70,000 hectares of wetland area.

The programme is part of the Expanded Public Works Programme and seeks to maximize employment creation. It creates and supports small businesses and transfers relevant and marketable skills to beneficiaries. To date it has created some 12,850 employment opportunities, with 2.2 million person days worked. In addition, the programme has provided 168,400 days of training in vocational and life skills. Among the beneficiaries at least 60 per cent are women, 20 per cent young people and 1 per cent people with disabilities. By involving various stakeholders, the programme facilitates research as well as the sharing of and active demand for technologies and research findings. Among other things, the rehabilitation of wetlands helps improve livelihoods, protect agricultural resources, enhance biodiversity, clean water, reduce the impacts of flooding and increase water security – thereby supporting adaptation to climate change. The programme has been running for over 12 years, and remains sustainable through stakeholder involvement and the concepts mentioned above.

The Working for Wetlands programme demonstrates that IGE-related approaches generate benefits from vital ecosystems. It conserves wetlands as part of the effort to alleviate poverty. Its design structure of and its intended outcomes provide an important framework for addressing environmental concerns as well as social and economic challenges facing communities.

Source: ECA, 2015g.

Box 12:Community forestry and joint forest park management in the Gambia and community management of protected areas in Namibia

In the Gambia the State remains the principal owner of forests and maintains tenure over 90 per cent of the total forest area. The remainder is covered by community forestry (6 per cent) and joint forest park management initiatives (4 per cent). The percentages shift as local communities understand the importance of securing the rights over their forests through community forestry.

So far, approximately 30,000 hectares of natural forest have been transferred to 450 rural communities nationwide. Meanwhile, the Forestry Department's Participatory Forest Management approach has prompted many village development initiatives.

According to a sample studied in 2005, 26 villages participated in such initiatives through 72 community-based enterprises. Thanks to the enterprises, 484 interest group members drew benefits in the form of fuel wood, logs/timber, honey, netto (Parkia biglobosa), palm oil, tree nurseries, kembo (Prosopis africana) posts, handicrafts, Rhun palm splits, ecotourism and forest walks.

In Namibia, in 1996, the Government granted local communities the right to create and manage their own protected areas. With the support of non-governmental organizations, the concept of communal conservancies blossomed – with 59 conservancies being legalized, covering a total of over 130,000 square kilometres, or 16 per cent of the country's area. Through 29 joint ventures with tourism operators, the Government has created 1,000 full-time jobs in the region and has been instrumental in reducing poverty.

Source: ECA, 2013.

social and environmental objectives. Therefore, it is crucial to direct finances to priority economic and social development initiatives, particularly those that employ inclusive green economy approaches, such as sustainable infrastructure and renewable energy.

The financial sector is increasing flows into green economy investment in Africa that support structural transformation. There is a rise in public and private-sector investment to finance renewable energy, recycling, sustainable transport and sustainable agriculture. African countries have benefited from international private and public finance, and from increased domestic financial flows. For instance, AfDB has released US$ 993 million in green bonds for projects worth US$1.6 billion (AfDB, 2014). African financial institutions are introducing innovative financial tools. The UNEP Inquiry into the Design of a Sustainable Financial System[14] examined green innovations in the global financial sector. It found a number of exciting initiatives across the continent. South African banks and financial institutions have signed a Code for Responsible Investing in South Africa. In Kenya, the Central Bank has allowed non-bank institutions to enter the financial market, thereby providing the foundation for new green finance products. The Kenya Bankers Association has also adopted guiding principles for sustainable finance.

Several countries have established national funds which have directed flows into the green economy. Examples of good practice in the region include South Africa's Green Fund (box 13), Ethiopia's CRGE facility (box 14), Rwanda's Environment and Climate Change Fund (box 15) and Uganda's public-private partnership which financed the construction of the Bujagali hydropower plant (box 16). Financial mechanisms must be designed first and foremost to mobilize internal resources that can unlock external resources, including through the transformative potential of people, the private sector and external partners. The Addis Ababa Action Agenda adopted at the Third International Conference on Financing for Development places emphasis on this approach. The Agenda goes beyond the Monterrey Consensus, highlighting the financing requirements for the

[14] unepenquiry.org.

fulfilment of the 2030 Agenda for Sustainable Development. It recognizes that finance is not merely about funding flows, but also depends on public policies that strengthen the national and international enabling environments. The Agenda further emphasizes that "countries have primary responsibility for their economic and social development, while committing the international community to create an enabling environment for their development".

In addition to large investment flows, new finance mechanisms are being developed for individuals and small and medium-sized enterprises to buy green products. In solar lighting, consumers can now purchase their lanterns through special microfinance products, or through mobile banking services. Additionally, banks are now offering companies special loan facilities to invest in energy efficiency measures.

4.4 Key success factors

In order to make a successful transition to an inclusive green economy, it is important to streamline national development planning and implementation processes. African countries with inclusive green economy policies have put in place institutions and policies that promote broad-based economic growth, the efficient use of resources, the maintenance of environmental quality, and social inclusiveness and equity. Additionally, the various actors have carried out initiatives that foster an inclusive green economy. At the outset, factors that could influence success, ranging from policy development to implementation, may vary depending on the specific country context. However experience from the study countries has revealed several success factors (see box 17) that are crucial in building an inclusive green economy.

High-level political support

In the study countries, high-level political leaders have supported the transition to a green economy as a central tenet of their national development agenda, particularly in Ethiopia, Mauritius, Morocco, Rwanda and Tunisia. High-level political initiatives or support have sent a strong message to all levels of government, stressing the need to make the green economy a priority. In Ethiopia, vision and commitment at the highest levels of government led to the creation of the CRGE strategy. Subsequently, when the strategy was launched, it benefited from strong leadership from the Office of the Prime Minister and ministerial representation on the CRGE Steering Committee. High-level political support helps spur buy-in among stakeholders and integrate the strategy into countries' structural transformation agenda or development vision.

Some of the countries have established institutions mandated to coordinate the implementation of inclusive green economy strategies within high-level political offices, thereby lending the institutions clout and authority. For instance, while the Ministry of Finance and Economic Development leads the implementation of Ethiopia's CRGE Strategy, the Prime Minister's Office coordinates implementation. In Mauritius, the Prime Minister's Office established the *Maurice Ile Durable* Commission and the *Maurice Ile Durable* Strategic Committee to play a coordinating role. Meanwhile in Mozambique the Prime Minister chairs the National Council for Sustainable Development, which plays a key role in public consultations. The strategic positioning of these institutions within the offices of the president or prime minister allows them to be more effective and robust in their interventions.

Further, participation not only enhances integration but also ensures success in developing and implementing inclusive green economy strategies and initiatives. Mozambique has involved all sectors in developing its green economy road map, which was officially launched by the President. Although Ethiopia initiated its CRGE Strategy from the top, its development involved the participation of stakeholders at all levels. This ensured wider coverage, awareness and a strategy that responds to domestic priorities.

Box 13: The Green Fund of South Africa

Through the Department of Environmental Affairs, the Government of South Africa has made available 1.1 billion rand over three years from 2013 to initiate a Green Fund. The aim is to facilitate investment in green initiatives to transition South Africa to a greener economy and support socioeconomic development. This will facilitate the implementation of various inclusive green growth initiatives outlined in the New Growth Path (South Africa, 2011), the National Development Plan 2030 (South Africa, 2012) and the Green Economy Accord reports, as well as other national documents. The Green Fund is a joint effort between the Development Bank of Southern Africa, the Green Fund's implementing agent, and the Department of Environmental Affairs. Its management is a government-wide undertaking, overseen by a multisectoral Government Advisory Panel and Management Committee.*

In terms of supporting inclusive green growth in the country, the Green Fund is designed to:

(a) Deliver positive environmental, economic and social returns;
(b) Promote innovative and high-impact green programmes through catalytic finance that enables them to scale up and eventually be replicated elsewhere in the country;
(c) Strengthen the capacity to integrate green and climate issues into the South African economy and society;
(d) Build an evidence base of projects to inform future green programmes;
(e) Attract additional resources by leveraging and blending financial and other resources.

By providing funding for the implementation of innovative green growth interventions, the Green Fund helps promote economic growth, create jobs and reduce carbon dioxide emissions. The Green Fund plays a role in implementing green growth recommendations from various government plans mentioned above, as well as the National Strategy for Sustainable Development. By supporting the implementation of the various projects, the Green Fund is expected to help improve South Africa's economic output and productivity.

By funding green growth interventions the Green Fund supports the Government's goal of creating green jobs while steering the economy to a green growth path. The projects supported by the Green Fund help address challenges in gaining access to energy, especially among poor people. Thus, in improving access to and the productive use of new clean energy sources, Green Fund projects enhance the health, education and social well-being of poor communities and of the country at large.

For the Government to achieve its aim of addressing environmental challenges, such as climate change, it is crucial to provide it with the necessary resources and an environment that is favourable for the implementation of green growth interventions. This will also help reduce development challenges facing the country, such as poverty and unemployment. Interventions supported by the Green Fund help the country achieve its environmental targets, including reducing emissions.

Lessons learned

(a) Providing an enabling environment for inclusive green economy-related initiatives is crucial for realizing results. South Africa requires more resources if it is to achieve its ambitious targets of steering its economy onto a green growth path and significantly reducing carbon dioxide emissions;
(b) The role of the private sector is critical. The private sector has demonstrated a strong interest in green economy investment, particularly in high-growth sectors, such as agriculture, renewable energy, infrastructure and industrial services;
(c) Awareness-raising and capacity-building for prospective applicants is critical to ensuring the active involvement of stakeholders, especially women and other disadvantaged groups;
(d) The successful implementation of Green Fund interventions has the potential to stimulate economic, social and environmental benefits for the whole country.

* https://www.environment.gov.za/projectsprogrammes/greeneconomy/about.

Source: ECA, 2015h.

Box 14: The Climate-Resilient Green Economy Facility of Ethiopia

The Government of Ethiopia has established a national financing mechanism, the Climate-Resilient Green Economy Facility, to support the implementation of the priorities set out in the CRGE Strategy and the subsequent development and implementation of relevant investment plans. The CRGE Facility mobilizes resources from various sources, including government, private sector, bilateral and multilateral development partners, carbon trading schemes and financial mechanisms of multilateral environmental agreements. It channels finance through various instruments, including grants, guarantees for loans, co-financing, concessional loans or ex post rewards in the form of payment for verified results. The Facility has purpose-built "windows" to serve in capacity-building, policy changes, programme investment and other actions whose aim is to address specific costs and risks that jeopardize the viability of climate-resilient green investment in Ethiopia. Among many other functions, the Facility helps: determine the optimum allocation of available funds; monitor, evaluate, verify and report on the results achieved by funded actions; and provide fiduciary assurance to finance providers.

The Fund Management Committee, composed of ministers from priority sectors, governs the Facility, setting the criteria and scope for approving its investment plans, and determining its overarching priorities. The Facility's day-to-day operation is coordinated by its secretariat, which is co-hosted by the Ministry of Finance and Economic Development and the Ministry of the Environment, Forests and Climate Change. The former Ministry oversees the mobilization of funds for development programmes and projects. The placement of the Facility within the Ministry helps to prioritize and direct the allocation of funds among different development programmes.

Established less than two years ago, the Facility has made considerable progress. It has mobilized resources and financed 28 quick-start projects in the seven priority CRGE sectors (agriculture, forestry, water, energy, urban development, industry and transport) in more than 80 sites across the country. The projects have made it possible to experiment with various techniques and practices of greening and building resilience in these sectors.

As part of its effort to engage major stakeholders, the Facility has drafted a private-sector strategy that will, when approved, enable it to engage with the private sector and prompt it (including small and medium-sized enterprises) to carry out green economy actions. The ultimate objective is to unlock the private sector's potential and capital to help speed up the realization of the national CRGE strategy.

The Facility has also established partnerships with bilateral (Austria, Denmark, Norway and the United Kingdom) multilateral (UNDP, the World Bank, the Global Green Growth Institute) and other partners (such as the Climate Development Knowledge Network). This effort is being expanded to other partners, such as the European Union, France, Germany, Sweden and the United States. Additionally the Facility has advanced towards accreditation with international climate financing institutions, notably the Green Climate Fund and the Adaptation Fund. This, it is hoped, will lead to lending and efficient and effective programming, facilitating delivery of the results of the Climate-Resilient Green Economy Strategy.

Lessons learned

(a) The Ethiopian experience demonstrates that setting up a finance mechanism facilitates donor support for inclusive green economy-related activities, thereby complementing funds mobilized domestically through the government budget and the private sector;
(b) The ministry responsible for development funding in a country's management of the inclusive green economy finance mechanism plays a crucial role in setting priorities and allocating funds for different inclusive green economy-based development programmes.

Source: ECA, 2015a; Ethiopia, 2011; additional input from officials of the CRGE Facility and the Ministry of Finance.

Box 15: Rwanda's Environment and Climate Change Fund

The year 2012 saw the creation of Rwanda's national climate and environment fund, FONERWA, the primary vehicle for the management of the country's climate and environment finance. FONERWA is a funding mechanism for Rwanda's green economy strategy. It is the primary instrument for channelling, distributing and monitoring international and national climate finance (Nachmany and others, 2015). At the national level, it is specifically designed to streamline extrabudgetary support, existing funds and revenue, including from environmental fees, water and forestry funds. However, the Fund's focus on environmental and climate change finance may undermine funding for activities that have a substantial social component, as distinct from the goal of an inclusive green economy, which is to achieve economic, social and environmental balance in development activities.

Source: FONERWA, 2012; ECA, forthcoming (b). With inputs from Mr. Sekamondo Bigaza François, Ministry of Finance and Economic Planning, Rwanda.

Box 16: Bujagali hydroelectric power plant in Uganda: Financing through public-private partnerships

Despite being one of Africa's fastest-growing economies, Uganda has had one of the lowest electrification rates in the world. Until recently, only 2 per cent of its rural population had access to electricity. The country suffered from frequent rolling blackouts that necessitated expensive emergency generation costing $9 million per month. As part of its effort to offset these shortfalls, the Ugandan Government decided in 2007 that its cheapest option was an $860 million hydroelectric power plant at Bujagali, on the River Nile eight kilometres downstream from Lake Victoria. The Government needed financiers and large hydropower developers to implement the project.

The Government established a public-private partnership, Bujagali Energy Limited, to own the plant on a concessionary basis for 30 years before transferring it to the State. Multilateral lenders including AfDB, the European Investment Bank and the World Bank teamed up with private financiers, such as South Africa's ABSA Capital and Standard Chartered Bank. The dam was commissioned in August 2012. Today, the 250 MW hydropower plant meets half of Uganda's energy needs. The project's construction created over 3,000 local jobs. Bujagali was registered in 2012 as a Clean Development Mechanism project, making it the largest ever such project registered in a least developed country.

Source: IRENA, 2013, cited in ECA, 2015g.

Flexibility in policy design that builds on existing institutional frameworks

The transition to a green economy should be characterized by flexible policy designs that leave space for experimentation, learning and the evaluation of results. Nevertheless, there should be room for solid policy designs that can stand up to rigorous impact evaluation during the implementation phase to generate evidence of progress towards the desired goals. Currently, Ethiopia, Rwanda and South Africa, for example, are building on existing institutional frameworks and reformulating sectoral and national development strategies. Others, such as Mozambique, anticipate the gradual introduction of new institutions and mechanisms to take over the implementation and oversight.

Integrated approach that caters for the transition in the long term while addressing immediate development needs or priorities

Many countries have designed their inclusive green economy strategies to respond to current needs and development challenges while catering to the requirements of the transition. As such, countries rightly see an inclusive green economy as a means to sustainably meet development priorities. Ethiopia, Mozambique and Rwanda have favoured an integrated approach in implementing their strategies. In Kenya, the inclusive green

economy involves a shift towards development that promotes resource efficiency and the sustainable management of natural resources, social inclusion, resilience and sustainable infrastructure development. Tunisia pursues an inclusive green economy with the aim of addressing unemployment, including among graduates, which fuelled the recent revolution. Realizing the opportunities for job creation presented by an inclusive green economy, the Government adopted it as a central aspect of its national development vision.

Establishing key targets which feed into broader development planning processes helps ensure effective monitoring and reporting on progress

Many of the countries undertook baseline studies that informed short-term and long-term economic, social and environmental targets, aligned with domestic priorities. Ethiopia's integration of green economy long-term objectives into its medium-term economic development plan helps to cascade economy-wide and sectoral targets and to monitor their progress against the set targets. The country has incorporated the strategy into its medium-term transformation plan, the Growth and Transformation Plan II (GTP-II).

4.5 Challenges and opportunities

The following are some of the challenges and opportunities that have emerged from country case studies on the inclusive green economy and growth. The studies include those commissioned by ECA in Ethiopia, Ghana, Morocco, South Africa and Uganda that have largely informed this chapter.

Box 17: Factors that contribute to success in the formulation and implementation of an inclusive green economy strategy

While governments have employed a wide variety of approaches to inclusive green growth planning, the most successful ones are characterized by:

(a) Strong high-level leadership which links long-term national goals with environmental risks and opportunities and builds winning coalitions; examples include Ethiopia and Morocco;
(b) Clear economic, environmental and social objectives reflected in formal outcome-based mandates, supported by strong institutional governance, as in Rwanda and South Africa;
(c) Robust and adequately resourced planning and coordination processes, designed to generate compelling evidence, overcome barriers and manage conflicting interests; the development of Kenya's National Climate Change Action Plan (Kenya, 2013) is an example of this efficient approach;
(d) Active and strategic processes of stakeholder engagement with clear roles and well-managed expectations, exemplified by the inclusive green growth process of Mauritius;
(e) Well-governed institutions able to manage a predictable long-term cycle of planning, implementation and review which is aligned with other activities and protects against political change and interference by interest groups. Ethiopia is doing well in this respect;
(f) Building local capacity right from the planning stage by using local experts, or, where there is no local expertise, recruiting foreign consultants and linking them with local experts drawn from different line ministries;
(g) Building political and institutional coalitions that allow all those involved to recognize that while an inclusive green economy is inherently linked to environmental sustainability, the environment is central in driving economic transformation and mobilizing support across the board. Countries strive to develop strong and dynamic coalitions among State and non-State partners. In Ethiopia, this helped sustain high-level support during political transitions, thereby preventing conflicts of interest when the leadership changed.

Source: GGBP, 2014; ECA, 2015 (a), (b), (c); ECA, 2016 (a), ECA, forthcoming (a).

4.5.1 Challenges

Governments and investors may perceive increased tensions and trade-offs between Africa's structural transformation agenda and green economy objectives, particularly given the current drive to accelerate economic growth. Thus evidence-based research is required to help deepen understanding of the potential contribution of the inclusive green economy to structural transformation objectives.

The high initial investment cost of implementing the inclusive green economy may place a strain on many African countries, particularly in the light of the pressing challenges of meeting basic needs. Funding for inclusive green economy interventions competes for limited financial resources with current developmental challenges, such as service delivery. It is therefore critical for inclusive green economy interventions to address these challenges in a significant manner.

It is challenging to sustain and replicate projects, given the extent to which green economy initiatives depend on donors. Many of the inclusive green economy projects being implemented in Africa depend on significant donor funding because governments are unable to accommodate the huge investment required.

There is a need to overcome the technology challenge in order to pave the way for effective implementation of the inclusive green economy. Such technologies are generally still expensive for Africa. For many poor African countries affordability is a critical impediment to the widespread use and adoption of some of the green growth technologies being promoted. It is therefore vital to promote affordable and cost-effective technologies and ensure that the majority of poor people have the means to afford them. Most green technology is found in industrialized countries, and there is a need for development partners to demonstrate commitment to bridging the divide that hampers the uptake of green technologies in Africa.

Lack of skills hampers efforts to provide jobs for unemployed people. The implementation of some inclusive green economy interventions requires new skills and abilities. However, most African countries are lagging behind in identifying and nurturing these abilities and skills. This has negative effects on the realization of inclusive green economy objectives.

4.5.2 Opportunities

Increasingly, African countries are embracing the sustainable transformation and development paradigm, thus increasing the appeal of inclusive green economy approaches. In this regard, African governments recognize the need to move away from the past improper exploitation of resources, which excluded many communities from economic opportunities and benefits while degrading the environment. They are turning towards a more inclusive and sustainable development path, demonstrating greater commitment to inclusive green economy objectives, as evidenced in recently adopted national development policies and green economy strategies. This offers an opportunity to harmonize policies, and thereby facilitate a regional approach to the implementation of large-scale inclusive green economy-related infrastructure projects.

Africa's agriculture and natural resources, which drive its structural transformation agenda, also provide "quick wins" for a green economy. Therefore, using green economy approaches to exploit resources gives Africa ample opportunity to attract the internal and external investment it requires. For instance, green investment in agroforestry, afforestation and tree plantations in areas threatened by desertification will appeal to communities and governments alike. This is equally true of investment in organic agriculture to enhance productivity and access to international markets.

Africa is rich in renewable and non-renewable energy resources. Exploiting renewable energy sources and enhancing energy efficiency initiatives provide opportunities to develop inclusive green economy

objectives on the continent. Additionally energy efficiency leads to higher productivity, which helps reduce the cost that inefficient energy use causes for the economy, while enhancing security of supply. Gains in productivity also reduce the need for new sources of energy to serve people without access to the modern energy services required to enhance health care and education.

The trend in establishing financing mechanisms for an inclusive green economy will facilitate the implementation of key flagship initiatives. These projects provide practical evidence of inclusive green economy opportunities. Success stories detailing the projects' implementation play a key role in scaling up the funding of new interventions. In addition to domestic funding mechanisms, international funding mechanisms offer opportunities for additional financing for inclusive green economy initiatives. Countries in the forefront of inclusive green economy initiatives are likely to reap the most benefit from external funding arrangements.

The benefits of implementing inclusive green economy initiatives across the three dimensions of sustainable development provide an opportunity for greater acceptance of the paradigm. There is a need to enhance this by documenting and disseminating results, as well as up-scaling and out-scaling successful projects.

4.6 Conclusions and recommendations

4.6.1 Conclusions

An inclusive green economy approach can contribute to structural transformation objectives through outcomes that are both green and inclusive. While the transition may have high upfront costs, the agriculture and natural resource sectors that are key drivers of structural transformation in Africa provide opportunities for quick wins that can be harnessed now. The transition entails outcomes in the economic, social and environmental dimensions of sustainable development and offers vast opportunities for decent employment. Supported by development partners, countries have already begun implementing inclusive green economy-related and growth-related initiatives, with significant benefits across the three dimensions. These include organic agriculture, land use management, energy efficiency and renewable energy, and the establishment of financing mechanisms for inclusive green economy initiatives.

Important lessons have been learned to inform the up-scaling and out-scaling of successful projects, including attracting more investment. Notable among the lessons are the need to: support policy decisions with research findings, thus strengthening the science-policy interface; ensure meaningful stakeholder consultation and participation; provide training and capacity-building to guarantee the success of green economy initiatives; provide an enabling environment for the inclusive green economy; and foster private-sector development and participation. The effective implementation of an inclusive green economy depends on a number of key success factors that must be integrated into policy design and implementation at the outset. These include: high-level political support; flexibility in policy design that builds on existing institutional frameworks; the adoption of integrated approaches that cater for the transition in the long term while effectively addressing immediate development needs and priorities; and establishing key targets that feed into broader development planning processes for a well-informed monitoring and reporting framework.

Perceived conflicts between the objectives of structural transformation and an inclusive green economy, high upfront initial costs of the transition, the sustainability of initiatives, technology and skills all pose challenges. These can be addressed, inter alia, by seizing the opportunities that abound. These include greater recognition of the benefits of responsible and sustainable transformation and development, Africa's vast natural resource endowment, the upsurge in new financing mechanisms, and above all, the benefits of

implementing an inclusive green economy. Wide dissemination of good practice and success stories will go a long way in increasing the uptake of inclusive green economy initiatives in Africa.

4.6.2 Recommendations

Evidenced-based advocacy factoring the development imperative

Governments, the private sector and development partners should promote research that demonstrates the synergies and positive linkages between inclusive green economy approaches and transition and developmental objectives, particularly with regard to structural transformation. Evidence-based recommendations are crucial for informed decisions and actions that foster the economic, social, environmental and developmental impacts of the inclusive green economy. Research is also required to demonstrate value for money in terms of returns on investment, and measuring the value of the investment in the interventions.

Given the pressing developmental concerns of African countries, inclusive green economy interventions by governments, business and other partners should address immediate and pressing developmental concerns. These include unemployment, poverty and inequality, and the imperative of meeting basic needs. Therefore, there is a need to guard against policy prescriptions that appear to be satisfying external conditions rather than the legitimate development concerns of the citizenry. Inclusive green economy projects should factor the development path that will lead to optimal development dividends.

Stakeholder participation, partnerships and regional approaches

The roles of stakeholders must be clear from the outset, with all of them contributing. Enhanced involvement of and dialogue with the relevant stakeholders and beneficiaries is important in forming the foundation of inclusiveness. Legislative backing for inclusive programmes and interventions facilitates their implementation and enforcement.

Governments and their partners should promote a regional approach to implementing large-scale initiatives with cross-border implications. This is particularly relevant for infrastructure projects in the energy and transport sectors, and makes it possible to harmonize policies and leverage economies of scale.

Enablers of the transition

Africa must address its green technology gap if it is to effectively implement the inclusive green economy. There is a need to enhance support to local industries and strengthen their competitiveness in the inclusive green technology market, taking into account indigenous knowledge and technology. This calls for meaningful partnerships between governments, their development partners and the private sector, both domestic and foreign.

Governments should mobilize adequate resources, including through partnerships. Initial investment costs for implementing an inclusive green economy are high, and may be beyond the reach of African countries. However, there is a need to put in place minimum enablers of the transition. Enablers include financial resources to demonstrate commitment, kick-start and leverage partners' investment in the green economy. To this purpose, countries should have a domestic resource mobilization strategy that recognizes the role of the private sector.

Ensuring the sustainability of initiatives and wide dissemination of results

There is a need to sustain inclusive green economy interventions. Capacity-building and awareness-raising are critical to enhancing knowledge and skills training, and ultimately supporting local manufacturing and employment. It is important to design inbuilt monitoring and evaluation and

accountability systems to ensure that interventions that contribute to economic, social and environmental benefits and costs are monitored and evaluated against set objectives.

Governments, the private sector and their partners should step up efforts to document and widely disseminate successes and lessons learned from pilot inclusive green economy interventions. This will focus public attention on achievements that are important in encouraging other development partners to provide additional resources for further investment and the replication of interventions.

5. Enabling measures for an inclusive green economy that supports structural transformation

Key messages

An inclusive green economy could foster a sustainable structural transformation. But it would need to be supported by enabling measures. These create a favourable environment for private and public investment in the green economy, making environmentally sustainable investment viable and stimulating markets for green goods and services.

The appropriate deployment of policy instruments can make a significant contribution to enhancing incomes. It can address poverty and inequality, unemployment and lack of opportunities. Additionally, it can promote inclusive growth and enhance expenditure on social services. However, the choice of instruments must be guided by broad inclusive green economy policy objectives and the sustainable development goals of the country concerned.

Science, innovation and technology development must be at the centre of Africa's green economic transformation. The development and transfer of technology must be approached primarily as a business opportunity that could help enhance the competitiveness of Africa's industrial output. It must provide an avenue for strengthening networks of scientists, research and development and public-private partnerships in the development of technology.

Capacity development is essential to realizing an inclusive green economy while making a tangible contribution to a sustainable structural transformation. Capacity development interventions should be designed and implemented within the framework of initiatives related to other enablers of the green economy, particularly the development and transfer of technology, financing, private-sector development, policy and institutional development for an inclusive green economy.

The transition entails a huge investment, requiring significant upfront capital investment, major structural and technological changes, domestic resource mobilization, including from the private sector, and international cooperation. The fact that financial resources for varied and competing development priorities are limited justifies the need to view financing of the transition as part of broader sustainable development financing.

A dynamic, growing private sector has an important role to play in a green economic transformation. In this regard, countries must strengthen the role of the private sector and the mobilization of private-sector investment funds to provide incentives to stimulate private-sector engagement and enterprise development in the green economy.

5.1 Introduction

African governments need to adopt measures that will enable them to develop and implement policies and strategies that drive the transition to an inclusive green economy. This will in turn boost structural transformation and the realization of national development objectives. The measures include policy instruments to optimize economic, social and environmental benefits and facilitate the integration of the green economy in national structural transformation agendas or development plans. Also vital is capacity development

to raise awareness and strengthen institutions and individuals with the new skills relevant to the green economy. It is equally important to develop and adopt green technologies and mobilize adequate, innovative finance for the transition.

The measures create a conducive environment for private and public investment in the green economy, making environmentally sustainable investment viable and stimulating markets for green goods and services. The enablers also maximize opportunities for low-income and middle-income countries and poor people to enjoy the benefits generated by the transition to a green economy. At the same time they deliver equitable and sustainable development. They stimulate investment and reduce barriers posed by various technical challenges, by: (a) reframing long-term national development plans around a green economy, or incorporating the green economy into sectoral or national plans; (b) raising capital for upfront investment that is necessary for the transition; (c) easing access to finance, loans, private capital, grants and other resources required; (d) ensuring private-sector growth; (e) addressing market failures, and identifying and providing the appropriate incentives and disincentives; (f) managing trade-offs resulting from the policy shift and minimizing negative impacts on the economy and underprivileged communities; (g) facilitating access to low-carbon, resource-efficient technologies and know-how; (h) investing in key infrastructure, health, education and skill development; (i) strengthening stakeholder engagement to ensure inclusiveness; and (j) fostering research and development and capacity-building in the evolving concept of the green economy and growth and structural transformation (Poverty-Environment Partnership, 2012; UNEP, 2015).

Enabling measures are not universal or equally important in their applicability, but rather depend on the specific circumstances of a country (for example, initial conditions and the desired transition path). The transition should in essence be designed as a comprehensive national programme of social, economic, political and socio-cultural change. It requires high-level political and social support owing to concerns about fair distribution of costs and benefits that may occur during the transition, and about sustainability, to avoid the mistakes of past transition processes (OECD, 2012; Davies, 2013). Conditions to support the transition should include: international partnerships; financing of public investment and public spending on infrastructure, green goods and services; leveraging private investment through market-based instruments, such as taxes and tradable permits; and providing market incentives to promote the greening of key sectors (UNEP, 2011; UNEP, 2013).

The rest of the chapter is organized as follows. Section 5.2 discusses selected enabling measures in detail. It examines the role of policy instruments; technology development and innovation; capacity development; and financing for the inclusive green economy. Section 5.3 outlines the relevance of the measures to facilitate structural transformation. In section 5.4, challenges and opportunities are highlighted, and section 5.5 offers conclusions and some recommendations.

5.2 Policy instruments for an inclusive green economy

As more African countries adopt green economy policies, policymakers are undoubtedly asking themselves which instruments to apply. Such questions often arise because of uncertainty about the outcomes of new policy instruments and lack of awareness of the factors underlying the policy change. Among other things, the policy instruments required in the transition to a green economy seek to offer incentives for green investment, mobilize resources for the transition, compel public and private stakeholders to be objective in allocating resources to priority sectors, and address market failures to ensure that prices reflect the value of natural capital and the environment while taking social concerns into account. Policy instruments operate in specific environments and

should be responsive to national priorities, such as addressing high levels of inequality, poverty and unemployment, low productivity in the primary sector and industry, or gaps in infrastructure.

Addressing market failures

Market-based policy instruments adjust the cost of inefficient use or overuse of resources, pollution and other negative externalities such as greenhouse gas emissions that impose costs on society from private actions. By internalizing the cost of negative externalities, policy instruments allow market prices to play the critical role of changing consumption, production and investment patterns in favour of greener and resource-efficient technologies and practices. This also removes disincentives to private investment in cleaner and more efficient technologies and practices. Taxes, for example, can also serve as disincentives to pollution or over-extraction of resources and as incentives for sustainable behaviour, such as recycling. By getting the prices right, market-based policy instruments make green products more competitive and affordable for consumers, while rendering environmentally harmful products and practices more expensive so as to discourage their consumption. This promotes behavioural change and may stimulate innovation, leading to new lines of business and the creation of new jobs and employment opportunities.

Mobilizing resources and targeting public finance for the green economy

As discussed in chapter 2, a country's macroeconomic framework is very important as it determines the allocation of resources through fiscal incentives and penalties that encourage sustainable development, such as green taxes and subsidies, or permits and fees, incorporating resource values in investment decisions. Macroeconomic frameworks should promote sound market signals and robust, inclusive, green growth that creates jobs, reduces poverty and enhances the economy's resilience to shocks. Macroeconomic policies support key sectors of the economy and amplify the impact of other enablers on the economy. For instance, promoting decent employment for all can be achieved only if economic growth is broad-based.

Ghana, Mauritius and South Africa are implementing sound fiscal reforms to introduce environmental taxes, remove environmentally harmful subsidies and reallocate budget expenditure to green sectors (UNEP, 2015). Environmental taxes and levies have proved effective in addressing environmental externalities while also generating substantial fiscal revenues. The appropriate deployment of such revenues can help address poverty and inequality, promote inclusive growth and boost expenditure on social services. Green taxes can be an important source of public revenue to finance investment and sustainable infrastructure.

Providing incentives for investment and green practices

Mobilizing private-sector resources for an inclusive green economy may require a combination of fiscal, monetary and other policy incentives. The aim is to channel savings to green investment carried out by businesses of all sizes, including micro, small and medium-sized enterprises. As a policy instrument, feed-in-tariffs stimulate investment in renewable energy by reducing transaction costs, while providing investment security and market stability. REFIT policies encourage firms to generate energy from renewable sources such as wind, hydropower from small plants, biomass and solar power, and guarantee priority in energy purchases from them. Reducing subsidies for input-intensive agriculture may also release funding for private investment, in a situation where only 6 per cent of investment in agriculture in developing countries comes from private sources, compared with 55 per cent in developed nations (World Economic Forum, 2013).

Fiscal reforms that promote green public procurement are another policy mechanism for fostering green investment. Public procurement accounts for over 20 per cent of GDP in developing countries. Greening procurement may be sufficient

to trigger markets and transform supply chains and administrations towards greener economies. Apart from reducing the environmental impact of its operations, green procurement also accelerates market transformation towards greener solutions, encouraging eco-innovation and new, environmentally conscious business practices (Querol and Schaefer, 2013). In Ghana and South Africa, green public procurement has supported the development of emerging markets in sustainable food production, renewable energy and energy efficiency (UNEP, 2015).

Monetary policy authorities should also participate in mobilizing resources for the green economy, inter alia by helping develop appropriate financing instruments or tools for reducing risks to funding for the green economy (OECD, 2014). The macroeconomic risks include fluctuations in economic conditions and commodity prices, interest and exchange rates, and regulations, particularly in the capital market, banking and insurance sector. Those designing monetary policies should emulate development finance institutions and other partners in other sectors by accommodating green investment through loan guarantees or partial risk and credit guarantees (World Economic Forum, 2013). Monetary policy authorities have access to several tools to support capital flows to green investment, including green bonds, special funds (such as sovereign wealth funds, pension funds and green funds) and underwriting (for example, credit guarantees or insurance to commercial banks). They also include payment for verified results (for instance results-based financing), and publicly backed capital funds (such as initial public offerings for green projects) (Gray and Tatrallyay, 2012).

Africa's growth is non-inclusive primarily because of capital-intensive enclave sectors, which fail to include most of the labour force and therefore bring little benefit for the majority of the population (UNEP, 2015). Targeted public spending and investment in key sectors with a highly inclusive green growth potential can trigger and leverage private investment. Agriculture, fishing and forestry are, for instance, sectors that poor people heavily depend on for their livelihoods, especially in rural areas. Targeted public spending on public works for environmental protection activities such as the removal of invasive species, soil erosion control, watershed management and irrigation also generate local employment, provide social safety nets and improve rural communities' resilience to natural hazards and climate change impacts.

5.3 Technology development and innovation

Africa's transition to an inclusive green economy will necessitate a shift from low-productivity, inefficient, wasteful production and consumption technologies to green technologies. Technology is needed to enhance the efficiency of resource production and consumption. While the efficient use of energy and resources is critical for industries, sustainable transport and buildings are important for industries and consumers alike (Borel-Saladin and Turok, 2013).

Science, innovation and technology allow individuals and firms to be creative as they take business risks. Technology also helps boost productivity and connects markets. In order for the region to transition to a green economy, there is a need for a shift in trade from unprocessed and unsophisticated products to manufactured products and interlinked, competitive products. Innovation and the development of technology must be central to the transition. Science, innovation and technological development should also inform policy direction. Of particular importance are results from activities which generate concrete indicators that should be the basis for mainstream policy on sustainable growth (National Research Council, 2014).

Green technologies in the green economy will help reduce waste generation and the associated pollution, especially of air, land and water bodies, by manufacturing and industry. The transition to a green economy requires deliberate promotion

Table 14: Examples of policy instruments by sector

Sector	Fiscal measures	Capacity development	Other measures
Agriculture	• Zero tax on resource-efficient technologies (e.g., no duty or value-added tax on solar water pumps) • Removal of subsidies on unsustainable practices	• Training and public information on green farming practices • Public support for research and development	• Promotion of organic agriculture • Development of post-harvest storage technologies
Forests	• Payment (charges) for environmental services	• Improved information on forest stock flows and cost-benefit distribution	• Designation of protected areas • Promotion of agroforestry and planted forests
Renewable energy	• Phasing out of subsidies on fossil fuels • Carbon taxes • Feed-in tariffs • Public financing mechanisms	• Demonstration projects • Knowledge spillovers from research and development in renewable energy technologies	• Government access to the Clean Development Mechanism
Manufacturing	• Removal of harmful subsidies • Incentives for green technologies • Tax on emissions, wastes and resource extraction	• Information on water and energy efficiency • Public information for consumer awareness • Retooling and retraining of workers	• Establishment of special zones for manufacturing; • Manufacturing clusters
Transport	• Taxes on fossil fuels • Subsidies or low taxes for low-carbon-emission vehicles	• Public information • Driver education	• Best practices

Source: UNEP, 2011.

of efficient and cleaner technologies to help phase out dirty and obsolete technologies. To enhance the competitiveness of Africa's industrial output, it is important to embrace cleaner production technologies through innovation, by developing new technology or upgrading existing green technology. Technology that improves the efficient use of energy and inputs will therefore be key in maintaining the competitiveness of Africa's exports (ECA, forthcoming (b)).

Investment can also be stimulated by incentives for research and innovation, and by the development of technology. As economies grow and societies evolve, demand is expected to increase for energy, water and other resources. Renewable energy technologies such as mini-hydropower and solar energy will play a significant role in increasing access to electricity for the large proportion of Africa's population which lacks it (see table 15 for examples of benefits in South Africa and Tunisia). Technology is also needed to boost the development of sustainable infrastructure for transport, water, waste management and housing.

The development and transfer of technology is primarily a business opportunity. Most technologies arise out of commercial interests, and owing to the

Table 15: Benefits of green technologies in South Africa and Tunisia

Country	Description of technologies	Benefits
South Africa	Green technologies in energy generation, energy and resource efficiency, control of emissions and pollution and natural resource management	• Total net direct employment potential of 98,000 jobs in two years • 462,567 jobs in the long term (eight years)
Tunisia	Solar energy programme	• Solar water heaters installed in 165,000 households • About US$ 15.2 million of savings in household energy costs and fuel subsidies over the period 2005-2010 • About 3,000 new direct jobs and 7,000 indirect jobs created • Reduction of about 705,600 tons in carbon dioxide emissions

Sources: Maia and others, 2011; Touhami and Hannane, 2011.

low level of development in Africa, technology is commonly considered to be driven by foreign direct investment and, to a lesser extent, domestic entrepreneurship. In the past two decades Africa generally has achieved improvements particularly in patent applications, technology exports and fees and royalties received, as well as in research and development. Overall volumes have remained very low relative to world totals, at less than 2 per cent for foreign direct investment and 0.27 per cent for patents and high-technology exports, It is therefore critical to put in place policies that allow capital goods and knowledge (the movement of experts to accompany the capital goods) to be part and parcel of foreign direct investment so as to facilitate greater technology transfer. Only then can such investment benefit the transformation to a green economy. Efforts to deploy green technology must be increased in renewable energy, biotechnology – with appropriate safety and ethical standards – manufacturing and mining. The region should support the establishment of additional national cleaner production centres beyond the handful established with support from the Joint UNIDO-UNEP Programme on Resource-Efficient and Cleaner Production.

Multilateral environmental agreements and mechanisms and world trade could help leverage international support for green technology development in and transfer to Africa. Through the implementation of the Montreal Protocol, the region has received substantial support, including funding for projects, institutional strengthening and training. These initiatives could be further enhanced by efforts such as the Bali Strategic Plan for Technology Support and Capacity-Building and Africa's own initiatives on technological development. Emphasis must also be placed on investing in human capital to spur innovation, identify and undertake research and development, and develop business models that support the development and transfer of technology.

There is a need to strengthen networks of scientists, intellectuals and research and development resources, and to develop market opportunities and potential partnerships within and across national borders. Governments, in partnership with the private sector, should invest in infrastructure – including laboratories, telecommunications, science and technology parks, clusters and business incubators – that supports research and development. They should extend support to the private sector through special grants, affordable loans and guarantees, subsidies and tax incentives for research and development or science and technology parks.

5.4 Capacity development

Human development is not just about reducing the number of poor people. It is about building individuals' capacity to create favourable conditions in which they can develop their livelihoods. An economic transformation, particularly one founded on green economy principles, will need a set of capabilities to ensure that policy adoption and implementation takes place on a meaningful scale. For this reason, capacity development is not limited to individuals but also extends to institutions responsible for policy formulation and implementation, including organizations that support government policies at the national, subregional and regional levels.

Capacity development is essential to enhancing understanding and appreciation of the concept of an inclusive green economy and how it can tangibly help sustain growth and remedy inequality, unemployment and the decline in ecosystem assets. It is crucial to integrate the inclusive green economy, in an effective and solid manner, in countries' structural transformation visions, plans and programmes and in their implementation arrangements. To that end, countries must strive to develop and sustain appropriate capacity for public and private-sector stakeholders alike in order put into effect the inclusive green economy and incorporate it into economic and social activities.

As primary formulators of inclusive green economy policies that foster structural transformation, governments need the capacity to analyse challenges, identify opportunities, select interventions and set priorities. Capacities should be strengthened for policymakers to draw up coherent country plans for the transition and transformation. There is a need to strengthen sectoral coordination and the implementation of policies, particularly in key sectors that drive structural change. The specific role and significance of capacity development in facilitating the transition to an inclusive green economy is summarized in table 16.

Some of the capacity development requirements highlighted in the questionnaire survey and the country reports are featured below. Given that the green economy is a new field for policymakers, and that countries have inadequate knowledge and display little innovation in implementing strategies, there is a need to strengthen the capacity and skills of institutions and officials in the public and private sectors to implement green economic transformation. It is vital to build a critical mass of experts in public administration trained to support the green economic transition. The industrial sectors of most countries have contributed little to job creation, hence the need for the transition to build the capacities not just of public officials, but also of the private sector to identify opportunities in the green economy. Countries need skills to improve their productive capacity, adopt or develop new technologies and green business, and build competitive businesses. They should apply research and technology and integrate them into policy formulation. It is also important for them to have the capacity to develop programmes and mobilize resources and partners, including the private sector.

Capacities are also required to evaluate: the contribution of natural resources to the economy (natural resource accounting); the application of statistical tools and methodologies (data and modelling scenarios); and capacity utilization and retention (human capital deployment and retention). Countries must not focus only on capacity development efforts, but also on improving systemic capabilities along public and private-sector value chains to advance productivity and distributional and consumption efficiencies in line with green economy and structural transformation objectives. Some African countries have designed frameworks that provide the strategic direction and insights into capacity development to foster the transition (see table 17). The frameworks include: Ethiopia's Climate-Resilient Green Economy strategy, Mozambique's Roadmap for a Green Economy, Rwanda's Green Growth and Climate Resilience Strategy and South Africa's Green Economy Accord. Among the positive attributes is that,

except for Ethiopia, the countries have identified lead actors to spearhead or deliver the required capacity development (see table 15).[15] This provides a firm basis not only for effective implementation, but also for regular review and accountability on capacity development.

Most developing countries require external support to build their capacity at all levels in the public and private sectors to translate policies into meaningful reforms. It is vital to mobilize global and regional partners and national stakeholders to meet the capacity development needs and priorities of developing countries. More significant is the need to build capacity to strengthen other enablers of green economic transformation. It is also necessary to design and implement capacity-building as part of initiatives related to technology development and transfer, financing, development of the private sector, policy formulation and institutional development for an inclusive green economy.

The number of international initiatives supporting the transition is growing. In 2013 the United Nations Division for Sustainable Development identified 59 such initiatives (United Nations, 2013). Considering that information services (information exchange, awareness-raising and knowledge management) are generally an inte-

Table 16: The role and significance of capacity development in an inclusive green economy

Level of capacity development	Role/significance of and possible approaches to capacity development to foster an inclusive green economy
Individual level	The role of inclusive green economy capacity development at the individual level includes the following: (a) *Enhancing inclusive green economy awareness, understanding and appreciation.* This role of capacity development is crucial, given that the inclusive green economy is a relatively new concept. Enhanced awareness, understanding and appreciation of the inclusive green economy will form the basis for the active participation of citizens in the inclusive green economy. Awareness and appreciation will also spur deeper penetration of the inclusive green economy and wider uptake, including changes in community behaviour to pursue green economy pathways and alternatives. To enhance knowledge and perception of the concept and practice, it is vital to strengthen formal and non-formal education systems to better integrate and deliver inclusive green economy training; (b) *Developing leadership and fostering champions of change for an inclusive green economy.* This requires training and mentorship in leadership for an inclusive green economy; (c) *Developing skills to organize and conduct or facilitate inclusive green economy processes.* Individuals need to have the capacity to assist countries to formulate inclusive green economy frameworks as part of national development priorities and frameworks. This requires training in diverse areas including strategic planning and facilitation, as well as procedures, tools, methodologies and platforms, inter alia, for the collection, management and dissemination of inclusive green economy data and information; (d) *Developing employable skills in the green jobs labour market.* Capacity development is needed to develop new skills required for jobs that are based on low-carbon resource and energy efficiency and low pollution in priority development sectors such as industry, energy, agriculture, natural resources and transport. Approaches such as vocational and other training and education are required. This points to a need for curricular reform and development, in line with new skill requirements, as well as retraining and retooling for the existing workforce to facilitate the transition to green industries and trade.

[15] The Ethiopian Government, through the Ministry of Finance and Economic Cooperation and the Ministry of the Environment, Forestry and Climate Change, has recently been leading efforts to promote capacity development for the implementation of the CRGE strategy.

Level of capacity development	Role/significance of and possible approaches to capacity development to foster an inclusive green economy
Organizational/ institutional level	Capacity development at this level has a key role in the following areas: (a) *Developing capacity to design, carry out, monitor and evaluate inclusive green economy education, training and other technical support programmes.* This involves strengthening national or regional institutions to support the capacity development of individuals and institutions involved in the inclusive green economy. There is a need for educational and curricular reforms, information exchanges, and the sharing of experience on and good practice in IGE; (b) *Supporting inclusive green economy policy formulation, planning and implementation.* This can be achieved by strengthening capacities, including support to formulate inclusive green economy policies. It also includes support to develop and apply tools for integrating inclusive green economy principles into overarching development and financing frameworks, such as national development visions and plans, particularly those advocating structural transformation. Support can also be achieved by establishing and boosting mechanisms for inter-institutional cooperation and coordination, such as multi-stakeholder forums and other platforms; (c) *Strengthening inclusive green economy statistical capacity and the ability to analyse challenges, identify opportunities and alternatives and take decisions on and monitor the inclusive green economy.* Fulfilling this role requires capacity development in procedures, tools and methodologies as well as equipment and infrastructure to render them operational; (d) *Ensuring effective inclusive green economy assessment and monitoring.* This can be realized by strengthening statistical capacity, such as for determining, calculating or monitoring green jobs. Another way of achieving this is by developing and applying tools and methodologies for monitoring, assessing and reporting progress on the inclusive green economy. Additionally, capacity development will be necessary to collect, manage and disseminate information for advocacy on effective inclusive green economy policies, plans and programmes; (e) *Promoting technological innovation, research and development for an inclusive green economy.* This necessitates the strengthening of capacity, among other things, to assess and analyse innovation systems in order to adopt, adapt or develop green technologies; (f) *Mobilizing financing for the inclusive green economy.* It is important to have the capacity to effectively budget and mobilize resources for the inclusive green economy, including developing bankable inclusive green economy projects, and to access grant finance and other financial instruments from different sources. Additionally, there is a need to strengthen the capacity of financial institutions so as to attract innovative and increased flows of funding to green investment; (g) *Develop green trade.* In this context, building capacity is, for instance, important in supporting the development of new trade regulations, including green or low-carbon certification, as well as eco-labelling. It is equally necessary in developing and harmonizing the standard of products and services and greening trade-related investment.

Level of capacity development	Role/significance of and possible approaches to capacity development to foster an inclusive green economy
Enabling/societal level	At the enabling/societal level the roles of capacity development in an inclusive green economy include: (a) *Strengthening the overall environment of policy, legislative and social norms* within which individuals, organizations and institutions operate at the national, subregional and regional levels; (b) *Strengthening incentive structures* to reduce employee turnover and ensure the availability of long-term capacity for an inclusive green economy in the public and private sector; (c) *Enhancing political will, commitment and leadership as well as machinery to champion an inclusive green economy at different levels;* (d) *Building and facilitating effective participation in support of an inclusive green economy;* (e) *Strengthening and broadening opportunities to enable stakeholders (including women and young people) to use and expand their capacities to the fullest.*

Sources: AfDB and others (2012); Deutsche Gesellschaft für Internationale Zusammenarbeit (2012); ECA and UNEP (2013); Fukuda-Parr, Sakiko, Carlos Lopes and Khalid Malik, eds. (2002); OECD (2011a); OECD (2011b); OECD (2012a); OECD (2012b); and UNEP (2011).

gral part of capacity development, and assuming that all those involved in capacity-building also provide information services, then 64 per cent of the international initiatives reviewed provided capacity development services. This testifies to the importance that international partners place on capacity-building to support the inclusive green economy. It also shows that partners are responding positively to the calls and decisions made at various forums. The main programmes providing capacity development included the Green Economy Initiative (UNEP); the Green Economy Joint Programme (UNDP, UNEP and the United Nations Department of Economic and Social Affairs); the Green Industry Initiative (UNIDO); the Low-Emission Capacity-Building Programme (UNDP);[16] the Green Jobs Programme set up by ILO, UNEP and other partners; and the OECD Green Growth programme.

The Global Green Growth Institute, the Partnership for Action on Green Economy, the Green Growth Action Alliance, the Climate Development Knowledge Network, Climate Works, Project Catalyst and the Global Climate Change Alliance were among the main green economy partnerships supporting capacity development. Funds for capacity development were available from the Global Environment Facility, the Least Developed Countries Fund, the Strategic Climate Fund, the Forest Carbon Partnership Facility and the Green Climate Fund. The United Nations Framework Convention on Climate Change also supports capacity development in Africa through initiatives such as the Clean Development Mechanism and the Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD).

The green economy initiatives reviewed were providing a variety of support services to recipient partner countries, notably in the developing world. Africa's top beneficiary countries, namely Ethiopia, Ghana, Kenya, Mali, Rwanda, Uganda and the United Republic of Tanzania, had each been successfully involved in 10-15 different green economy initiatives. However, gaps still remain, particularly in matching or brokerage services to help link countries with the support that they need, including capacity development.

[16] The Green, Low-Emission Climate Resilient Development Strategy is the umbrella embracing all interventions. The Low-Emission Capacity-Building Programme is a global initiative to support national climate change mitigation efforts, low -emission development strategies and enhanced measuring, reporting and verification systems. The UNDP Green, Low-Emission and Climate-Resilient Development Unit supports multi-level country efforts that intertwine climate change with development choices and actions involving multiple sectors, stakeholders and ecosystems. The Unit works alongside the Programme. For details see http://www.adaptation-undp.org/low-emission-capacity-building-lecb-programme.

Given the growing number of participants and interventions supporting capacity-building for the inclusive green economy, there is an urgent need to coordinate and enhance synergies among capacity development initiatives. African countries have already called for the promotion of coordination and synergies among the various capacity development initiatives by means of international agreements in the economic, social and environmental spheres (ECA, 2013). This will ensure coherent and synergetic interventions which will address capacity development needs comprehensively.

5.5 Financing the transition to an inclusive green economy

While many countries face financial constraints in meeting their development goals, a green economy approach offers Africa a credible alternative for achieving sustainable development, focusing on key sectors with the potential to achieve the greatest impact. It offers an opportunity to tackle unique development challenges, including persistent poverty and unemployment, the threat of environmental degradation, vulnerability to climate change and rapid population growth. It is important to stress that the transition to a green economy will involve a huge investment and fi-

Table 17: Capacity development needs and gaps in national green economy frameworks

National green economy framework	Capacity development attributes (needs, scope, approach and tools; identification of lead actors, role definition and financing)	Gaps/remarks
Ethiopia's Climate-Resilient Green Economy (CRGE) strategy	(a) The need for an adequate institutional setup to establish a lasting platform for a CRGE is mentioned in the strategy, but details of key needs are not mentioned; (b) Limited capacity for collection of high-quality data is recognized; (c) CRGE Highlights was launched as a monthly newsletter focusing on disseminating lessons learned from the implementation of the strategy.	Capacity development not detailed as a major pillar or strategy for CRGE implementation. However, recently the Ministry of Environment, Forestry and Climate Change and the Ministry of Finance and Economic Cooperation have conducted an assessment of capacity development needs and identified priorities at the various levels. A national capacity development programme targets the three tiers of government - federal, regional states, district - and across six sectors - agriculture, water and energy, industry, urban development, transport and forestry, and focuses on three dimensions (organizational capacity, systems capacity, and human capacity and competence).

National green economy framework	Capacity development attributes (needs, scope, approach and tools; identification of lead actors, role definition and financing)	Gaps/remarks
Mozambique: Towards a Green Economy. Roadmap for a Green Economy in Mozambique	(a) Building national capacity in broad terms is identified as necessary for moving forward; (b) Key capacity development priorities have been identified. They include coordination of and capacity for environmental governance, institutions, policies and monitoring or application of environmental legislation. Others are strengthening of national awareness and understanding of the imperative to create a green economy; training of sectors for adoption and implementation of an integrated implementation matrix for a green economy and green growth plan; establishment of integrated knowledge/information about natural capital; distribution or dissemination of maps and knowledge of natural capital and ecosystem services; (c) An action plan including a budget for capacity development interventions has been developed with clear responsibilities for its implementation.	Capacity development aspects mainly targeted at institutional level identified. Capacity development areas and approaches at individual level not identified.
Rwanda: Green Growth and Climate Resilience Strategy	(a) Capacity development is articulated as an enabling pillar. It is well developed as pillar 3 entitled "Capacity-building and knowledge management." In addition, a comprehensive capacity-building plan is envisaged to be developed by the Technical Coordinating Committee as one of the first steps in the implementation of the strategy; (b) Capacity development has been integrated in all 14 priority programme areas; (c) The priority capacity development areas and lead actors for their implementation have been identified; (d) The capacity development priorities identified cover all three levels, namely individual, institutional and enabling environment; (e) The strategy acknowledges that it will require a lot of finance and human capacity to be implemented, calling for significant support from development partners, civil society and the private sector; (f) Capacity to operationalize the Fund for Environment and Climate Change (FONERWA) to facilitate access to international climate finance, especially Fast-Start Finance for adaptation under the Climate Change Convention, identified as one of the priorities.	Capacity development priorities are relatively comprehensive, targeting all three levels of capacity development. A well-articulated budget for capacity development is lacking, posing challenges in resource mobilization and allocation. However, the formulation of short-term capacity-building programmes was to be initiated and work done to develop a long-term plan to provide the support required to implement the strategy.

National green economy framework	Capacity development attributes (needs, scope, approach and tools; identification of lead actors, role definition and financing)	Gaps/remarks
South Africa: Green Economy Accord	(a) Government committed itself to expand training programmes linked to the skills requirements for the green economy and to ensure that new programmes take into account new requirements for the green economy; (b) Retraining and refresher courses are to be made available where appropriate; (c) Green economy needs are to be set as priorities in the national skills framework as well as the annual strategic plans of Skills Education and Training Authorities; (d) Links and partnerships are established between the Green Economy Accord and the National Skills Accord in providing artisanal and technical skills; (e) Lead actors are identified for skills development such as the Department of Higher Education, Skills Education and Training Authorities and further education and training colleges, with plans to expand higher education, strengthen the focus on the green economy and upgrade the knowledge of college lecturers.	Capacity development interventions seem to be biased towards the individual level, with no clear reference to needs and approaches for the other levels. Although there is no action plan for skills development, a stakeholder meeting was scheduled to quantify skills requirements over the next five years and work with colleges, universities and training institutions to provide the required training.

Sources: Ethiopia, 2011, Mozambique, 2012, Rwanda, 2011 and South Africa, 2011.

nancial drain on any economy. It is also necessary to view funding for the transition as part of sustainable development financing that offers great appeal for business, delivering business value to companies that adopt it as a strategy. It should also present enormous investment opportunities for the private sector to provide the infrastructure, equipment, goods and services that will drive the transition (UNEP, 2012).

A green economy transition in Africa would require significant upfront capital investment and major structural and technological changes. Financial resources will also be required for countries to deploy all enablers of the transition, particularly technology, capacity development and institutional and policy reforms. Since all the countries implementing green economy and structural transformation strategies have developed them as part of a home-grown development agenda, the transition's success will largely depend on domestic resource mobilization. However, the transition in developing countries needs support through international cooperation. Only then can it influence human development in any significant way. Trade can also provide considerable funding for the green economy, since the exchange of goods and services has a substantial effect on the flow of green goods, technologies and investment (UNEP, 2011).

Although the need for adequate financial resources to implement the green economy is tangible and substantial, most country strategies are not clear on the ways and means of procuring funding to achieve structural change and an inclusive green economy. Among the various forms of investment needed for the transition in Africa, energy infrastructure is a top priority. As of 2011, about 80 per cent of the region's population (600 million people) had no access to electricity. There is a need to carry out an assessment of funding requirements and options, based on comprehensive estimates of the resources required to implement the green economy and structural transformation programmes. A few countries in the region have green transition programmes that explicitly spell out financing options.

For instance, Morocco intends to raise €20 billion for investment in four key sectors (energy efficiency, renewable energy, solid waste and waste water management), which could create 90,000 jobs by 2020. The country has also implemented new financial and economic instruments to promote the transition to a green economy, including phasing out unsustainable energy subsidies. It also includes introducing an energy efficiency fund with a capital of €390 million to support industry, construction and public lighting; an eco-tax on packaging and sales of plastic to develop a plastic waste recycling industry; and subsidies to ensure widespread water conservation in the agriculture sector.

Ethiopia has mobilized US$ 50 million from the Green Climate Fund for climate resilience projects under its five-year Growth and Transformation Plan GTP-II (2015-2020). This, in addition to domestic resources, will accelerate the implementation of green economy projects identified under the CRGE strategy.[17] It has a national budget of 223.3 billion birr (US$ 11 billion) for the fiscal year 2015/16, focusing on infrastructure among capital expenditure amounting to 84.3 billion birr, and a significant allocation for manufacturing and urban development.[18] Most of the country's budget, which primarily finances GTP-II (or CRGE) projects, is from domestic resources, with foreign aid and loans accounting for 17.7 per cent and 18.6 per cent respectively.[19]

Since 2007 Senegal has been implementing a programme of upgrading enterprises by providing financial support to the private sector to modernize productive capacity (technology and plant), and for technical assistance, maintenance, establishing quality assurance systems, improving human resources and developing exports. The country has created an institutional structure that regulates the mobilization and allocation of resources for the upgrading of enterprises *(Bureau de mise à niveau,* established by Decree No. 2007-1489 of 11 December 2007). In 2009, a funding facility was established for the purpose of structural upgrading. As part of the transformation, 54 companies with a total investment of 45.8 billion CFA francs, whose upgrading plans were approved, received support amounting to 6.3 billion CFA francs. Since the restructuring and upgrading are being implemented under the auspices of the West African Economic and Monetary Union, an additional 12 firms received support totalling 907 million CFA francs.

The need for bank-based financial services and credit remains critical to involving small and medium-sized enterprises in the transition to a green economy in Africa. The need for quick wins and extensive impacts favours funding for large-scale private projects to the exclusion of small and medium-sized enterprises. To address such pitfalls, Mozambique has created the Local Initiative Investment Fund *(Fundo de Investimento de Iniciativa Local),* which seeks to fill the gap left by microfinance institutions and banks that are averse to financing small-scale enterprises, particularly in rural areas.

Mozambique is also strengthening the link between the inclusive green economy and structural transformation in the agricultural sector by using the Agricultural Development Fund and the District Development Fund to open lines of funding for the sector. The latter is a fund established by the Government to finance multisectoral initiatives, essentially to help improve food production and job creation. It also boosts support activities such as mapping soils and agro-ecological zones, reducing the use of agricultural chemicals, introducing new crops and practices and diversifying crop production.

Another area that requires financing is infrastructural development. The region has a massive infrastructure gap, yet it invests only 4 per cent of

[17] Ethiopian Broadcasting Corporation, "Ethiopia to receive $50 million from GCF", 23 November 2015. Available from http://www.ebc.et/web/ennews/-/ethiopia-to-receive-50-million-from-gcf.
[18] Aaron Maasho, "Ethiopia proposes $11 billion (223.3 billion birr) budget for FY 2015/16", 6 October 2015. Available from http://nazret.com/blog/index.php/2015/06/10/ethiopia-proposes-11-billion-223.
[19] Tinishu Solomon, "Ethiopia's unprecedented budget targets education and infrastructure", 9 June 2015. Available from http://www.theafricareport.com/East-Horn-Africa/ethiopias-unprecedented-budget-targets-education-and-infrastructure.html.

its GDP in this sector (AfDB, 2013). Sub-Saharan Africa has infrastructure needs estimated at over US$ 93 billion annually over the next 10 years. These concern electricity, water, roads and information and communications technology, the poor state of which slows the region's economic growth by two percentage points every year and reduces productivity by as much as 40 per cent.[20] While domestic resources (mostly from tax revenue) fund two thirds of current expenditure on infrastructure (US$ 30 billion annually), a significant chunk of the investment in infrastructure (US$ 15 billion) comes from external sources (Foster and Briceño-Garmendia, 2010).

The transition to a green economy also stands to benefit from a growing and inclusive private sector. The transition is creating investment opportunities in sectors that were previously unattractive. It is vital to promote public-sector-led investment in natural resources, particularly in industries that face peculiar challenges in attracting private-sector participation. There is a critical need for publicly guaranteed financing of such sectors in order to attract private entrants into the sector.

A growing number of private equity funds are already springing up to finance agricultural production in Africa. While a number of private equity funds target infrastructure, the majority are in the energy sector. Investment in energy and natural resources in sub-Saharan Africa totalled US$ 747 million in 2013. There were 27 private equity transactions in the energy sector between 2010 and 2013, with an aggregate value of US$ 1.2 billion (Ernst & Young, 2013). The fact that small and medium-sized enterprises dominate the informal sector in sub-Saharan Africa, offering up to 75 per cent of non-agricultural jobs, implies that the distribution of investment funds to inclusive green economy projects should be carefully planned to promote private-sector growth, particularly in small and medium-sized enterprises (OECD, 2013).

20 http://www.afdb.org/en/topics-and-sectors/sectors/private-sector/areas-of-focus/infrastructure-finance/.

5.6 Other enablers of the transition to an inclusive green economy

The list of enablers of the transition is not exhaustive. However, in major conferences on sustainable development, including in the Rio+20 outcome document *(The Future We Want),* United Nations Member States have identified policies, capacity development, technology facilitation and financing as means to implement an inclusive green economy. Obviously there are many other enablers that are important for the transition.

For instance, regional integration would provide an expanded market or economies of scale for the increased production capacity of a green economy. Specifically, the huge renewable energy potential of the region would be beneficial only if neighbouring countries cooperated to invest and trade with each other and provide avenues for labour mobility within the various economic groupings. The policy frameworks of regional economic communities therefore have a bearing on the location, design, implementation and success of green economy projects with regional implications.

In some countries, devolved structures are very important for taking development to key stakeholders. Decentralization is a governance and institutional issue, as it allows stakeholder participation at various levels. This may be important for resource-rich countries, such as Mozambique and South Africa, where decisions on how to benefit from the exploitation of natural resources often lead to polarized views. Some of the institutional configurations needed to resolve some of these issues have been discussed in chapters 3 and 4. Information-sharing, communication and developing awareness among stakeholders are also important enabling measures that can allow vibrant stakeholder participation in development. There is a need to promote the green economy as a business opportunity and a social transformation agenda with environmental benefits.

Private-sector development is an equally important enabler. Recognizing the private sector's role in development, African countries that attended the Post-Rio+20 Africa Regional Implementation Meeting in 2012 pledged to create an environment that would strengthen partnership with the private sector and other stakeholders and enable business and industry to contribute to sustainable development. The aim was to ensure that green growth contributes to the overarching goal of poverty eradication. A stronger role for the private sector will complement government efforts to drive the transition, particularly in mixed economies where the private sector is the main driver of economic growth. In this process, it is important to properly capture the role of micro, small and medium-sized enterprises, particularly in countries where such enterprises are biggest contributors to employment and economic growth. The challenge, especially in terms of the inclusive green economy, is that it would be inappropriate to pursue certain investment, including those that support large-scale innovation, without involvement of the private sector.

The international environment is also a significant enabler, particularly for developing countries that depend on partners for their development. Mutual accountability and transparency among recipient and donor countries, and flexibility on the part of financiers, are important. They allow beneficiary countries to own the development process while also setting priorities based on their national objectives. While official development assistance and international development cooperation partnerships remain key to funding, their availability to developing countries depends on the survival of a mutually beneficial relationship between recipient and donor countries.

One area where mutual accountability and transparency have been an issue is that of climate finance. African countries, like other developing countries, want to take part in decisions on the administration of funds such as the Green Climate Fund, an operating entity of the financial mechanism established under article 11 of the United Nations Framework Convention on Climate Change. These principles apply to other international (multilateral) funds such as the Least Developed Countries Fund, the Adaptation Fund and the Global Environment Facility that can be accessed by developing countries to support their transition to a green economy. However, it is important to stress that moving to a green economy involves more than seeking climate change finance. There is a need to distinguish between resource requirements for the green economy and adaptation and mitigation costs, which are just part of the pie.

5.7 Linking inclusive green economy enablers to structural transformation

Compared with developed countries, Africa is still in the transition stage in many aspects of development. The region can therefore afford to be flexible in introducing new policy instruments to support the transition to a green economy. Structural transformation, in particular, is expected to accelerate industrial development, promote energy efficiency, increase production and access to renewable energy, sustain and enhance natural resources and other ecological assets, and expand trade opportunities.

The enablers of an inclusive green economy are equally useful for structural transformation. Supporting African countries in strengthening their capacity to formulate, adopt and implement inclusive green economy policies should therefore be viewed as part of accelerating structural transformation in the region. A green economy fashioned around a transformative agenda could result in positive social impacts, particularly on poverty eradication. The green economy could also solve the region's critical development challenges. Africa's structural transformation should be based on efficient resource extraction and use, value addition to natural resources and agricultural products, and sustainable industriali-

zation. There is a need for transformative policies and institutions, technology, capacity development and financing to enable Africa to realize wide-scale transformation that would resonate with the ambitions of eradicating poverty.

Businesses are critical in stimulating demand for better technologies and products and helping encourage greener choices. Extensive reforms are needed across sectors to attract the private sector to channel investment funds to new growth sectors of the economy, with government providing the enabling conditions for green transformation and enhancing the competitive advantages of the economy (UNEP, 2012).

In this context, African policymakers are keen to achieve structural transformation, but through a sustainable shift from activities with low to those with high productivity, and with the industrial sector playing a central role. In addition to financial capital, strong and sustained economic growth will require technological progress, innovation and technology indigenization (Sachs and MacArthur, 2002). Thus, a sustainable structural transformation will require not only an enabling environment afforded by sound institutions and policies but also investment that promotes the sustainable use of natural resources, economic diversification, industrialization, innovation and technological development, and the closing of financing gaps that constrain green investment.

5.8 Challenges and opportunities

5.8.1 Challenges

Lack of an enabling environment

The lack of an enabling business environment is in itself a major challenge to green economic transformation. It manifests itself through conditions that can generally be described as external factors that hinder business. Examples include situations where markets are not functioning well, property rights are not guaranteed, civil conflicts are raging, no institution is appointed to coordinate or manage the transition, unfavourable macroeconomic performance or policies exist and laws are not enforced. An enabling business environment consists of clearly defined regulations that affect businesses through the costs of compliance, backed by quality infrastructure, health and education systems, the rule of law, political stability and security, functioning markets, liberalized trade and international standards (UNIDO and Deutsche Gesellschaft für Technische Zusammenarbeit, 2008).

The questionnaire survey identified the reluctance of institutions to reform as another constraint. Rigidities are typical symptoms of a regime that is being held to ransom by vested interests, which tend to undermine reforms. Stakeholder participation, phase-in, gestation periods and incremental implementation strategies could help in addressing the concerns of all stakeholders (ECA, forthcoming (b)).

Choosing policy instruments is a rigorous and challenging undertaking

There is a need to ensure that policy instruments are selected in the light of their dynamic net benefits to the society and their capacity to trigger inclusive green structural transformation. However, choosing a set of policy instruments to accompany green economy and structural transformation strategies and policies is not an easy exercise. The chosen set of instruments must be consistent with the broad inclusive green economy policy objectives and sustainable development goals of the country concerned. The choice should be based on a rigorous process, supported by evidence of their appropriateness, costs and benefits, yet most African countries face data challenges.

An evaluation of existing policy frameworks may shed light on the experience of countries in using policy instruments for sustainable development. The green economy assessment in Kenya, for instance, revealed the need for the country to review the current environmental

tax landscape and identify areas where taxes or charges can be introduced, eliminated or raised to support environmental protection, conservation and resource efficiency (UNEP, 2014). Since the transition is a dynamic process of change from current practices, the choice of policy instruments should reflect this dynamism and build on past experience by such measures as encouraging innovation in production processes that promote sustainable resource use (for example, environmental taxes in South Africa), aligning fiscal policy to promote renewable energy and encourage job creation (for instance, the feed-in-tariff in Kenya, or shifting government expenditure to promote green procurement), and encouraging private standards that promote sustainability (such as certification of sustainable production and trade in the South African wine industry[21]).

Challenges to policy instruments come in subtle forms, and often revolve around the interests of various stakeholders. Businesses are particularly wary of loss of competitiveness as they internalize externalities to a socially optimal level, or as they adjust production methods to improve resource efficiency or product sustainability. Developing countries are also wary of some market segments using environmental performance to bar exports from certain regions. Differences in environmental quality across countries, awareness of environmental problems and differences in the structure of policies and costs of implementation all contribute to the complexity of the debate (International Institute for Sustainable Development, 1999). It is also desirable that within countries, policy instruments should encourage better income distribution, and galvanize the support of all stakeholders for the transition.

[21] Sustainable Wine South Africa is an alliance between the Wine and Spirit Board, the Integrated Production of Wine scheme, the Biodiversity and Wine Initiative and Wines of South Africa. Together these organizations are driving the South African wine industry's commitment to sustainable, eco-friendly production. For more information, see http://www.swsa.co.za/.

Securing political support for policy instruments, especially in the context of an inclusive green economy, is often a major challenge, and depends on the structure of the problem to be addressed by the instrument. Among other things, it also depends on existing institutional, legal and economic conditions in which the instruments are meant to function. Lack of political will to impose policy instruments could arise because of a number of issues, such as an absence of understanding of the green economy concept, a lack of clarity or experience with regard to policy instruments, or a lack of capacity to design, implement and monitor the outcomes of policy instruments. Other issues include failure to find the right balance between economic growth, environmental concerns and social inclusiveness, business-as-usual inertia and vested interests.

Facilitating innovation and technology development and transfer

Technological innovation, development and transfer are key to the green economy, industrialization and catch-up in developing countries. However, the cost element is usually too prohibitive for any meaningful level of innovation or technological development to take place. Innovation, like technological development, is costly, risky and path-dependent, since initial conditions and historical antecedents matter for eventual outcomes (Aghion and others, 2014).

There is a need to facilitate the transfer of technology from the developed to less developed countries to improve the capacity of developing nations to absorb cutting-edge technology. However, that facilitation must take place in an environment where developing countries promote investment in low-carbon innovation, foreign direct investment, skills exchange and human capital development in order to benefit from knowledge spillovers from developed countries (Aghion and others, 2014). One way of strengthening this would be to introduce policy and regulatory frameworks that synergistically cover environmental, trade and industrial issues to facilitate innovation as well as the development and

transfer of technology. Another would be to promote investment in the development or diffusion of green technologies. International partnership arrangements, particularly frameworks relevant to the development of technology, such as the Bali Strategic Plan for Technology Support and Capacity-Building, could benefit developing countries if judiciously implemented by all stakeholders (ECA, forthcoming (b)).

Other barriers to the development and transfer of technology include: a lack of legal and regulatory frameworks; inadequate protection for intellectual property rights; limited institutional capacity; excessively bureaucratic and unclear arbitration procedures; political interference; uncalled-for interventions in domestic markets (for example, subsidies); a lack of coordinated policies; a lack of infrastructure; limited technical standards and institutions for supporting those standards; low technical capabilities of manufacturing firms, and lack of a technology knowledge base; non-transparent markets; and high costs and capital intensity of new technologies.[22]

Inadequate financing of upfront investment for the green economy

Lack of adequate funding for the inclusive green economy and structural transformation process is expected to hamper implementation in many countries. Financing of development frameworks, such as national development visions and plans, particularly those advocating structural transformation, requires backing. Already countries face limited financing for varied and competing development priorities, hence the need to view the financing of the transition as part of sustainable development funding.

Financial support should also be extended to the private sector, particularly to small and medium-sized enterprises, which will require cash flow support or a capital boost to stay relevant in the transition and beyond. In the Congo, young entrepreneurs have difficulty in accessing finance from regular financial institutions. Similar problems are surfacing in Mozambique, where the need for green financing for small producers and microenterprises receives little attention. Financing small-scale businesses has important spillover benefits for local economies and for poverty reduction, and must find space in the transition.

It is necessary to boost domestic resources to meet the initial investment costs of green economy projects while external resources from partners play a catalytic role, supporting investment, particularly that which would otherwise not be carried out. A lack of sustainable infrastructure (energy, water, transport and communications) can be tackled only by massive public investment. There is a need for funding instruments that can help lower upfront investment costs, reduce risk for private-sector participation and address inadequate domestic allocation of funding for the implementation of green economy initiatives. International partners should also address the unpredictable or slow disbursement of financial resources, which creates uncertainty and inconsistency and adversely affects the implementation of development programmes.

Countries should also take advantage of multilateral climate finance mechanisms, such as the Global Environment Facility, climate investment funds and the ClimDev Special Fund, to finance specific opportunities that promote the green economic transformation. Africa has received more than US$ 171 million (about 32 per cent of the global total) from the Multilateral Fund set up under the Montreal Protocol on Substances that Deplete the Ozone Layer for enabling activities, such as institutional development projects and training, but could benefit much more in other areas depending on the funding mechanism (UNEP, 2009).

[22] See United Nations Economic and Social Commission for Asia and the Pacific, "Promoting the transfer and development of climate-smart technologies". Available from http://www.unescap.org/sites/default/files/15-PAR~1.PDF.

Inadequate capacity at all levels in the public and private sectors to implement the inclusive green economy

Capacity is needed to strengthen policy formulation and implementation as part of the effort to accelerate green economy transformation in the region. However, very little innovation is taking place in terms of formulating and implementing new policies. The same institutions and personnel are expected to undergo a metamorphosis and position themselves to implement a transition. This has exposed the limited capacity of countries to develop policies and to budget and mobilize resources for an inclusive green economy, including developing bankable inclusive green economy projects, and to obtain access to grant finance and other financial instruments from different sources. It has also severely constrained public officials who are expected to implement projects that require multidisciplinary knowledge of the green economy and structural change.

There is a need to develop capacity for both the public and private sectors to engage in and identify opportunities in the green economy, particularly for small and medium-sized enterprises that may not have the resources to upgrade their own skills and technology. Market institutions, including financial and capital markets, should be empowered and prepared to stimulate competition. Ultimately they should be able to meet the needs of the private sector and individuals, as well as the financial regulations of various jurisdictions, because they may need to complement domestic resources with external resources. Individuals also need new skills for jobs that are based on low carbon, resource and energy efficiency and low pollution in priority development sectors, such as industry, energy, agriculture, natural resources and transport.

5.8.2 Opportunities

Sustained inclusive green growth

African countries have shown tenacity and resilience in the face of global economic downturns. The strong growth showing of the region offers an opportunity to apply fiscal reforms and other economic instruments, and thereby trigger inclusive green growth. Sustained growth can promote rapid economic transformation, but more needs to be done to boost economic performance and accelerate diversification.

The private sector will play an important role in transforming sub-Saharan Africa's economy. The ideal would be to complement the region's unprecedented economic growth with less informality, stronger inter-firm linkages and greater export competitiveness. However, this largely depends on national macroeconomic policies, the development of infrastructure and favourable fiscal incentives for structural transformation and local industrial growth. Regional and subregional frameworks, such as the tripartite free trade area set up by the Common Market for Eastern and Southern Africa, the East African Community and the Southern African Development Community, or the Continental Free Trade Area brokered by the African Union, also shape the business-enabling environment and determine the trend in industrial investment.

A regional platform such as the tripartite free trade area is very important for promoting industrialization. Regional industrial policies should foster conditions for competitiveness, which in turn could promote innovation, efficiency and productivity (UNIDO, 2003). The African position on industrial regionalism emphasizes the harmonization and coordination of policies and the regulatory environment to improve the business climate and scale up industrialization and trade (AfDB Group, OECD Development Centre and UNDP, 2014). The implications of the tripartite free trade area and the Continental Free Trade Area include industrial concentration and relocation, which could change the landscape of environmental regulation, the distribution of jobs and economic opportunities. Countries with better infrastructure and incentives are expected to attract more investors looking for a new location (Ajumbo and Briggs, 2014).

The improvement of infrastructure and the development of new roads, ports, telecommunications, storage, energy generation and distribution could also expand opportunities for economies to grow. As African countries take advantage of infrastructure gaps, it is important for the new infrastructure development to meet sustainability considerations, including resource efficiency and cost effectiveness (UNIDO, 2011). Specific infrastructure incentives for industry could unlock green structural transformation, and strengthen inter-industry linkages, for example industrial parks or estates (eco-industrial parks) planned with exchange of by-products, resource efficiency and inter-firm networking (green value chains) in mind (UNIDO, 2011; Gibbs and Deutz, 2007).

Leapfrogging technology development and transfer is on the right track

Although the region lags behind in terms of technology application in industry, the level of expectation has increased with the transformation towards an inclusive green economy. Countries in the region are already developing or supporting technological upgrading for sustainable industrial development. Egypt has been at the forefront of clean industrialization through its programme on hazardous industrial waste management in the Manshiet El-Sad area, which promotes cleaner production technologies. Zambia is one of over a dozen countries that have established National Cleaner Production Centres, which serve as environmental competence centres for companies to provide environmental training and advisory support. The South African National Cleaner Production Centre extends training to small and medium-sized enterprises in agro-processing, automotive and transport equipment, metals and allied processes, pulp and paper, clothing and textiles, leather and footwear.

Multilateral agreements and institutions such as the Climate Technology Centre and Network, the Global Environment Facility and the Bali Strategic Plan for Technology Support and Capacity-Building provide opportunities for Africa to leverage international support for the development and transfer of green technology.

Commercial interests that attract foreign direct investment with a high technology content should also be explored, particularly those that involve the movement of large machinery and specialized knowledge. Countries may also target foreign direct investment that comes with offers of exchanges of trained personnel between firms, learning and patents (Popp, 2012).

Potential for mobilization of resources and targeting

Financing strategies or mechanisms complement most of the inclusive green economy policies adopted by countries in the region. Ethiopia, for example, is raising US$ 150 billion to finance its CRGE strategy over 20 years, with 2010 as the starting point.[23] Rwanda will raise about US$ 100 million per year from domestic sources (including environmental fines and fees, proceeds from forestry and water, and budget allocations from line ministries) and external sources (including bilateral and multilateral partners) to implement projects that support national sustainable development goals. These financing mechanisms help mobilize technical and financial resources for basic infrastructure and other services that could facilitate economic transformation.

Governments have also been proactive in attracting large-scale funding from multilateral and bilateral sources, for example in infrastructure and the energy sector. Similar financing arrangements could be explored for industrial upgrading, although the scope may be limited to specifics such as technology transfer (including under the Clean Development Mechanism or another facility), infrastructure (such as industrial parks) or capacity-building.

23 Wondwossen Tadesse, "Overview of the Ethiopia's Climate Resilient Green Economy Strategy". Available from http://www.oecd.org/dac/environment-development/ Wondwossen%20Tadesse_ Ethiopia%20Climate%20 Resilient%20Green%20Economy.pdf.

Africa has a huge domestic resource potential consisting of over US$ 500 billion in tax revenues, US$ 168 billion in mineral wealth, US$ 400 billion in international reserves, US$ 40 billion in diaspora remittances, US$ 60 billion in banking revenues and over US$ 1.2 trillion in stock market capitalization. Such resources could finance most of the infrastructure and development programmes needed to transform the continent's economies. However, there is a need for strong commitment to good governance, effective institutions and responsive policies to translate green economy strategies into actions (NEPAD Planning and Coordinating Agency and ECA, 2014). The Africa 50 Fund launched by AfDB also offers an opportunity for the region to deliver on high-impact national and regional projects in the energy, transport, information and communications technology and water sectors (ECA, forthcoming (b)).

There is also an opportunity to consolidate private investment flows to Africa, particularly in the natural resource sectors. These natural assets account for an estimated 24 per cent of total wealth in sub-Saharan Africa. If governments work together with key financial markets and all the relevant stakeholders, they can ensure that investment is channelled to priority sectors (AfDB, 2013; European Commission, 2014). For instance, the South African Government in its 2011 National Strategy for Sustainable Development and Action Plan targeted employment creation and industrial development to boost economic and environmental benefits. It earmarked approximately US$ 1.2 billion for green industrial development. Other resources for green economy initiatives identified under the Strategy include US$ 10 billion from the private sector and US$ 80 million from the National Treasury (ECA, forthcoming (b)).

5.9 Conclusions and recommendations

5.9.1 Conclusions

Creating an enabling environment for greening economic transformation starts with policies and regulatory frameworks that address the systemic limitations inhibiting structural change. The transition essentially requires a policy structure that encourages and stimulates shifts in production, consumption and investment in and across various sectors of an economy. Appropriate policy instruments, along with their inherent incentive structure, can stimulate: resource efficiency; innovations and research in, and the development of, green technology; natural capital and social infrastructure. In turn this can further accelerate the transition to a green economy.

Supporting innovation and the development and transfer of technology will also play a crucial role in the transformation to a green economy. Although Africa has put in place continental initiatives to promote technological development, it needs adequate resources to support the initiatives. There is also a need to strengthen networks of scientists, intellectuals and research and development resources, and to develop market opportunities and potential partnerships within and across national borders. There is a need to strengthen regional frameworks that support technological development and innovation, such as the African Union's Action Plan for the Accelerated Industrial Development of Africa. It is also important to support joint regional and subregional projects and programmes of mutual interest that support innovation and technological development, such as academia-industry-public partnerships. This would help offset the limitations of Africa's relatively small private sector.

Capacity development is also essential in strengthening institutions and the overall policy environment within which the transformation will take place. Capacity-building is a cross-cutting

enabling measure for the inclusive green economy, fostering green financing, the development and transfer of technology, as well as the development of policy, institutions, trade and the private sector. This being a priority element, countries need to strengthen their frameworks for the development, coordination and delivery of inclusive green economy capacity. It is necessary to establish and strengthen easily accessible institutions that can be leveraged and tailored to respond to needs at local, national and regional levels. For the inclusive green economy to be relevant in the region's development, countries should link their long-term development agenda to inclusive green economy capacity development approaches. It is necessary for the countries to monitor the approaches for concrete and transformative results, and to establish the positive impact on the target beneficiaries' well-being. Given the regional implications of the green economy, it is important to promote region-wide coherence, synergies and coordination in capacity-building. The different clusters of the Regional Coordination Mechanism for Africa, in support of the African Union and its NEPAD programme, could also develop, incorporate and prioritize inclusive green economy -related capacity development plans and activities in their business plans. This could be initiated with clusters involved in education, industry and infrastructure, including energy, natural resources and agriculture.

Africa needs sufficient financial resources to boost the transition to an inclusive green economy in key strategic sectors that will drive its growth and transformative agenda. A green economy strategy, based on long-term national development plans, would identify priority areas for investment (and disinvestment) and map the required mix of funding sources. Countries should strengthen their domestic resource mobilization to reduce risks associated with unpredictable external funding. However, they also require international finance to catalyse actions among other enablers discussed in this chapter. Ideally this should go beyond the initial phases of conceptualizing green economy strategies and programmes, as well as technical assistance, to implementing green projects in developing countries.

The role of capital markets in mobilizing private investment funds to green growth sectors should not be underestimated. There is greater scope for the private sector to influence the transition to a green economy at the national, subregional and regional levels. Countries must be prepared to work hand in hand with the private sector, particularly small and medium-sized enterprises. Private investment in natural resource sectors in Africa is at an all-time high. Countries should have a strategy for tapping into private domestic resources to finance the transition to an inclusive green economy. With larger private flows of funds, and increased demand for green investment, domestic financial markets can grow. Only then can they provide financial solutions offering reduced risk and lower cost of capital for green economy projects in Africa. Critically, the transition to a green economy must form the basis for economic and social development programmes, as part of countries' sustainable structural transformation agenda. African countries should therefore find ways of leveraging innovative investment instruments such as green bonds and sovereign wealth funds that could shore up funding for the green economy. However, underdeveloped capital markets are a constraint to capitalizing on such instruments.

5.9.2 Recommendations

Countries should:

Aim for a big shake-up

Design the inclusive green transition as a comprehensive social, economic, political and sociocultural process of change to ensure fair distribution of costs and benefits that may occur during the transition, and also sustainability, to avoid the mistakes of past transition processes.

Develop the human capital needed for: spurring innovation; identifying and undertaking research and development; institutional and policy reform;

and private sector development that supports the green economy. The focus should be on long-term economic development, with poverty eradication, equity and social justice at the core.

Enhance synergy and policy coordination

Support the inclusive green economy and structural transformation with appropriate macroeconomic frameworks and policy instruments that will promote: sound market signals; robust, inclusive, green economic growth that reduces poverty; and the incorporation of resource values in investment decisions.

Choose an effective policy instrument set that fits in with existing institutional capabilities and policy frameworks, and pay due attention to impacts and distribution concerns, especially with regard to poor and vulnerable groups.

Strengthen institutions of governance (domestic and regional) to create an enabling environment that reinforces the rule of law, facilitates transparency and accountability and promotes competitive businesses. It is also important to strengthen institutional capacities to manage change, and to enable policymakers to draw up coherent country plans for transformation.

Place innovation and the development and transfer of technology at the centre of structural economic transformation. There is a need to exploit commercial interests that attract the high technology content of foreign direct investment, particularly that which involves the transfer of large machinery and specialized knowledge. There is also a need to boost domestic resource mobilization for the transition.

Strengthen other enablers of green economic transformation, and design capacity-building programmes as part of initiatives to develop and transfer technology, provide financing, develop the private sector, formulate policies and strengthen institutions for structural transformation and the transition to an inclusive green economy.

Link capacity development to the achievement of specific tangible results of the inclusive green economy strategy or plan, and make it an integral part of the implementation arrangements, including financing of strategies and plans.

Boost resource mobilization and support enterprise development

Implement macroeconomic policy reforms supportive of the green economy and structural transformation agenda. It is necessary to undertake fiscal reforms as part of the effort to improve the tax administration system so as to close domestic resource gaps and eliminate leakages and inefficiencies, while continuing a transparent review of the tax base.

Strengthen the private sector's role to complement the efforts of governments in driving the transition. Sustain funding to the green economy so as to increase growth prospects, broaden opportunities for private-sector development, create jobs, reduce income inequalities and eliminate poverty.

Enhance the mobilization of private-sector investment funds, provide incentives to stimulate private-sector engagement and boost enterprise development in the green economy. Support private-sector investment in innovation and technological development, while aligning industrial research with national development objectives.

Governments should also be proactive in attracting large-scale funding from multilateral and bilateral sources for transformation in key sectors, such as infrastructure, energy and industrial upgrading. Financial support should also be extended to the private sector, particularly small and medium-sized enterprises.

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Annex I: Practical application of methodologies and tools in Africa

Methodologies and tools	Practical application in Africa
Methodological frameworks	
Economic assessment	
Feasibility studies	Feasibility studies[1] are widely used in African countries to assess the viability of policies, projects and investment against a number of criteria related to a green economy, including technological innovation and operational, economic, technical, scheduling, cultural, resource, market and legal issues.
Impact analysis	The impact analysis methodology has been adopted to evaluate the socioeconomic impacts of policies for the inclusive green economy in African countries. In particular, recent studies have concentrated on the impacts of rural electrification projects (Bernard, 2012), the introduction of innovative agriculture technologies (De Janvry, Dustan and Sadoulet, 2011), ands the implementation of national agricultural policies (De Janvry and Sadoulet, 2010).
Social assessment	
Poverty and social impact analysis	Since the development visions and plans of most African countries place priority on poverty reduction and social inclusiveness goals, poverty and social impact analysis is an essential tool for assessing the impact of green economy policies on efforts to improve the well-being of the population. Also, such analyses can be used to detect potential negative impacts of policy interventions on the most vulnerable sections of society, and design adequate compensatory measures. An example is the analysis conducted in Mozambique to assess the impact of a possible rise in fuel tax. The findings were that a tax increase would intensify poverty, albeit slightly (ECA, forthcoming (a)).
Environmental assessment	
Strategic environmental assessments	In the African context, strategic environmental assessments are increasingly used to inform national and local development planning processes. In particular, South Africa has adopted this assessment tool in a variety of sectors. Its Department of Environmental Affairs is conducting a strategic environmental assessment to identify the most suitable areas for the roll-out of large-scale wind and solar energy projects.[2] Another example is the Ghana Poverty Reduction Strategy (ECA, 2005). A strategic environmental assessment for coastal development is being applied in Mozambique in response to growing conflicts of interest along the country's coast, including in the hydrocarbon, tourism, fisheries and conservation sectors (ECA, forthcoming (a)).
Environmental impact assessments	In Africa, infrastructure projects and international aid programmes are increasingly assessed by means of environmental impact assessments. Indeed, many African countries have either enabling legislation or specific regulations on environmental impact assessments in place. However, while this process has influenced decisions in some countries, most such assessments have been disregarded. A review conducted in African countries has shown that impact assessments are most influential when results are quantified and expressed in economic terms (ECA, 2005).
Environmental audits	Environmental audits are particularly useful in Africa in identifying options for intervention (e.g. for energy efficiency improvements). Further, these audits prevent the deterioration of natural capital, ensuring compliance with the agreed project design and implementation process. As early as 2004, the Government of South Africa published guidelines for the implementation of environmental audits across sectors, covering safety, health, environment and quality auditing (South Africa, 2004).

[1] In some cases, feasibility studies can also be applied to social, cultural and environmental assessment.
[2] http://eadp.westerncape.gov.za/news/national-strategic-environmental-assessment-sea.

Governance assessment	
Governance assessments	Governance assessments have been used extensively in African countries as a means to assess the performance of governments in reaching stated policy goals, as well as the effectiveness of civil society organizations and NGOs.[3] In particular, forest governance assessments are being conducted for evaluating the viability of the REDD+ process in African countries (Samuel, 2010). ECA has also developed the African Governance Index to assess progress in key governance dimensions in African countries. The Ibrahim Index of African Governance covers governance outcomes, such as participation and human rights (ECA, 2015g).
Integrated assessment	
Decision support systems	An example of decision support systems applied to green economy policymaking in Africa is the Green Economy Tourism System, a tool that allows decision makers in the sustainable tourism sector to access relevant data and knowledge and to project potential policy outcomes with a system-dynamics-based simulation interface. The system has already been tested in Sharm el Sheikh, Egypt, to help hotel owners in assessing the economic (i.e. energy bill), social (i.e. visitors' goodwill) and environmental impacts of deploying renewable energy technologies in hotel facilities (Law and others, 2012).

Tools	
Indicators and measurement frameworks	
UNEP green economy indicators	With the help of relevant indicators, UNEP provides technical and substantive support to African governments for the assessment of green economy strategies and policies. For example, the green economy indicators framework was used to develop the green economy assessment study of South Africa. The indicators were used to identify the drivers and consequences of unsustainable production and consumption in relation to natural resources, agriculture, energy and transport, and to guide the analysis of potential green economy policy interventions (UNEP, 2013).
Input production and output indicators	Input, production and output indicators are extensively used to assess development planning processes in African countries. In Kenya, for example, a number of key indicators related to natural capital and the environment were selected for conducting a green economy assessment study. These included, among others (UNEP, 2014): wetland area (hectares); freshwater endowment (cubic metres per capita); biodiversity (number of plant, bird and mammal species); forest cover (percentage of total land); electricity consumption (TWh); carbon dioxide emissions (Mt of CO2); combustible renewables and waste (percentage of total energy); and energy production (Kt of oil equivalent).
Global Green Economy Index	The 2014 edition of the Index covered 12 African countries (Burkina Faso, Ethiopia, Ghana, Kenya, Mauritius, Morocco, Mozambique, Rwanda, Senegal, South Africa, United Republic of Tanzania and Zambia). Its customization makes it possible to highlight the potential to improve performance at the country and city levels, with targeted interventions.
ECA sustainable development indicators	The ECA sustainable development indicators provided a framework for the integrated assessment of the economic, social and environmental dimensions of sustainable development, as well as governance aspects, in the first part of the Sustainable Development Report on Africa series, which covers all African countries. The indicator framework can be built on to provide a framework for inclusive green economy assessment in Africa. Gabon and Tunisia have developed national sustainable development indicator sets (ECA, 2015 (b); (c)) and (g).
System of National Accounts and Social Accounting Matrix	The System of National Accounts provides the basis for the construction of the Social Accounting Matrix. Social Accounting Matrices have been used for assessing sectoral government policies in several African countries (e.g. Botswana, South Africa, Zambia and Zimbabwe). In Zambia, for example, a social accounting matrix was developed to support the analysis of agricultural investment, including considerations on the environmental impacts of such policy decisions (Nokkala, 2000). African countries placed priority on the implementation of the 2008 System of National Accounts as an effective tool for assessing national policies. To accelerate this process, the African Group on National Accounts has created a regional implementation strategy and a five-year regional project (2012-2017) (AfDB and others, 2012).

[3] UNDP, "Africa Forum on Civil Society and Governance Assessments". Available from http://www.undp.org/content/dam/undp/documents/partners/civil_society/additional_documents/Africa%20Forum%20on%20Civil%20Society%20and%20Governance%20Assessments/Africa%20Regional%20Civil%20Society%20and%20Governance%20Workshop%20-%2028%20September.pdf

System of Environmental-Economic Accounting (SEEA)	In order to implement the SEEA approach to the measurement of national economic performance, it necessary to establish common criteria for the economic valuation of natural capital and ecosystem services. Several initiatives have been launched in this respect, including the World-Bank-led Wealth Accounting and Valuation of Ecosystem Services (WAVES) partnership and the Economics of Ecosystems and Biodiversity initiative. African countries have taken steps towards the integration of natural wealth into national accounts. For example, a project under the partnership was launched in Botswana in 2012, focusing on water accounts, land and ecosystems accounts, mineral and energy accounts, and macroeconomic indicators of sustainable development (Botswana, 2012). In Mauritius, the Ecosystem Natural Capital Accounts initiative aims to provide a coherent framework for the integration of natural wealth into the System of National Accounts by using the SEEA, an international standard adopted by the United Nations Statistical Division in 2012. UNEP (2013) also has used the SEEA as an analytical/methodological framework to guide integrated environmental assessment for the African Environment Outlook 3 under the theme "Our environment, our health".
Vulnerabiity indicators	Vulnerability indicators, in the context of small island developing States, have been implemented in the Comoros, Madagascar, Mauritius, Seychelles and Zanzibar. Economic vulnerability is considered as intrinsic to these States, mostly owing to the small domestic market, rendering them heavily dependent on external economic conditions. The same applies to environmental vulnerability, due to their small size and their extensive reliance on the environment, while adapting to climate conditions. Therefore, for such States and many other countries, reducing vulnerability is a key goal of inclusive green economy interventions, in addition to increasing inclusiveness and equity for a more sustainable future.
Ecological footprint	The ecological footprint as a resource accounting tool could be useful to several African countries, and can be applied to value chains and the private sector. Ecological footprints could gain visibility with the implementation of inclusive green economy interventions that internalize externalities and put an economic value on natural resources. Examples of existing work include reports prepared by the Global Footprint Network, which in 2009 covered 24 African countries (Global Footprint Network, 2009). Tools and online platforms for assessing human demands on the environment are emerging (see for instance www.footprintnetwork.org).
Policy/project assessment tools	
Ecosystem services valuation	The valuation of ecosystem services is increasingly considered a key tool for assessing the environmental impact of development plans and investment projects in African countries. For example the InVEST model (Integrated valuation of ecosystem services and trade-offs) was used for the mapping of key ecosystem services in the Eastern Arc Mountains of the United Republic of Tanzania, and made it possible to understand the relation between ecosystem health and social well-being. In particular, the tool allowed the creation of a series of maps using field-based or remotely sourced data. Further, socioeconomic scenarios were included as an additional layer on ecosystems maps in order to assess potential impacts of alternative IGE policy options (Fisher and others, 2011).
Cost-benefit analysis	Cost -benefit analysis methodologies are widely used in African countries to assess policy options. An example of an application to the analysis of green economy investment is the study conducted by Afari-Sefa and Gokowski on Rainforest-Alliance-certified cocoa in Ghana. The study considered key indicators such as labour quantity and costs, physical input costs, net annual return and expenditure during production and harvest seasons. The study's results showed that a shift to certified cocoa in Ghana would lead to 30 per cent lower yields in the short term. However, the benefit of a 25-per-cent increase in yield following certification training would exceed the costs of certification (Afari-Sefa & Gockowski, 2010).
Life cycle assessment	Life cycle assessment methods are increasingly adopted in Africa to analyse the impacts of production and consumption, and raise awareness of the need to maximize resource efficiency while improving the competitiveness of African products on regional and global markets. Furthermore, some sustainability certification programmes (e.g. "EcoStandard EcoProduct South Africa") adopt life cycle assessment methods for the evaluation of African products (e.g. building products).[4]

[4] http://www.ecolabelindex.com/ecolabel/ecoproduct-south-africa.

Scenario creation tools and methodologies (qualitative)	
Causal-loop diagrams	Causal-loop diagrams have been used in several African countries to support multi-stakeholder policymaking processes in the context of inclusive green economy planning. For example, causal-loop diagrams were used to identify key indicators and causal relations to be included in the Mauritius Green Economy Model, a dynamic simulation model that projected policy outcomes in the agriculture, energy, waste and water management sectors.
Delphi analysis and Scenario Analysis System	The Delphi technique was used in a study conducted in South Africa for the prioritization of the key factors that need to be taken into account when selecting the most sustainable and inclusive energy technologies. A number of energy experts responded anonymously to questionnaires, providing relevant insights to decision makers in the problem identification phase of the policy cycle. Key factors identified included: the ease of maintenance and support over the life cycle of the technology; the identification of suitable sites readily available for pilot studies; and the need to secure access to suitable sites (Barry, Steyn and Brent, 2009).
Decision tree	Decision trees can be used to facilitate multi-stakeholder discussions during green economic planning processes. They are particularly effective in supporting the preliminary assessment of alternative policy options, without relying on more complex assessment tools, which would require a higher level of technical expertise.
Scenario forecasting tools and methodologies (quantitative)	
Spatial planning tools	The IDRISI land change modeller is used under the United Nations REDD programme to model baseline land cover changes and to predict future scenarios, including the impact of forest management projects on natural habitat, biodiversity and carbon dioxide emissions. This tool has been used in several African countries that are eligible for REDD projects, such as Madagascar.[5]
CGE	Computable general equilibrium (CGE) model frameworks are used to assess the potential implications of green economy policies in African countries. For example, the effects of introducing a carbon tax in South Africa have been analysed with the help of a dynamic CGE model. The study revealed that a phased-in carbon tax that reaches US$ 30 per ton of carbon dioxide by 2022 would achieve the emission reduction targets, but would have adverse effects on welfare and employment (Alton and others, 2012). A key limitation of the CGE model used in this study is that the socioeconomic benefits of reducing carbon dioxide emissions were not taken into account.
Energy optimization models	Energy optimization models are used at the regional, national and local levels to support energy supply planning processes in Africa. In South Africa, for example, the Markal model helped investigate the optimal configuration of the energy system. The study provided specific recommendations on the development of South Africa's renewable energy potential to achieve national emissions targets while ensuring a sustainable energy supply (Hughes and others, 2007).
Nested models	Coupled models have the potential to address the specific planning needs of African countries in their path towards a green economy. In particular, the combination of spatially disaggregated tools and integrated dynamic simulation models may support planning efforts in countries that have national development visions and local goals and targets. In these cases, nested models could be used to identify synergies and complementarities between policy interventions at different levels, and to identify potential unintended consequences (such as duplication and local impacts of national policies). Examples of nested models used for IGE assessments are the Integrated Model for Sustainable Land and Economic Planning and the Integrated Model for Climate Mitigation and Adaptation, customized simulation models that aim to explicitly represent causal relations, feedback, non-linearity and delays between the changing quantity and quality of ecosystem services. They also represent socioeconomic indicators (e.g. jobs, revenues and multiplier effects) that make it possible to link macroeconomic analyses to the spatial planning context.[6]

[5] http://www.redd-gis.org/2012/03/redd-deforestation-modeling-video.html
[6] http://www.ke-srl.com/KnowlEdge_Srl/Models.html

Integrated models	Integrated models have been extensively used in African countries to support the policy formulation and assessment phases. The Threshold 21 model[7] (Millennium Institute, 2005) is customized to Kenya (UNEP, 2014) and is being customized for Ethiopia (ECA, 2015j). It has been used extensively by some African countries with UNDP and UNEP support (Malawi, Mozambique and Tunisia). It is a system dynamic model for quantitative and transparent assessment of multisectoral impacts of policy change. It harnesses the strengths of other tools, such as the scenario analysis system and CGE models. Ethiopia and Kenya are the latest countries to develop customized Threshold 21 models. The Kenya Threshold 21 model is fully integrated in a single framework by the complex interactions between economic, social and environmental dimensions of sustainable development. It also integrates analyses of risks of climate change across major sectors. It informs integrated national development policies and sustainable development planning, poverty eradication and social well-being within the context of Vision 2030. The South African Green Economy Model is another example of an integrated model used for the assessment of inclusive green economy policies. This model, which is based on a system dynamics modelling approach, was developed to explore the green economy transition for South Africa, with special attention given to the ability to meet targets relating to low-carbon growth, resource efficiency and pro-job development in the nine core sectors prioritized to support a green economy for South Africa (UNEP, 2013). Another example is the application of the Green Economy Model[8] for the assessment of green economy policies in Mauritius (Bassi, Deenapanray and Davidsen, 2014) and Mozambique, focusing on the agriculture, forests, energy, water and waste sectors.

[7] UNEP also used the Threshold 21 model to assess the outcomes of green economy investment in its flagship report titled Towards a Green Economy. *Pathways to Sustainable Development and Poverty Eradication* (2011). However, the model created for this study is global (that is to say it is not disaggregated by country). See also Millennium Institute (2010) for more details on the Threshold 21 world model.

[8] http://www.ke-srl.com/KnowlEdge_Srl/Models.html

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Annex II: List of participants at the ad hoc expert group meeting held in November 2015 to review the draft report

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