

# Achieving Sustainable Development in Africa through Inclusive Green Growth

Agriculture, Ecosystems, Energy,  
Industry and Trade

*The Sustainable Development  
Report on Africa*

**Fifth Edition**





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# Abbreviations and acronyms

AfDB	African Development Bank
AMCEN	African Ministerial Conference on the Environment
APRM	African Peer Review Mechanism
ARSCP	African Roundtable on Sustainable Consumption and Production
AU	African Union
AUC	African Union Commission
CDM	Clean Development Mechanism
CSD	Commission on Sustainable Development
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GNI	Gross National Income
ICT	Information and Communication Technology
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
NEPAD	New Partnership for Africa's Development
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
SCP	Sustainable Consumption and Production
SDRA	Sustainable Development Report on Africa
UNCSD	United Nations Conference on Sustainable Development
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization

WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wide Fund for Nature



# Overview

The Sustainable Development Report on Africa (SDRA) is a medium for monitoring and assessing progress towards sustainable development. The theme of the fifth issue (SDRA-V) is “Achieving sustainable development in Africa through inclusive green growth”. The theme is considered to be of particular significance for Africa, given its implications for the region’s transformation and sustainable development. The report is a joint publication of the Economic Commission for Africa (ECA), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization (UNIDO) and the United Nations Development Programme (UNDP).

Part I of the report documents progress towards sustainable development in Africa. In this regard, the report uses the “pressure-response-effect-mitigation” framework to assess trends in 16 priority thematic areas and 98 indicators. The assessment reveals that Africa continues to show gradual improvements in governance, but significant challenges remain in public administration, integrated policymaking and the capacity to respond to the complex and interlinked challenges of sustainable development. The report notes that although there has been unprecedented economic growth over the past decade, this has not translated into significant poverty reduction. Mixed results have been recorded for sustainable consumption and production, gender equality and empowerment of women, as well as harnessing renewable energy resources. The assessment also shows that Africa is not on track to achieving the millennium development goal target of halving the number of people living in extreme poverty by 2015. Worse still, income inequality persists. However, the region is making steady progress in improving access to education. The progress made in health is evidenced by rising life expectancy, although the region still faces some of the world’s most dramat-

ic health crises. Other sectors that have witnessed marked growth include agriculture and food production. Food security and nutrition, however, remain precarious for many communities. Threats to Africa’s natural resources persist due to the extractive and primary nature of the main economic sectors and exposure to forces such as climate change, which have exacerbated the effects of natural disasters. The report highlights that Africa continues to rely on both domestic and external resources to support its development, with the share of the former increasing recently. Improved governance, stronger accountability and multi-stakeholder engagement in funding, technology development and transfer, as well as capacity-building, will remain crucial for the realization of sustainable development in Africa.

In Part II, the report documents trends, good practices, challenges and opportunities for promoting inclusive green growth in selected sectors, namely: agriculture; ecosystems goods and services; energy; industry; and trade. It also explores enabling measures that could spur inclusive green growth and drive the transition to inclusive green economy in Africa. In the agriculture sector, for instance, the potential for inclusive green economy lies in fast tracking the application of science and technology to address the causes of low crop production, including limited application of sustainable practices. There is also a growing recognition of the role of ecosystems goods and services in advancing inclusive green growth. In this regard, the report points to the vast potential for harnessing ecosystems goods and services to spur inclusive green growth and achieve sustainable development in Africa. Inclusive green growth-related principles and approaches are increasingly being integrated into various facets of energy production and deployment, including energy efficiency and demand side management, renewable energy deployment, availing adequate modern

energy to various economic sectors and addressing cross-sectoral issues. Despite this notable progress, the existing energy production capacity in Africa has not kept pace with the growing energy demand. In the industry sector, the report showcases good practices and notes that inclusive green growth presents a unique opportunity to bring multiple and integrated solutions to the numerous challenges facing the industrial sector in Africa. This form of growth, together with the renewed drive to accelerate the structural transformation of African economies, supported by the various industrial development frameworks, can provide the much needed push to increase and sustain productivity, ensure productive employment, job security, income and wealth generation, as well as shared prosperity. On trade, the report also discusses trends, showcases good

practices and highlights the policy interventions that can promote this form of growth.

The report concludes that inclusive green growth and the transition to a green economy require an optimal combination of measures to boost growth through increased productivity, value addition and competitiveness; generate social benefits with decent jobs, improved livelihoods and welfare; and enhance natural capital and environmental resilience. These measures include an institutional framework for integration, coherence and inclusion; an appropriate mix of policy instruments; policy measures to complement market-based instruments; international and regional cooperation; targeted public spending and investment in pro-poor sectors; and strategic capacity development.

# 1. Introduction

## The Sustainable Development Report on Africa

The Sustainable Development Report on Africa is produced jointly by the Economic Commission for Africa (ECA) and its partner institutions. It serves as a medium for monitoring and assessing progress on sustainable development, and for engagement on topical issues, relevant to the region's development aspirations. Four issues of SDRA have so far been produced. The first issue of the report was produced under the theme "Managing land-based resources for sustainable development". The theme of the second issue was "Five-year review of the implementation of the World summit on sustainable development outcomes in Africa (WSSD+5)". The theme of the third one was "Sustainable Consumption and production for sustainable growth and poverty reduction", and the fourth, "Managing Africa's natural resource base for sustainable growth and development".

This fifth issue, produced under the theme "Achieving sustainable development in Africa through inclusive green growth", is a joint publication of ECA, FAO, UNEP, UNIDO and UNDP. The report explores a theme that has special significance for Africa – inclusive green growth-given its implications for the region's transformation and sustainable development.

SDRA-V is expected to enhance awareness and appreciation among policy makers of a need for balanced integration of the three dimensions of sustainable development (economic, social and environmental) in the development and implementation of policies, strategies and programmes. It examines the challenges and opportunities for inclusive green growth in selected sectors of the economy, in which targeted investments with accompanying enabling measures could spur inclusive green growth that would contribute to

transformative objectives and sustainable development. The report is targeted at African countries, regional and subregional organizations, major groups and all development partners.

## Inclusive green growth: a vehicle towards sustainable development

The high dependence of Africa's economies on natural resources means that there will be sustained and increased pressure on these resources. Minerals, forests, land, water and marine resources must therefore be harnessed sustainably. The increased demand for resources and infrastructure, particularly energy and transport for industrial development, should be decoupled from social inequalities, environmental degradation and climate change, which are already posing serious limitations to growth. An inclusive green growth approach employs green economy principles to realize optimal economic, social and environmental outcomes from targeted interventions in key sectors of the economy.

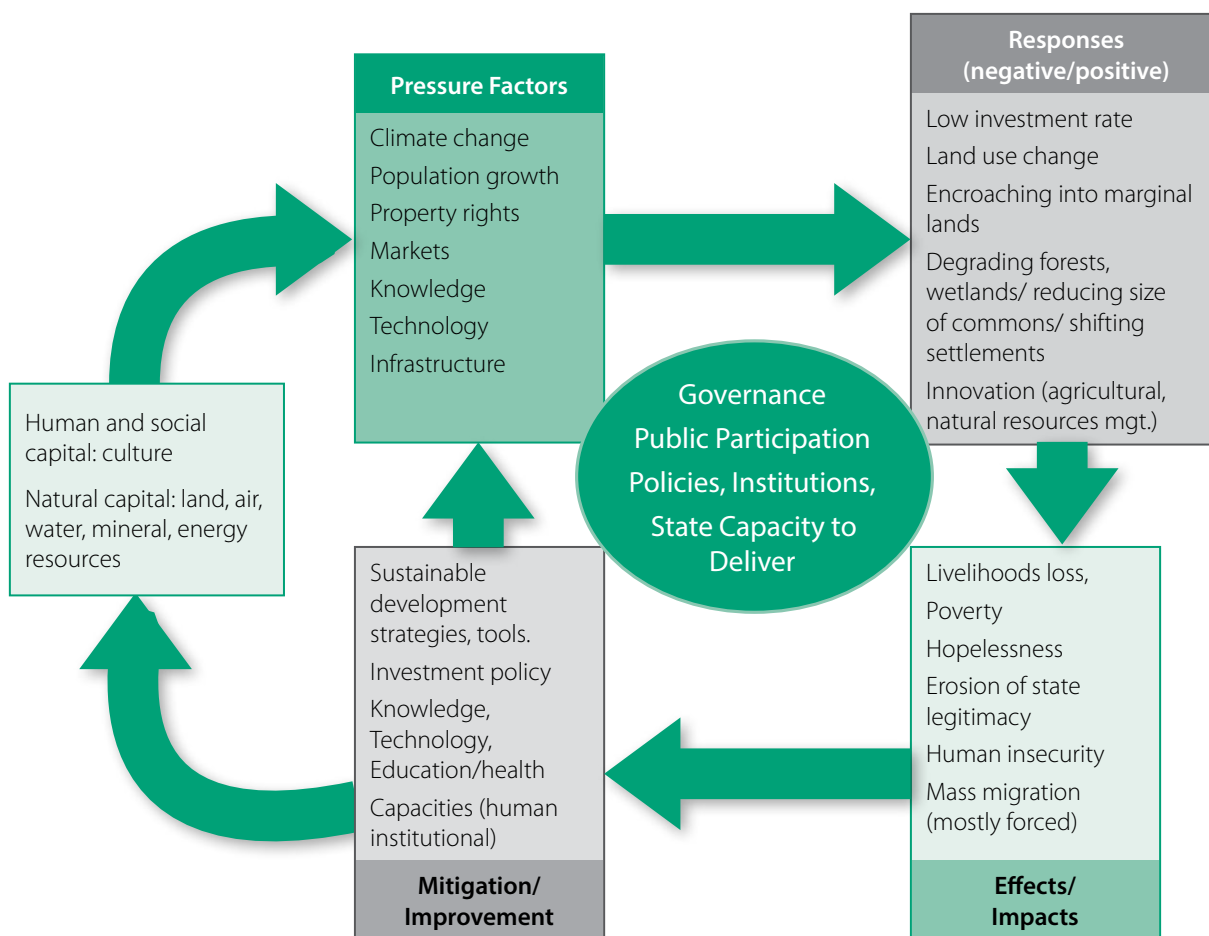
Green economy in the context of sustainable development and poverty eradication was one of the themes that the United Nations Conference on Sustainable Development (Rio+20) focused on. African countries, in their common position on the objective and themes of Rio+20, recognized that the transition to a green economy could offer new opportunities to advance the achievement of sustainable development objectives through employment creation, economic growth and poverty eradication, while underlining the need for the green economy to be rooted in national objectives. Inclusive green growth holds promise for accelerating structural transformation in Africa and the need to showcase good practices in selected sectors of the economy, from which countries can learn.

Inclusive green growth deliberately seeks to reduce poverty and inequality within the framework of environmentally sustainable growth (World Bank, 2012c; UNDESA, 2012). SDRA-V defines inclusive green growth as “economic growth that is inclusive, creates jobs, improves human welfare (including poverty reduction), is resource efficient, enhances environmental assets, thus contributing to sustainable development”. An inclusive green growth approach provides an opportunity for an equitable and sustainable transformation in Africa. Inclusivity and the maintenance of environmental integrity are central to the successful implementation of this transformation agenda.

## Methodology and analytical framework

Part I of SDRA-V provides an indicator tracking of progress towards sustainable development. The indicator set was developed, following a series of consultative meetings with stakeholders including member States, experts and partner organizations. The assessment is based on 16 priority thematic areas and 98 indicators. The assessment adopted the same analytical framework that was used in SDRA-IV, the “pressure-response-effect-mitigation” framework (figure 1), which assumes that in high natural resource-dependent economies, “the manner in which people use and manage natural resources for livelihoods is influenced by pressure factors, such as climate change, population growth, property rights, mar-

**Figure 1: Pressure-response-effect-mitigation conceptual framework for indicator definition and sustainable development assessment**



Source: ECA 2013 (SDRA-IV)

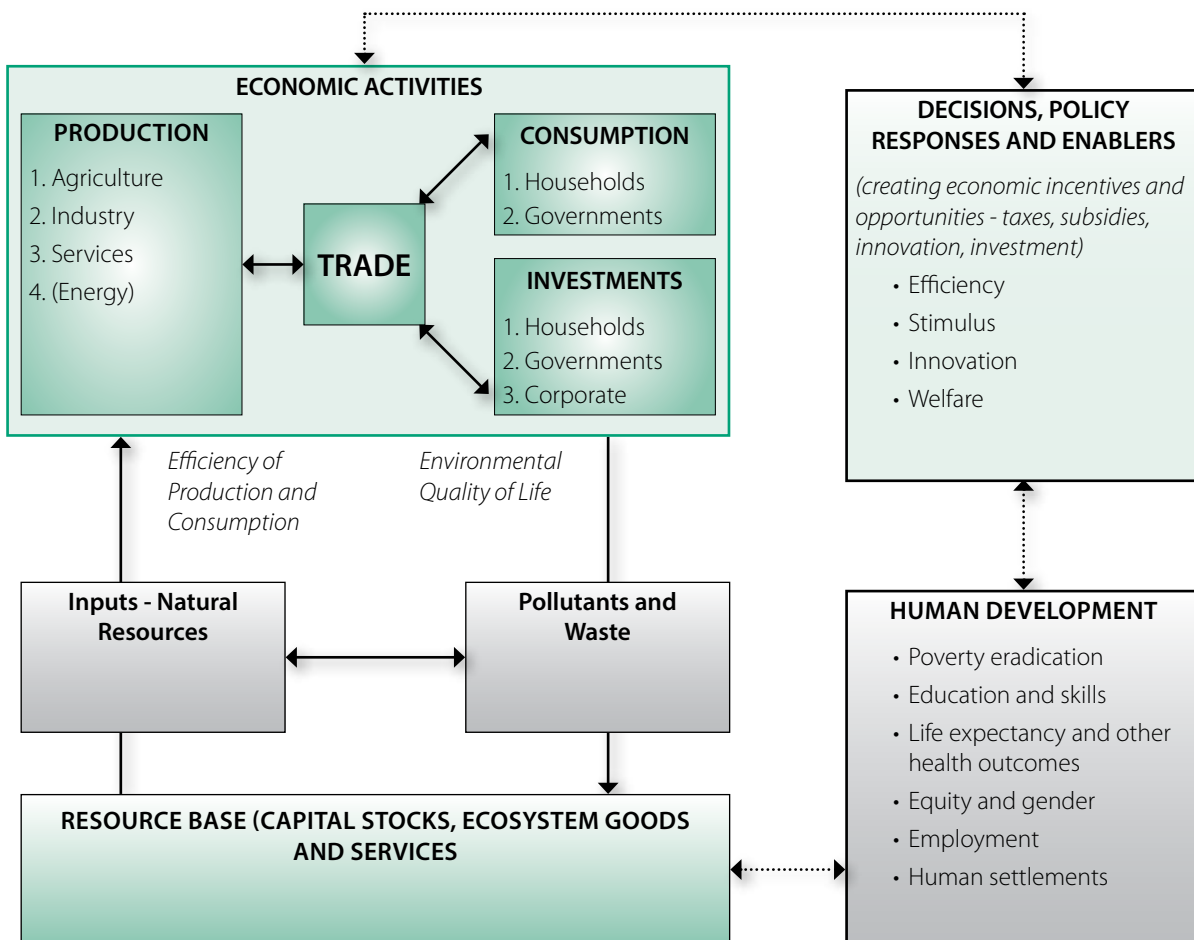
kets, knowledge, technology and infrastructure (both economic and social)" (ECA 2013).

The framework underpins sustainable development progress and its assessment, through a systematic process of identifying, defining and composing the indicators, then applying an integrated assessment. A number of green growth-related indicators were included in the indicator set. The assessment used data from various secondary sources to ensure the appropriate comparison of trends across different subregions, and where relevant, specific national level examples were presented. Primary data were also gathered from 13 pilot countries.

The various thematic chapters in Part II of the present report were prepared with leadership from partner agencies, as follows FAO, for agri-

culture; UNEP, for ecosystems goods and services; UNIDO, for energy and industry; ECA, for trade; and UNDP, for enabling measures. The assessment in Part II was guided by an analytical framework that assumed that the economic, social and environmental goals for the sustainable management of resources in all sectors were intertwined (figure 2). Activities in agriculture, industry, trade and energy are supported by environmental goods and services and largely controlled by an enabling environment that facilitates sustainable transformation and development through inclusive green growth. These inextricable interlinkages dictate the choices we make and the outcomes of our production and consumption activities.

**Figure 2: Analytical framework for part II of the report**



Source: Constructed at the SDRA review meeting in November 2013, with adaptations from GGGI, OECD, UNEP and the World Bank (2013 and OECD 2011)



# **Part I: Assessing the state and trends towards sustainable development in Africa**

## 2. State and trends towards sustainable development

### Key messages

- **Progress in governance in Africa has been mixed.** While countries have made appreciable progress in establishing democratic governance systems, concerns about insecurity remain. The post-2015 development agenda and the Rio+20 follow-up processes provide opportunities for revamping sustainable development governance at all levels.
- **While Africa continues to record robust economic growth, this has not translated into tangible sustainable development outcomes.** Stepping up inclusive green growth approaches, ensuring support for a vibrant private sector and adopting innovations in information and communication technology (ICT) offer the potential for harnessing the benefits of economic growth.
- **Progress towards sustainable consumption and production (SCP) has shown mixed results.** Through the actions of Governments and other stakeholders, sustainable consumption and production practices are gradually being adopted. To increase the pace towards SCP, more coherent policy frameworks and improved implementation of existing ones are needed.
- **Although progress has been made in energy infrastructure and source diversity, the region continues to suffer from energy insecurity.** Options for more progress include increasing investment in the energy supply infrastructure, for clean energy sources, especially, and propelling regional integration to create economies of scale and reduce costs of generation and distribution.
- **Progress towards poverty eradication in Africa has been slow, and the continent is not on track to achieving the Millennium Development Goal (MDG) of halving the number of people living in extreme poverty by 2015.** Addressing poverty in all its dimensions in Africa will require institutional and governance reforms that enhance the accountability of the State, raise the quality of service delivery, and improve the overall economic and social environment, including in education, health, energy and housing.
- **Africa's population is projected to reach the 1.6 billion mark in 2030, with steady increases in the age of the working population and urbanization, a high dependency ratio and increased pressure on natural resources.** The emerging opportunity from the benefits of the demographic dividend can be exploited for rapid economic growth, if the right policies and social and economic investments are made.
- **Gender equality and women's empowerment have seen gradual improvement, although the challenge is still real.** The percentage of parliamentary seats held by women is increasing in all subregions of Africa, while gender parity in primary, secondary and tertiary education has improved over the past 10 years. Attention should be paid to the gender wage gap and ownership of land and access to credit by women. Countries must take measures to generate greater economic opportunities for women and young people by creating conditions that enhance their participation in decision-making and sustainable development.
- **Africa's performance in the education sector has been improving.** Public and private investment in education has increased, resulting in higher primary and secondary completion rates. Literacy rates have improved, although gender parity at tertiary levels and in adult education programmes is still of concern. The gains made in education should be consolidated to ensure that there is a critical mass of educated and skilled people to innovate for sustainable development.



- **Africa has made steady progress in health.** Improvements have been recorded in life expectancy at birth, reduced maternal and under-five mortality, and decline in the prevalence of key diseases, such as malaria, HIV/AIDS and tuberculosis. The progress is attributed to improved health care, immunization coverage, education, preventative measures and treatment. There is a need to further strengthen the fragile health systems through enhanced public and private investments.
- **Although agricultural productivity is increasing, food security remains precarious.** The food production index has increased in most countries in Africa. Food insecurity may worsen, as the population doubles by 2050. Sustainable intensification and wider adoption of improved technologies will spur agricultural transformation. Greening agriculture should help curb the risks associated with agricultural intensification. Also the sector must take advantage of opportunities for climate change mitigation and adaptation.
- **Progress in the sustainable management of Africa's natural resource base has been mixed.** The rate of forest cover loss has declined, although overall change in forest cover remains insignificant. Many people live on degraded land. There is pressure on the continent's water resources and biological diversity, with the number of threatened species increasing. There are inclusive green growth opportunities for natural resource management, use efficiency and conservation.
- **Climate change impacts on Africa are exacerbating the challenges in natural resource management and overall sustainable development.** Africa's greenhouse gas emissions are still relatively low. There are opportunities for both adaptation and mitigation efforts in all sectors. More countries are implementing their national adaptation programmes of action, while others have developed nationally appropriate mitigation actions in a sustainable development context. Active pursuit of low-carbon development trajectories will minimize greenhouse gas emissions and contribute to inclusive green growth and the achievement of sustainable development.
- **Severity and frequency of natural disasters is increasing.** The human and economic losses due to disasters are increasing. More countries have established national platforms for disaster risk reduction and preparedness, but capacity issues continue to constrain preparedness and response measures. Disaster management must be made a priority to avoid decades of setback in development gains and secure a sound sustainable development pathway.
- **Progress regarding means of implementation has been mixed.** In many countries, the percentage of the budget from domestic resources is increasing. There has been a steady increase in remittances received. The net official development assistance as a percentage of Gross National Income (GNI) is declining in relation to the rest of the world, but remains higher on average. Foreign direct investments, especially those targeting environmental goods and services, are declining. Expenditure on research and development continues to be low, while the increase in patents in environmentally related technologies is still insignificant. Coherence in policies, coupled with an innovative mix of the various means of implementation, will ensure the successful implementation of sustainable development initiatives.

## 2.1 Governance

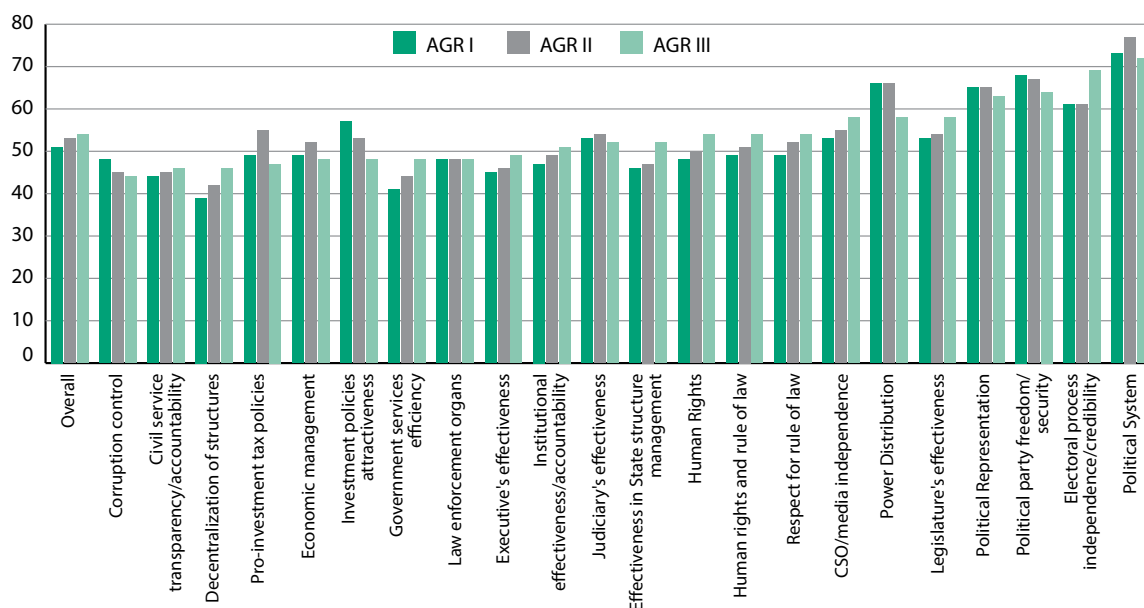
Good governance, backed by strong institutional structures, policy processes and regulations, and the rule of law, which support resource use, economic growth and poverty eradication, leads to desirable sustainable development results. SDRA-V tracks the quality of governance, using trends in corruption control, political stability and absence of violence/terrorism, regulatory quality, government effectiveness, rule of law and number of active conflicts. The participation of coun-

tries in the African Peer Review Mechanism is also used to gauge their governance performance.

Africa continues to register gradual improvements in governance. The region is slowly but steadily strengthening its institutions and governance mechanisms to further economic, social and environmental development. Significant challenges remain with consolidation of gains in public administration, creation of integrated policymaking and capacity to respond to the complex and interlinked challenges of sustainable

Indicator	Sustainability trend	Remarks on trend
African Governance Index	↔	Marginal positive change in AGI, and little progress on political governance and institutional reforms
Peace and security	↔	Although many countries remained stable, conflicts escalated in several countries in North, Central and Eastern Africa, and terrorism continues to gain ground
Political governance	↔	Mixed trends. Improvement in public administration, but corruption, transparency, accountability and capacity challenges persist
Business governance	↔	Mixed trends for business regulatory environment ratings in the various subregions
Environmental governance	↗	Countries are steadily implementing commitments in the Rio Conventions and have taken various measures to improve natural resource governance
Governance for sustainable development	↔	Steady progress is being made on governance for sustainable development at the regional and subregional levels, but more needs to be done at the national level

**Figure 3: Comparison of survey results in AGR I, AGR II and AGR III on key governance indicators**



Source: ECA (2013). African Governance Report III

development. Peace and security are still causing concern, as conflicts have continued in some countries, while new ones have emerged, especially in Central, West and North Africa. Threats of terrorism continue to create uncertainty in some countries. Commitments on environmental governance, embodied in the three Rio conventions are being implemented, but capacity challenges









persist. Steady progress is being made in governance for sustainable development at the regional and subregional levels, but more needs to be done at the national level. The post-2015 development agenda and Rio+20 follow-up processes provide opportunities for revamping sustainable development governance at all levels.

## 2.2 Economic transformation and macroeconomy

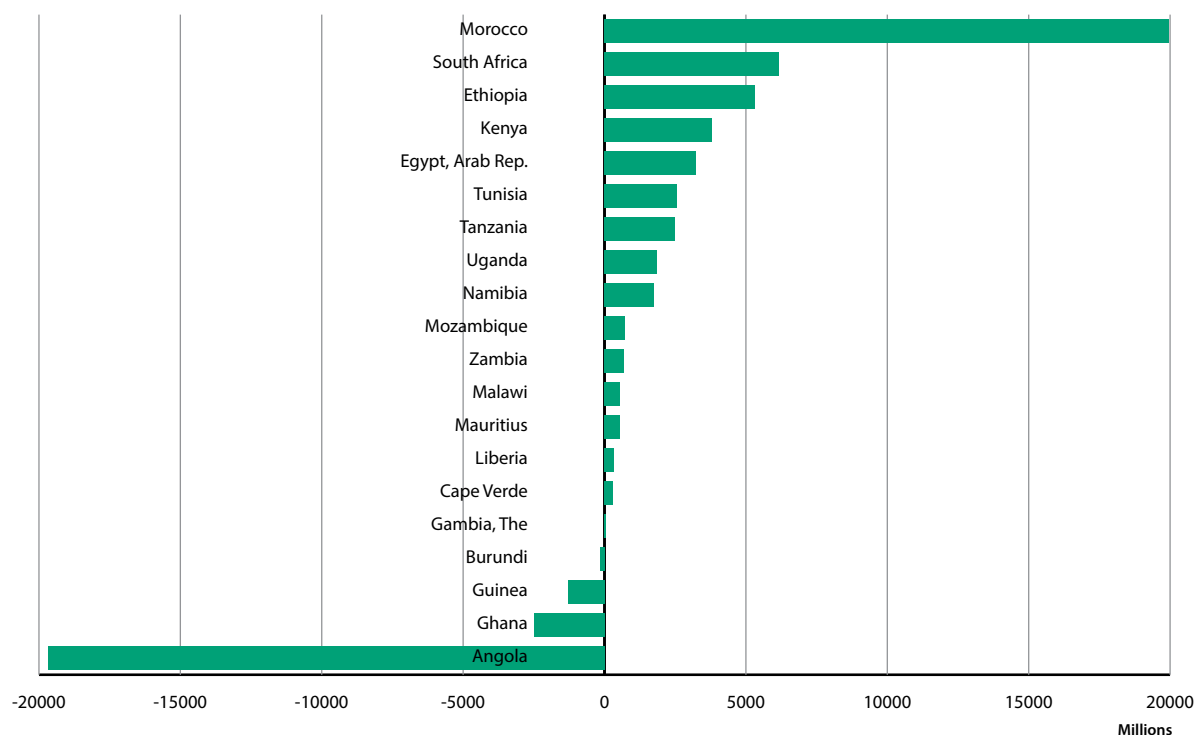
Africa is steadily emerging as a major player in the global economic arena. The continent has registered unprecedented economic growth over the past decade, as reported in the 2013 and 2014 Economic Report on Africa. Adjusted net savings and other economic transformation indicators hold promise for greater progress in overall economic transformation. Mixed trends are being recorded in: trade and market access; share of manufacturing exports in total exports; share of agricultural exports in total exports; value addition in agriculture; manufacturing and services; financial status and sustainable public finance; and employment and information and communication.

Although there is promise for more robust economic growth, trends in adjusted net savings

and other indicators of macroeconomic change have shown mixed results and minimal or negative changes. No significant changes have been reported on trade and market access or financial status (sustainable public finance). While the share of agricultural exports in total exports has been rising, value addition in manufacturing, agriculture and the service sectors continues to decline. While the outlook for Africa's economic transformation is positive, domestic and external risks and the problem of youth unemployment persist, owing to over reliance on agriculture and other nature-based sectors, without much value addition and employment generating opportunities. Stepping up inclusive green growth approaches, supporting a vibrant private sector and adopting ICT innovations are potential areas of focus for harnessing the positive aspects of economic growth.

Indicator	Sustainability trend	Remarks on trend
Adjusted net savings		Mixed results with continuous negative trends in many countries
Trade and market access		Mixed results – vary significantly across countries and subregions Balance of trade in goods and services has been rising, but remains negative
Shares of manufacturing exports in total exports		Has been on a declining trend
Shares of agricultural exports in total exports		Increased exports of largely unprocessed agricultural products
Value addition		Has been on a declining trend
Financial status/Sustainable public finance		Mixed results in overall status of public finance. GDP is increasing in most countries, debt sustainability shows mixed results and fiscal balance is generally negative
Employment		Employment to population ratio is rising steadily, but youth unemployment worsening
Information and communication		Great strides made in ICT application for development with mobile and internet penetration improving over the last decade

**Figure 4: Adjusted net savings, excluding particulate emission damage (current US\$) in 2011**



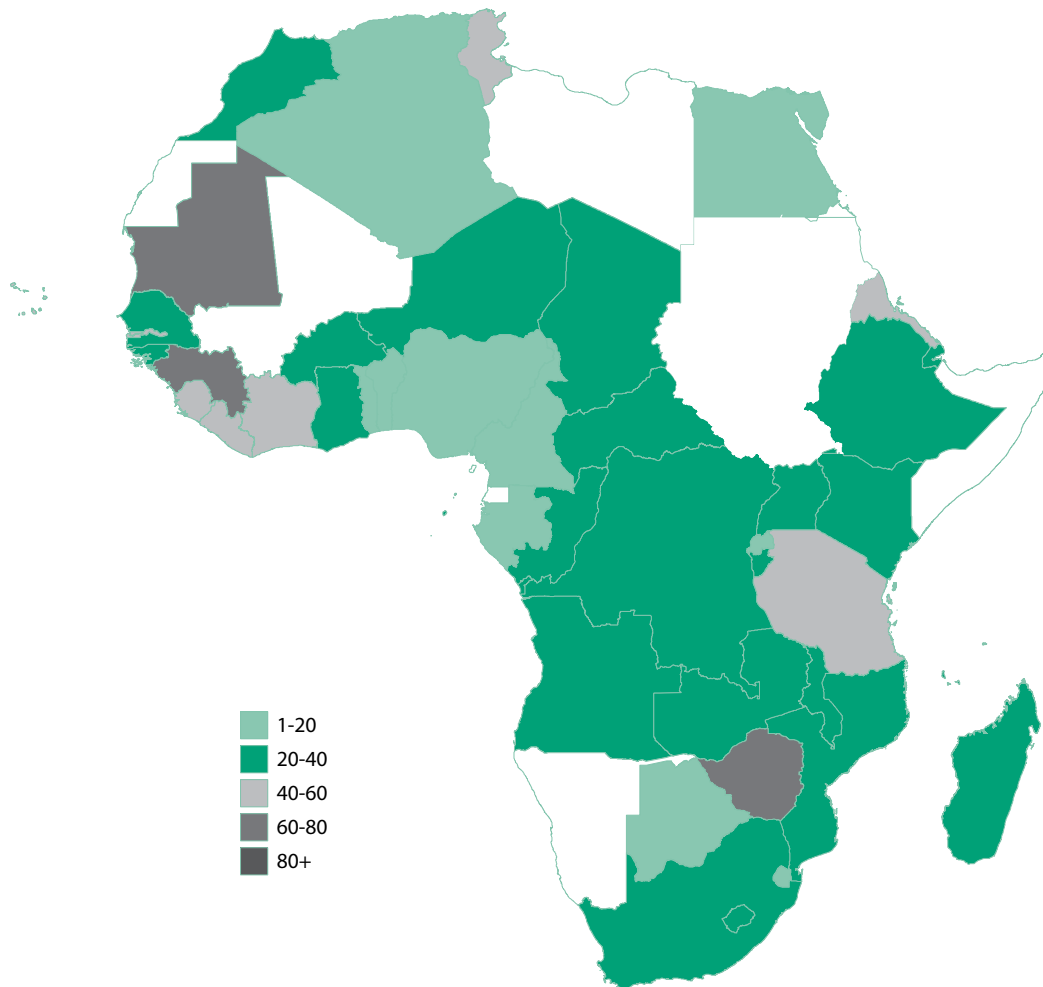
*Data source:* World Bank, Data, Adjusted net savings, excluding particulate emission damage (current US\$). Available from <http://data.worldbank.org/indicator/NY.ADJ.SVNX.CD>.

**Table 1: GDP growth (%) in Africa**

Subregion	2011	2012(e)	2013(p)	2014(p)
Africa	3.5	6.6	4.8	5.3
Central Africa	5.2	5.7	5.7	5.4
Eastern Africa	6.3	4.5	5.2	5.6
North Africa	-0.1	9.5	3.9	4.3
Southern Africa	4.0	3.7	4.1	4.6
West Africa	6.8	6.6	6.7	7.4
Oil-exporting countries	2.8	8.7	5.2	5.6
Oil-importing countries	4.3	3.9	4.3	4.8
Africa excluding Libya	4.3	4.2	4.5	5.2

*Note:* (e) estimates; (p) projections.

*Source:* Statistics Department, AfDB and AfDB, OECD, UNDP and ECA (2012).

**Figure 5: Distribution of external debt stocks (% of GNI) of countries in Africa**

*Data source:* World Bank. Data. External debt stocks (% of GNI) Available from <http://data.worldbank.org/indicator/DT.DOD.DECT.GN.ZS>. Accessed Nov 21, 2012

## 2.3 Sustainable consumption and production

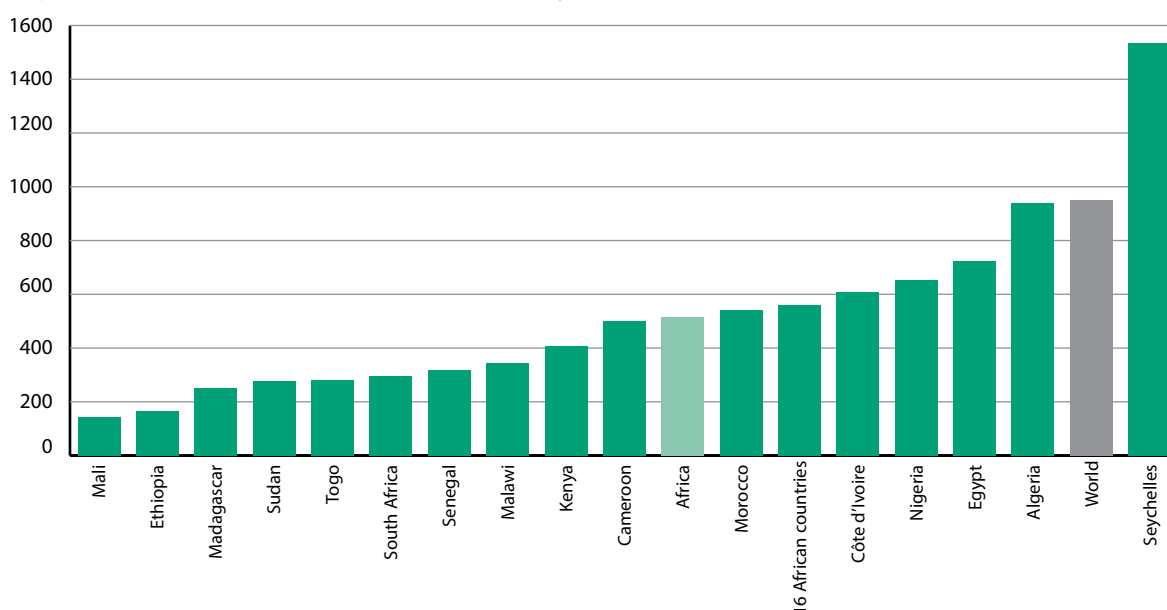
Over the past decade, some progress has been made towards sustainable consumption and production, which as a concept and practice, is important for realizing inclusive green growth and sustainable development. Gains made are as a result of action by African Governments and a wide range of other stakeholders, which complement other global initiatives such as the Marrakech Process, launched in 2003, in response to the call of the World Summit on Sustainable Development. African countries are engaging stakeholders through the region's 10-year framework of programmes on SCP. Initiatives underway include the adoption and implementation of national SCP

policies and action plans, capacity-building, training and design and use of SCP tools in different sectors such as tourism, building and construction, procurement, education and lifestyles. Stakeholders are also producing and disseminating communication and awareness products.

Progress towards achieving sustainable consumption and production is mixed. Resource productivity remains low and the slight improvements in production trends have been offset by a decline in sustainable consumption, due to the unsustainable consumption patterns of a growing affluent middle class. This emerging phenomenon is threatening environmental integrity, with the increased production of waste and increasing demand for environmentally sensitive goods and services. The progress that continues to be reg-

Indicator	Sustainability trend	Remarks on trend
Resource productivity	↔	Slight increase in decoupling the unsustainable use of natural resources and economic growth, but the level of resource/material productivity remains low
Consumption pattern	↘	Declining trends due to unsustainable consumption patterns from an increasingly affluent middle class.
Production pattern	↗	Efforts by government, communities and the private sector in improving environmental and social accountability of production processes
Pollution intensity	↗	Green gashouse emissions declined between 2002 and 2009 and governments are intensifying awareness campaigns on pollution reduction in all sectors.
Sustainable transport	↔	There is an increase in infrastructural development, but many challenges remain, including poor transport governance, poor connectivity and road safety issues.

**Figure 6: Resource/Material productivity in 2008**



**Data source:** UNCTAD (2012) Resource use and resource efficiency in Africa: A pilot study on trends over the past 28 years. Written by Dittrich M and Giljum S, Lugschitz B, Polzin C and Lutter S from the Sustainable Europe Research Institute (SERI) of Vienna. Paper commissioned by UNCTAD. Geneva.

istered in sustainable production is attributed to efforts by Governments, communities and the private sector to improve the social and environmental accountability of production processes. Pollution intensity shows an appreciable improvement, with greenhouse gas emissions declining from 2002 to 2009, as Governments intensify campaigns and awareness on pollution reduction in all sectors. Sustainable transportation remains an

area of concern. Although there has been an increase in infrastructural development, many challenges remain with regard to road fatalities, poor transport governance, connectivity and increasing greenhouse gas emissions from cars. To increase the pace towards sustainable consumption and production, Governments must introduce more coherent policy frameworks that tackle both the supply and demand side of natural resource use,

and improve the implementation and enforcement of existing policies. Achieving sustainable consumption and production requires action and responsibility across sectors, and urgent action should be taken for capacity-building.

## 2.4 Energy

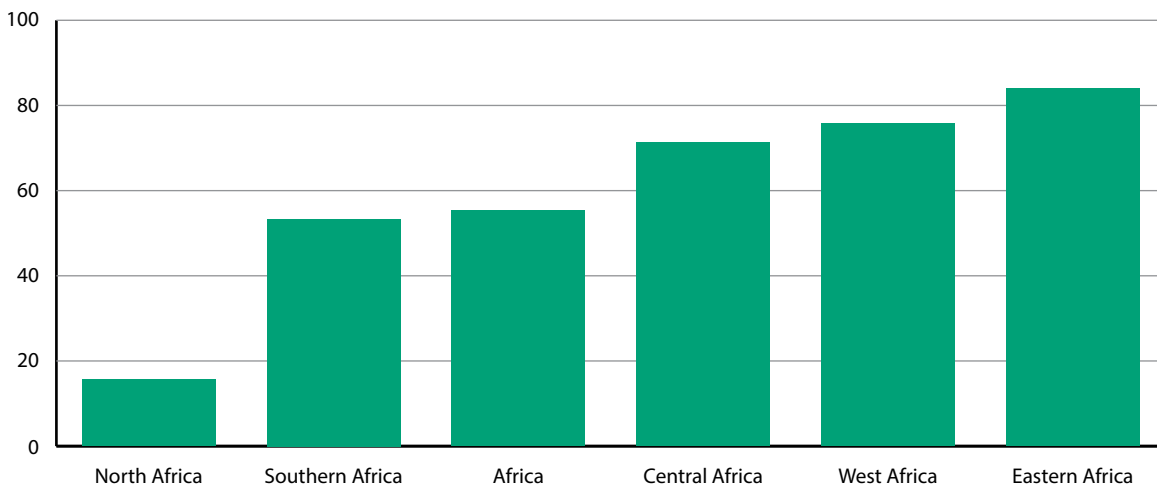
Clean energy sources are a primary requirement for inclusive green growth, while access to modern energy services is an important driver of economic growth and social development (IEA, 2012; UNEP 2012). The provision of basic services such

as health, education and water are supported by modern energy sources. Renewable and modern forms of energy also enhance productivity and living standards, environmental protection and climate change mitigation and adaptation. Harnessing the region’s renewable energy potential provides an opportunity to realize inclusive green growth outcomes.

The energy sector has improved overall, as measured by the substantial infrastructural development and diversity of energy sources, as well as investments from local and external sources. Despite the abundant energy resource potential of

Indicator	Sustainability trend	Remarks on trend
Renewable versus non-renewable total primary energy supply mix	↔	Increase in the use of renewable energy generally across the continent as investments increase, but share of fossil fuels in total energy had not changed between 2002 and 2010
Energy security	↓	Increase in energy imports in many countries continues to undermine energy security
Energy intensity	↔	Varying trends in energy consumed per unit output
Sustainability of energy sources	↗	Increase in renewables in several countries
Energy prices	↓	Insufficient generation capacity, among other factors, keeps the average electricity tariff higher than global average

**Figure 7: Share of renewable energy in total primary energy supply (%) in 2009**



Economic Commission for Africa subregional grouping

Data source: OECD Development Centre based on IEA (2009)

the region, many countries are yet to create a conducive environment to attract investments for the development of the sector. This is further complicated by the small size of Africa's energy systems and markets, which make it difficult to establish profitable business ventures. There is a general increase, albeit low, in the use of renewable energy sources, as more countries increase investment in and access to solar, wind and hydropower. Energy security remains a challenge, as energy imports rely less and less on local production, with a net increase in energy imports in many countries. There were varying trends in energy consumed per unit of output, and the share of fossil fuels in total energy remained the same from 2002 to 2010. Africa's energy prices remain high. Insufficient generation capacity keeps the average electricity tariff higher than the global average, owing to the high cost of production and low investments. Much remains to be done to further develop the energy sector in Africa.

## 2.5 Poverty

Poverty is both a measure and a determinant of sustainable development. Despite the robust economic growth for more than a decade, poverty

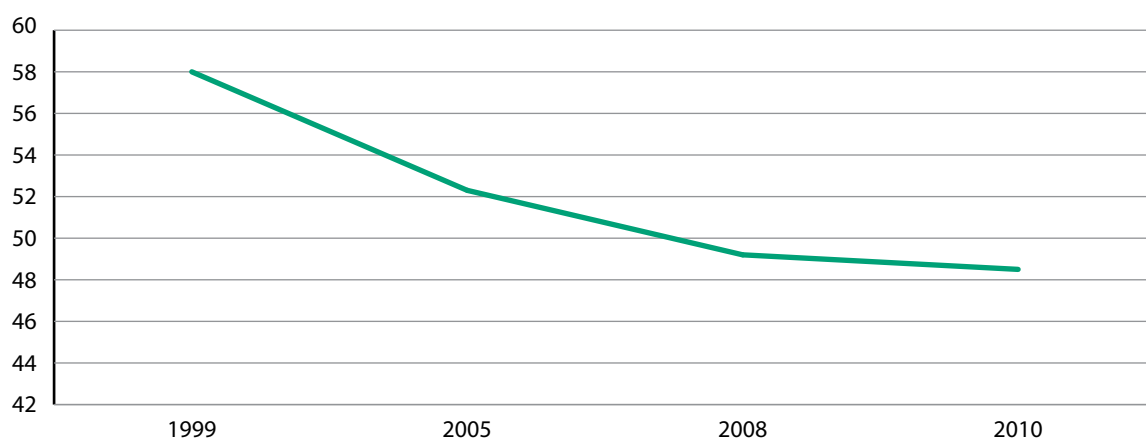
eradication in Africa is slow. The recent impressive growth in African countries has reduced poverty only marginally (ECA, 2012), while income inequality, access to improved water and sanitation services, access to electricity and modern energy services and access to decent housing continue to stagnate.

In 2010, 330 million people in Africa (excluding North Africa) lacked access to clean water, and nearly 590 million lacked access to proper sanitation facilities. People living in rural areas continue to be disproportionately underserved, with only 23 per cent of the rural population of sub-Saharan Africa having access to proper sanitation in 2010 (ECA, AU, AfDB and UNDP 2013).

Africa is not on track towards achieving the MDG of halving the number of people living in extreme poverty by 2015. Income inequality persists, with the poor and vulnerable still unable to access opportunities for poverty eradication. Although the proportion of the population served with improved water increased by 16 per cent from 1990 to 2008, Africa remains the most deprived region in terms of access. Disparities between rural and urban areas continue to exist. Despite the great endowment of the continent with both fossil fu-

Indicator	Sustainability trend	Remarks on trend
Poverty- proportion of people living below \$1.25 per day		Improvement on this indicator, but at least 50 per cent of the population in sub-Saharan Africa still lives below \$1.25 a day
Income inequality		Income inequality persists with the poor and vulnerable still unable to access opportunities for poverty eradication
Access to water and sanitation		Although the proportion of the population served with improved water has increased, Africa remains the most deprived region, and disparities between rural and urban areas persist
Access to electricity and modern energy services		Access to electricity continues to be low despite the continent's great endowment of fossil fuels and renewable resources
Access to decent housing		The proportion of urban population living in slums has declined although the absolute numbers continue to grow



**Figure 8: Proportion (%) of the population living below \$1.25 a day in Africa (excluding North Africa)**

Data source: (United Nations, 2013) The MDG report 2013

**Table 2: Selected countries in sub-Saharan Africa that have performed above the regional average in terms of the proportion of their 2010 population that gained access to improved drinking water sources since 1995**

Country	Population in 2010 (millions)	Water supply coverage in 2010 (%)	Population that gained access to improved sources of drinking water since 1995	Millennium Development Goals progress	Proportion of 2010 population that gained access to improved drinking water sources since 1995 (%)
Malawi	14.9	83	7.2	on track	48.4
Burkina Faso	16.5	79	7.5	on track	45.5
Liberia	4.0	73	1.7	on track	42.8
Ghana	24.4	86	10.3	on track	42.3
Namibia	2.3	93	0.9	on track	40.6
Gambia	1.7	89	0.7	on track	37.7
Rwanda	10.6	65	3.3	not on track	30.7
Sierra Leone	5.9	55	1.6	not on track	27.0
Togo	6.0	61	1.6	not on track	26.1
Sub-Saharan Africa	856	61	221	not on track	25.8

Source: UNICEF (2012). Progress on drinking water and sanitation: An update. <http://www.unicef.org/media/files/JMPreport2012.pdf>

els and renewable resources, energy poverty is still rife in the region, with 650 million people having no access to electricity (IEA 2012). Today, some 25 countries in sub-Saharan Africa have perpetual crises or frequent power blackouts. The region continues to be predominantly energy poor with an increasing reliance on biomass and fossil fuels, as primary sources of energy for cooking and lighting by the poor in rural areas.

The proportion of the urban population living in slums has declined, although absolute numbers continue to grow. The limited progress made in eradicating poverty in Africa calls for more institutional and governance reforms that enhance the accountability of the State, raise the quality of service delivery, and improve the overall economic and social environment. Building capacity to manage economic shocks such as food, fuel, or financial crises, and natural and climate change-related disasters would contribute significantly to eradicating extreme poverty. Enhancing innovation for productivity and sustainability in all sectors will boost such efforts and open up opportunities for inclusive green growth and sustainable economic transformation.




## 2.6 Demographic changes

Over the past decade, the demographic trends for rural and urban areas and subregions have been mixed. Demographic changes are important drivers of sustainable development and have direct

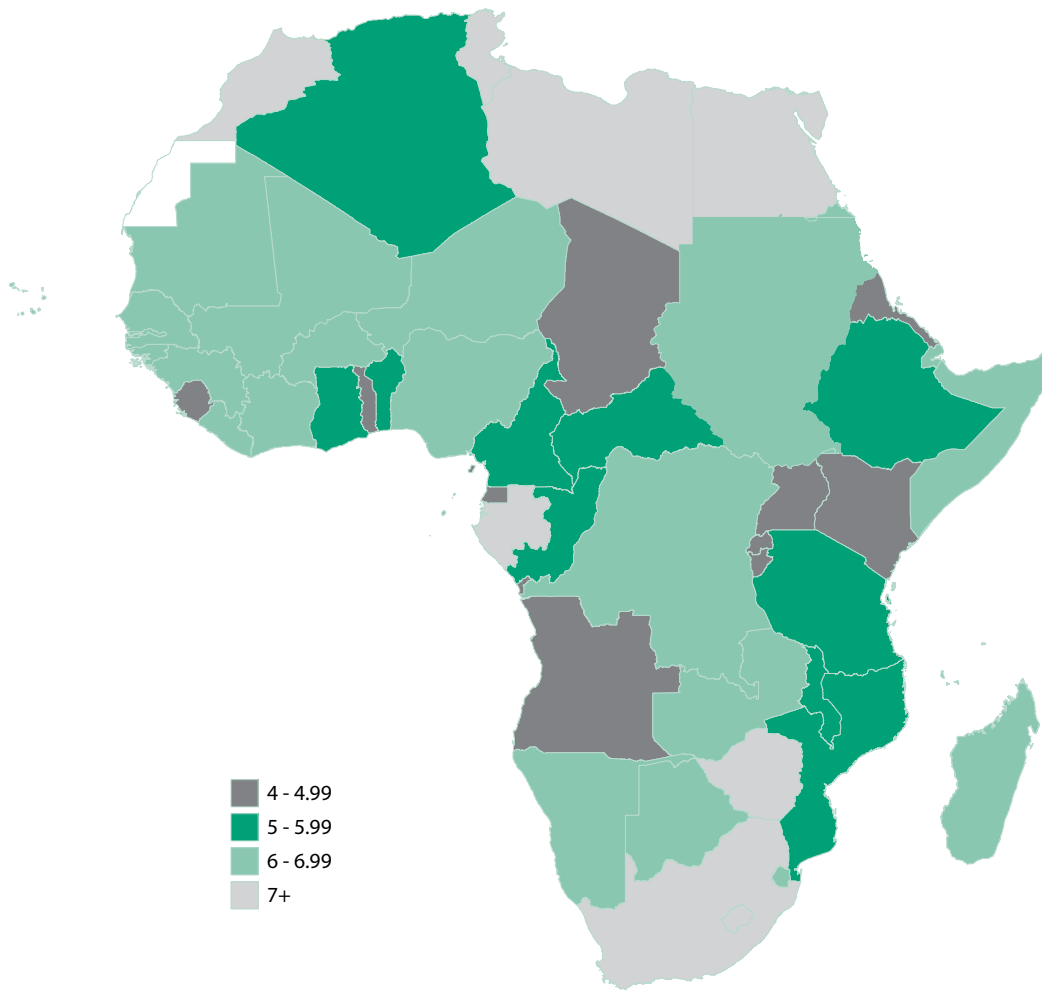
implications for inclusive green growth (UNDESA, 2013). Africa has witnessed significant changes in the population structure, owing to increases in the dependency ratio, absolute population and urbanization. Urbanization and population growth rates have however declined by 2011. Sustainable development must include efforts to counter the negative impacts of the burgeoning population on economic, social and environmental development imperatives.

Population growth is occurring more rapidly in Africa than in other regions of the world, thereby increasing vulnerability to climate change impacts and undermining sustainable development efforts. Indeed, most sub-Saharan development policies note that the region’s rapid population growth inhibits efforts to eradicate poverty, ensure food security, preserve the environment and improve the well-being of Africans.

The changing population structure provides an opportunity to leverage the benefits arising from the demographic dividend. The demographic dividend is the accelerated economic growth that may result from a rapid decline in a country’s fertility, and the subsequent change in the population age structure (UNDESA 2011). The emerging trends in fertility rate decline will create a scenario in which fewer births and a growing working-age population reduce the dependency ratio. This opportunity can be exploited for rapid economic growth if the right policies are put in place, and appropriate social and economic investments are

Indicator	Sustainability trend	Remarks on trend
Demographic changes: age dependency ratio		The proportion of age-dependent population is rising due to higher unemployment levels among young people
Population growth		The population of Africa continues to rise in absolute terms, but the population growth rates are declining. However, there are significant variations among subregions and even among countries within the same subregion
Human settlement: urbanization		Although the rate of urbanization is generally declining, the urban population in Africa continues to rise and is expected to reach a 50 per cent urbanization rate in 2035

**Figure 9: Proportion of dependents per 100 working-age population during the period 2002-2011**

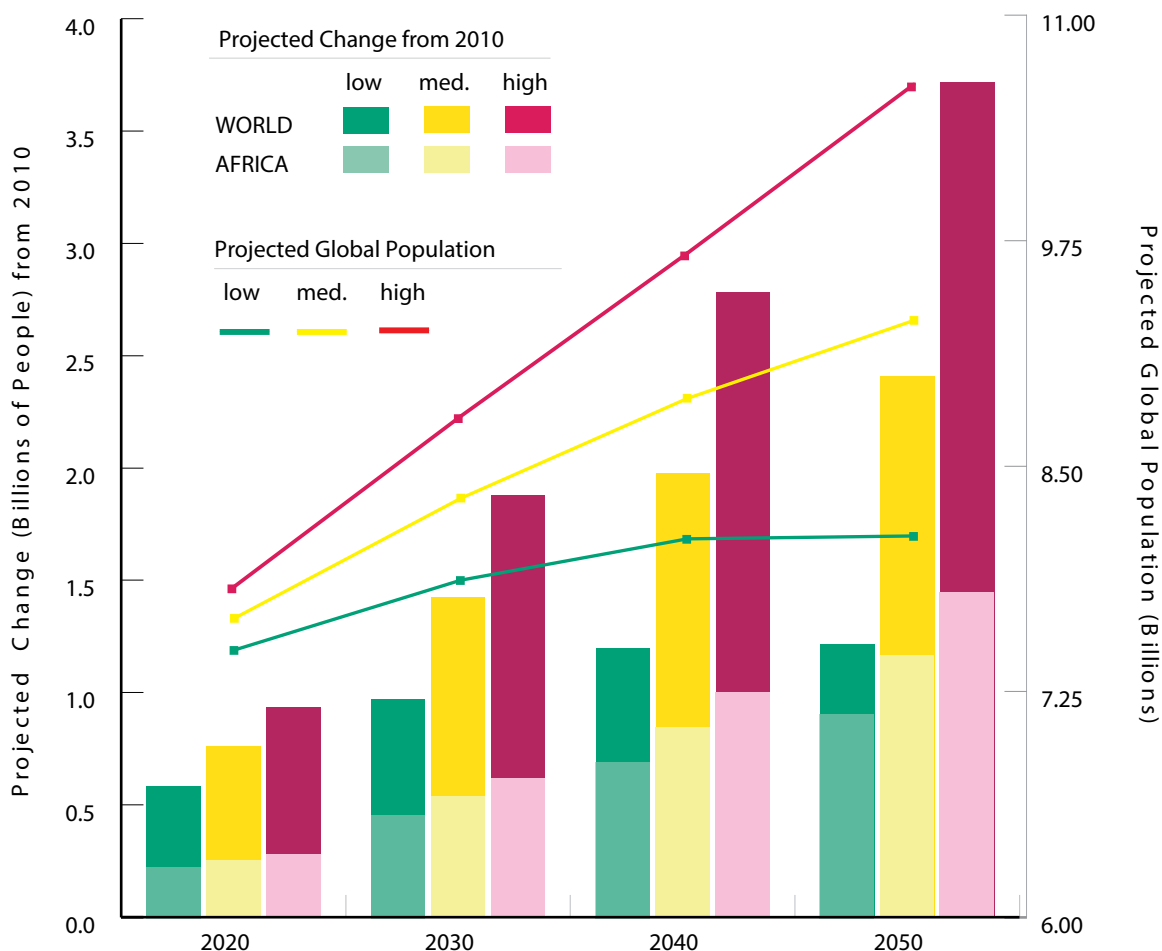


*Data source:* World Bank. Data. Agriculture and rural development. Available from <http://data.worldbank.org/indicator/SP.POP.DPND.OL> 2013.

made. Lessons can be learned from Asia and Latin America, where countries have responded to similar challenges by improving health and education, attracting foreign investments, and enacting economic policies that have spurred job creation and resulted in accelerated economic growth, in

other words, the demographic dividend. In addition, efforts are needed to sustain the dividend, so as to motivate people and countries to accumulate greater wealth and increase investments in human capital.

**Figure 10: Projected population growth in Africa, 2010-2050**



Population growth is occurring more rapidly in Africa than in other regions of the world. As such, this is increasing vulnerability to climate change impacts and undermining sustainable development efforts in the region. Indeed, most sub-Saharan development policy statements note that the subregion’s rapid population growth inhibits efforts to eradicate poverty, ensure food security, preserve the environment, and improve well-being.

*Source:* Created using data from UN Population Division 2011 and UNDESA 2013

## 2.7 Gender

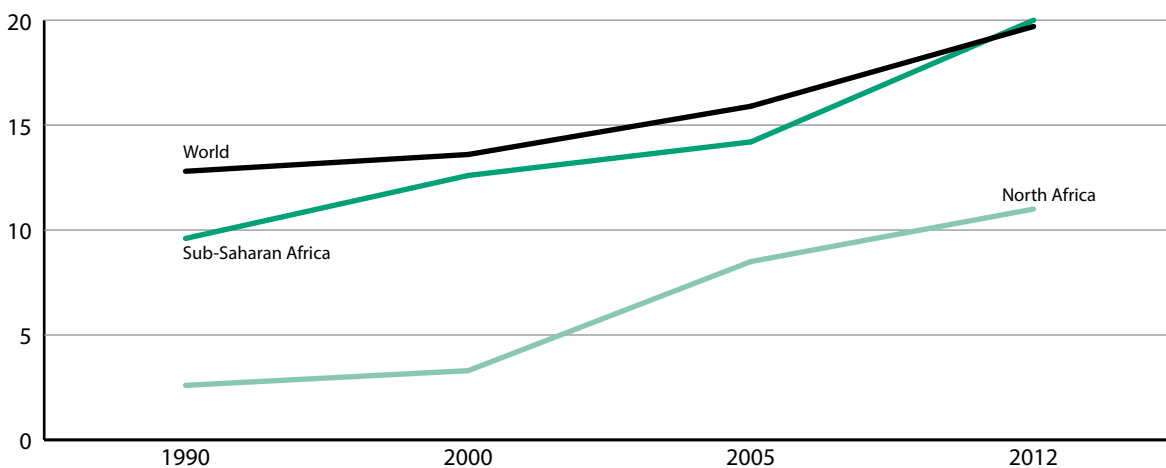
Gender equality affects sustainable development outcomes in all sectors. Gender considerations present an opportunity to focus on people-centred development that prioritizes the expansion of capabilities, the eradication of poverty and the reduction of all types of inequalities, and promotes the rights of all gender groups, especially women and young people. Progress has been made on gender equality and the empowerment of women, the share of parliamentary seats held by women, and the share of women in non-agricultural wage employment. However, no significant progress has been made in closing the glob-

al gender pay gap. Change in access by women to land has been insignificant. Access by women to credit, especially in microcredit programmes, has improved in a few countries.

Despite this progress, achieving gender equality in Africa remains a challenge. Significant gaps between rhetorical commitment to gender equity and actual actions still pervade the policy and development arena. Many African countries still rank low on the Gender-related Development Index (UNDP, 2012a). This has elevated the extent of social inclusion both for women and young people in development processes. Countries must work at generating greater economic opportunities for

Indicator	Sustainability trend	Remarks on trend
African gender and development index	↔	Mixed results with progress in awareness but persisting gender inequalities in employment, education, access to resources as well as formal and informal political representation
Percentage of parliamentary seats held by women	↔	There has been an increase in parliamentary seats held by women in all regions between 2002 and 2012, but female representation is still low
Proportion of women in non-agricultural wage employment	↔	Women's share in wage employment in the non-agricultural sectors increased in sub-Saharan Africa, but was mostly unchanged in North Africa
Gender gap in payment of earnings	↔	No significant progress has been made in closing the gender pay gap for more than a decade
Women ownership of land	↔	Women's ownership of land is slowly increasing, but still low compared to men
Access to credit facilities	↔	Women's access to formal credit sources remains very low, but an increase in microcredit schemes for poor women through non-governmental organizations and community-based organizations

**Figure 11: Percentage of parliamentary seats occupied by women**



Data source: United Nations (2012).The MDG Report

women and young people by creating conditions for them to take greater control of their lives, and enhancing their participation and decision-making. Continued improvement in education for women and young people would help them expand their horizon. This would also enhance the health and fertility outcomes of women and children. Strategic policies to improve incomes for women and young people must take gender differences within households and cultural practices into account. Also important are political and social reforms that enhance women’s human rights,

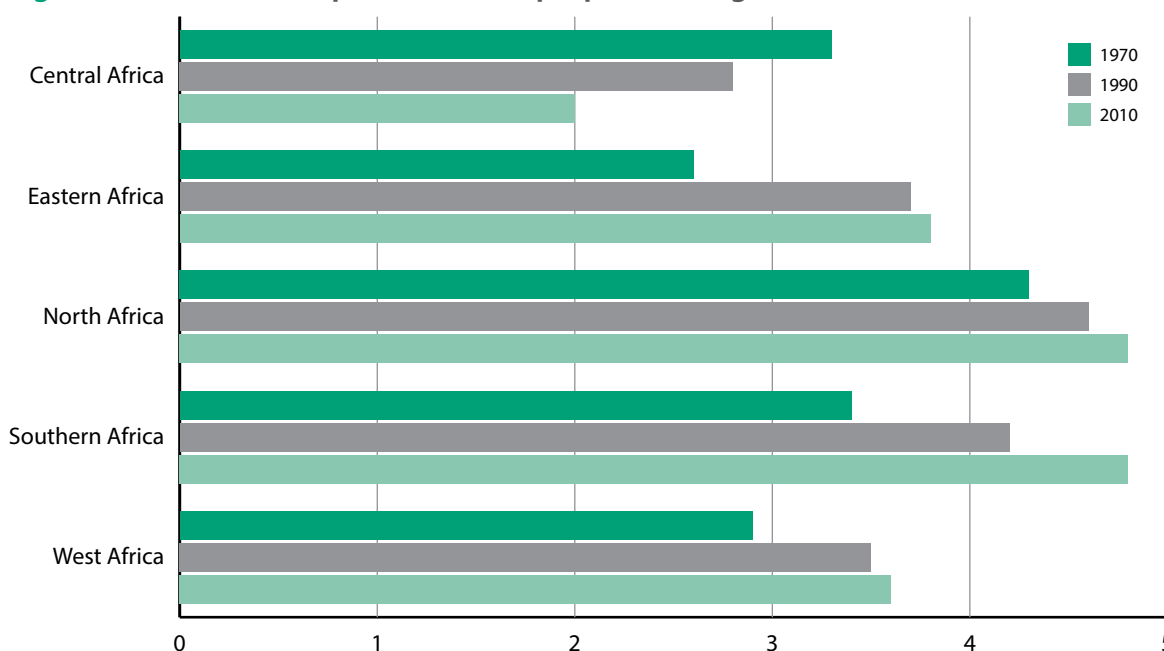
including freedom, dignity, participation, autonomy and collective action.

## 2.8 Education

Africa continues to make progress in improving access to education. Education is important to enhancing the capacity for sustainable development. Current levels of numeracy and literacy skills are insufficient to meet demands for the rapidly advancing and diversifying economies (Gauci

Indicator	Sustainability trend	Remarks on trend
Expenditure in education	↗	Increasing level of public and private expenditure on education per capita
Education level	↗	Enhanced primary completion rate, as more pupils starting grade 1 reach the last grade of primary schooling
Literacy	↗	Generally positive trend in literacy levels as access to education improves in the region
Gender parity in education	↔	Progress made in both primary and secondary education, but much remains to be done to ensure parity at tertiary levels

**Figure 12: Education expenditure as a proportion of gross national income (%)**



Source: African Economic Outlook 2013

and Tsafack-Temah(2011). It is necessary for human capital to keep pace with economic growth, to supply the much needed human resource, and bridge the technology and innovation divide to ensure growth and development in the region. There has been marked progress in meeting education targets, although clear outcomes remain to be consolidated.

Public and private expenditure on education per capita is rising. A higher proportion of pupils starting grade 1 reached the last grade of primary school, indicating improved primary completion rates. The adult literacy rate is also improving, with better access to education facilities in the region. This stems from programmes such as universal

primary and secondary education and provision of subsidies and incentives at different levels. A better gender parity index is being recorded in most subregions and countries. Achieving sustainable development, including the capacity to innovate, depends on a critical mass of educated and skilled people; hence the need to consolidate gains made in the education sector.

## 2.9 Health

Human health is both a determinant and an outcome of sustainable development interventions. Health has direct linkages with production and consumption of safe foods. Respecting ecological

Indicator/theme	Sustainability trends	Remarks on trend
Life expectancy at birth, by gender	↗	Rising due to general improvement in health, awareness and reduction in early deaths from HIV&AIDS
Morbidity/health status and risk	↗	Declining incidences/prevalence of tuberculosis, HIV/AIDS and malaria
Mortality (under 5)	↗	Significant reduction in under 5 mortality and death of pregnant mothers due to improving health care, immunization and prevention and treatment
Prevention and treatment	↗	Increased access by populations to preventive and treatment services due to increasing coverage and access to medical facilities and personnel
Atmosphere/air quality	↗	Declining incidences of air pollution related health problems due to increased awareness and prevention
Public expenditure on health per capita	↔	Low, but improving health sector investment level

**Figure 13: Life expectancy at birth for females (left) and males (right)**



**Source:** World Health Organization, Global Health Observatory Map Gallery. Available from <http://gamapserver.who.int/mapLibrary/app/searchResults.aspx>.

limits and maintenance of environmental quality also offer human health outcomes. Investment in health programmes for the work force will enhance labour productivity. Developments in all areas, including pollution-free transport systems, climate-proof housing and settlements, safe drinking water from sustainable water resources, clean energy for all and putting health at the heart of strategies ensure broad public benefits, particularly for the poor and vulnerable (WHO 2013). Appreciable progress has been made in various facets of human health in Africa.

Despite steady progress in health, Africa is facing the world’s most dramatic public health crisis (WHO 2014). The WHO (2014) report indicates

that HIV/AIDS continues to devastate the region, which has 11 per cent of the world’s population, but 60 per cent of people with HIV/AIDS. Additionally, more than 90 per cent of the estimated 300 million–500 million malaria cases that occur worldwide every year are in Africa, mainly in children under the age of five, although most countries are implementing better treatment policies. Most African countries are making good progress unpreventable childhood illness, including polio and measles, through increased immunization coverage. Some hurdles still remain, including the high rate of maternal and new born mortality and the strain on African health systems from life-threatening communicable diseases, coupled with increasing rates of non-communicable dis-

eases such as cancer, hypertension and coronary heart disease. Strengthening the fragile health system and tackling basic hygiene and health education are best-bet strategies for addressing the continent’s health challenges. Sustainable development programmes that improve or preserve the quality of water, air and other environmental goods and services will lower the national health budgets and contribute to ensuring a healthy labour force.






## 2.10 Agriculture and food security

Most people in Africa derive their livelihood from the use of natural resources, and this is linked to the main economic sector, agriculture, which employs about 60 per cent of the total population. Agriculture remains the single most important sector that could pull people, especially in the rural areas, out of poverty, through income generation and food security. African countries continue to commit to the continent-wide Comprehensive African Agricultural Development Programme as the framework for agricultural productivity growth. Agriculture, the basis for food security, contributes an average one-third of the region’s GDP (AfDB, 2013; UNDP, 2012b).

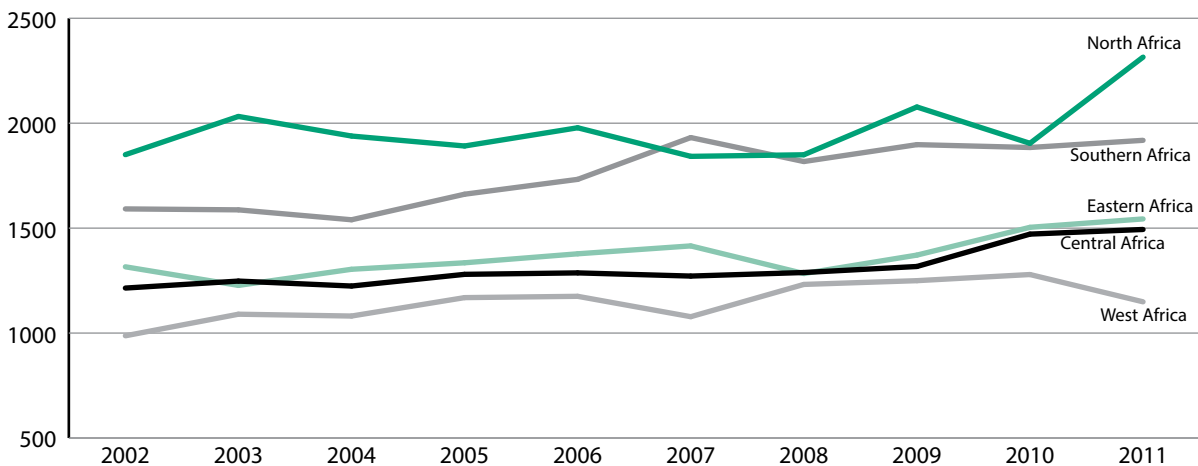
Agriculture remains a key driver of Africa’s transformation because of its expansive opportunities for value-addition, increased labour, land productivity and inclusive green growth. Priority should be

given to increasing yields of staples and addressing the challenges faced by smallholders, so as to improve the food security situation and lower food prices. As affluence leads to changing diets in Africa, the share of staples, such as cereals, roots and tubers will continue to decline, while that of meat, dairy products and oil crops will continue to rise. Also, livestock production will become important for food security.

There is a need to facilitate increased production, with lower growth in animal numbers, and a corresponding decrease in environmental degradation from grazing or wastes. Crop production may also be boosted by expanding the land area, increasing cropping frequency (often through irrigation), and intensifying yields. Even though productivity increases are important, they must be accompanied by environmental protection or restoration. New technology is needed for areas with land or water shortage, or with specific soil or climatic problems. Biotechnology could also help address challenges related to resistance to drought, water logging, soil acidity, salinity and extreme temperatures. In particular, pest-resistant varieties can reduce the need for pesticides, thereby increasing the prospects for green agriculture. Many other promising emerging technologies are likely to help increase production, with improved environmental protection. Some of these technologies are ICT-based, and ought to be adopted, as they offer opportunities for climate change adaptation.

Indicator	Sustainability trends	Remarks on trends
Food Production Index		General improvement in food production largely from cereals and livestock production
Agricultural production		Increasing agricultural production due to intensification and expansion of area under arable and irrigated farming
Agricultural practices		Not much progress, but opportunity for green agriculture technology as well as modern biotechnology
Food security		Africa’s food security and nutrition situation is worsening and progress has been slow in meeting the Millennium Development Goal target on hunger
Nutritional status		Overall improvement in nutritional status, but challenges with child nutrition, malnourishment and disease persist



**Figure 14: Trends in cereal yield (kg per hectare)**

**Data source:** World Bank, Data, Cereal yield (kg per hectare). Available from [data.worldbank.org/indicator/AG.YLD.CREL.KG](http://data.worldbank.org/indicator/AG.YLD.CREL.KG). Accessed June 7, 2013

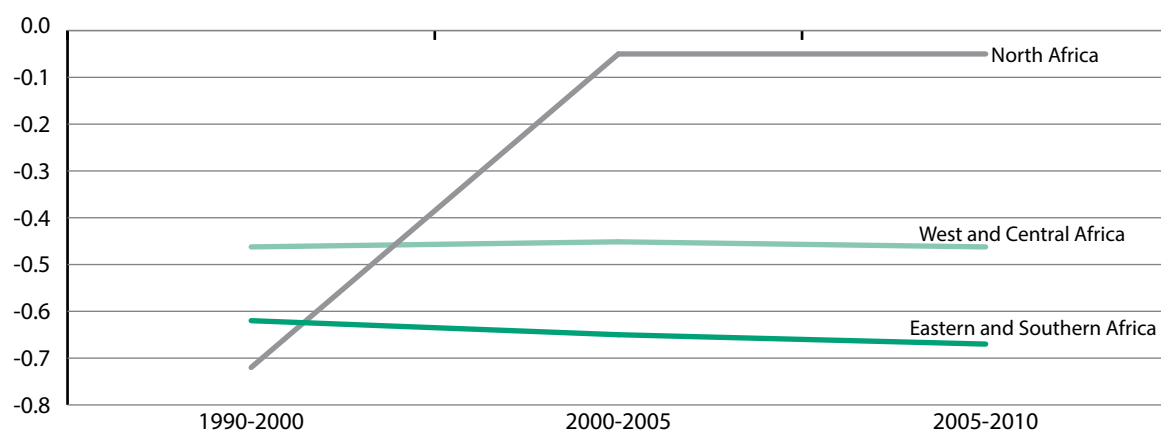
## 2.11 Natural resources

Africa's natural resources (land, soil, water, forest, biodiversity, marine ecosystems and mineral resources) form the basis of primary production and support most of the sectors that drive socio-economic development in Africa. Agriculture, tourism, industry, mining and many forms of local, national, regional and international trade thrive on the goods and services provided by natural resources. The consumption and production patterns based on these resources also determine the pace of sustainable development (SDSN, 2013). As Africa pursues sustainable growth pathways, the management of natural capital is critical.

Progress in the sustainable management of the natural resource base in Africa has been mixed. The rate of forest cover loss is decreasing and the overall change in forest cover is positive, but remains insignificant. More land area has been affected by desertification, and the proportion of people living on degraded land overall and in urban and rural areas is increasing. There has been a marked improvement in biodiversity conservation, with nationally designated protected terrestrial areas increasing, and the percentage change in wetland areas and threatened species decreasing. Water abstraction by industry, agriculture and for domestic use is increasing as a result of rising demand and an insignificant change in water use efficiency. The number of threatened

Indicator/theme	Sustainability trend	Remarks on trend
Forests	↔	Rate of loss of forest cover is decreasing. The overall change in forest cover is positive, but insignificant
Land	↘	More land area has been affected by desertification and the proportion of people living on degraded land is increasing.
Biodiversity	↗	Improvement in biodiversity conservation with more nationally designated protected terrestrial areas, reduction in percentage change in wetland areas and threatened species
Mineral resources	↗	Africa's share of world production and reserves of leading mineral resources increasing due to more exploitation and new discoveries
Freshwater resources	↘	Proportion of total water resources used with respect to renewable water available, and by sector, increasing
Marine ecosystem	↘	The number of threatened species of fish increasing and more fish stocks are exploited outside their safe biological limits

**Figure 15: Annual forest area change rate (%)**



Data source: FAO (2010).

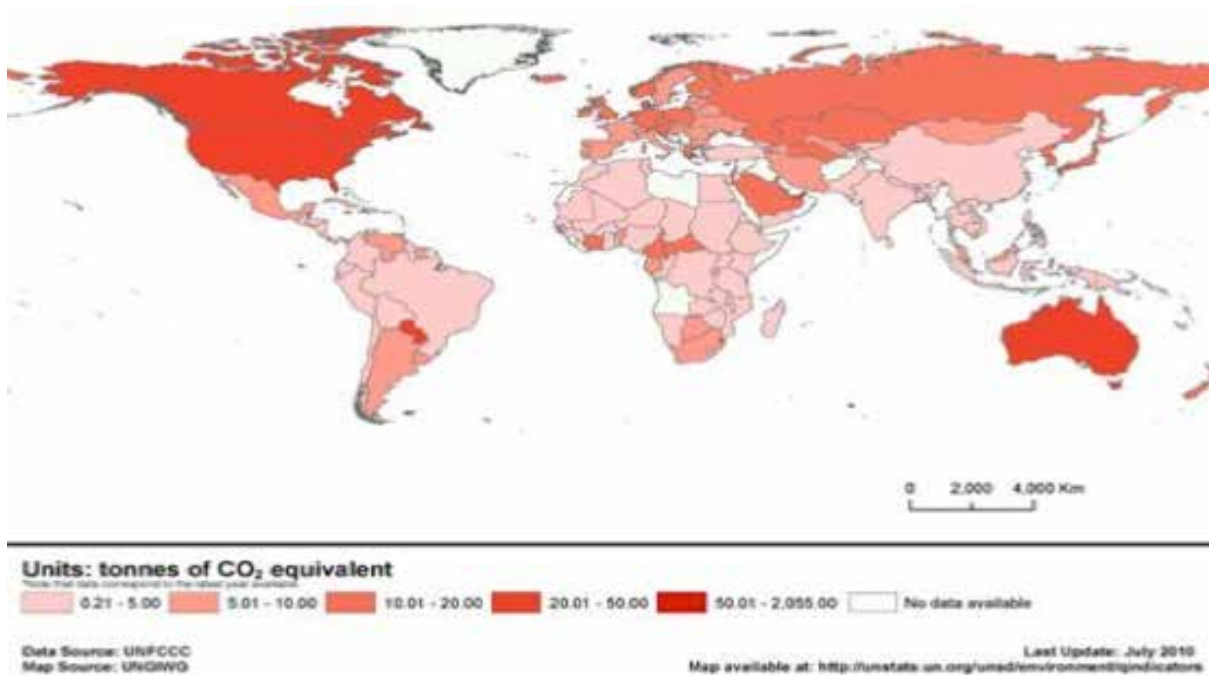
fish species is increasing, with more stocks being exploited outside their safe biological limits. The application of inclusive green growth principles provide an opportunity for the rational use and management of these natural assets for current and future generations. This requires good governance, value-adding institutions and policies, which promote forward and backward linkages with the rest of the economy, thereby engendering diversification, reducing vulnerabilities and increasing competitiveness, with a view to achieving desirable economic, social and environmental outcomes.

## 2.12 Climate change

Achieving sustainable development necessitates addressing climate variability and change as an inevitable and urgent global challenge with long-term implications for human and ecological systems. The effect of climate change in Africa is becoming more apparent and policy processes, investments and efforts at addressing this challenge are intensifying. While progress is steady, the task is daunting, given the magnitude of the impacts and related uncertainties.

Africa remains the continent with the least greenhouse gas emissions per capita, including and excluding land use, land-use change and forestry.

Indicator/theme	Sustainability trend	Remarks on trend
Greenhouse gas emissions, per capita	↗	Low greenhouse gas emissions per capita, including and excluding land use and land-use change and forestry
Adaptation	↗	The number of countries implementing NAPAs steadily increasing
Adaptation costs	↘	Adaptation costs are projected to increase for all emission scenarios
Mitigation	↗	The number of countries that have developed NAMAs is increasing and greenhouse gas emissions from Africa remain insignificant
CDM projects	↔	The number of CDM projects is increasing, but insignificant compared to other regions

**Figure 16: Greenhouse gas emissions per capita**

**Source:** UNFCCC

**Map Source:** UNGIWG. Map available at <http://unstats.un.org/unsd/environment/qindicators>

Both adaptation and mitigation efforts are gaining ground on the continent, through national and international initiatives. The number of countries implementing national adaptation programmes of action is increasing steadily, with clear estimates of the costs of adaptation. The number of countries that have developed nationally appropriate mitigation actions in a sustainable development context is also increasing, although the greenhouse gas emissions from Africa, in absolute terms and as a percentage of global emissions remain insignificant. The impact of climate variability and change affect a country's ability to meet its sustainable development goals. The pursuit of low-carbon development trajectories would minimize greenhouse gas emissions; contribute to inclusive green growth and the achievement of sustainable development objectives. This calls for the strengthening of global partnerships for development in the United Nations Framework Convention on Climate Change (UNFCCC) and other global forums.

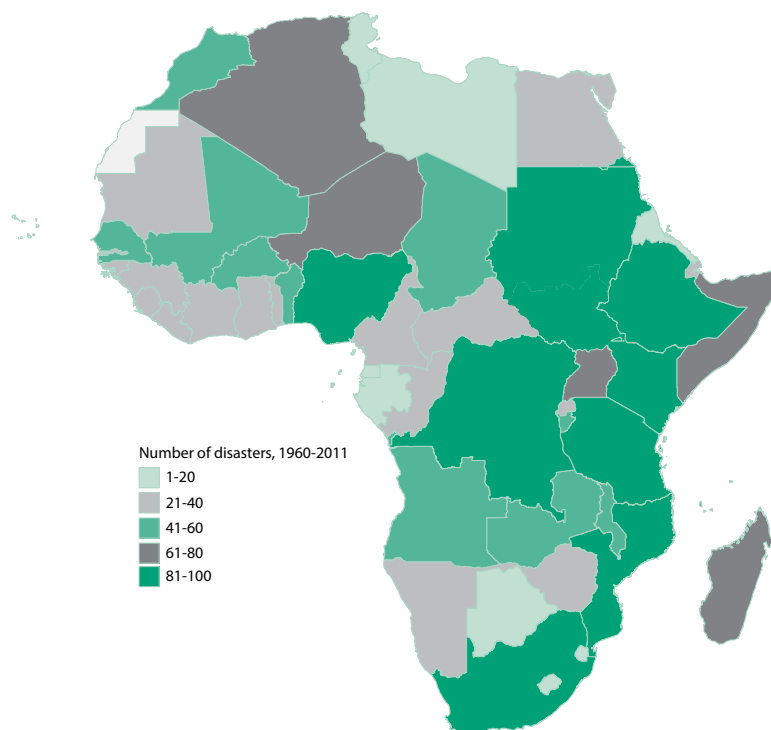
## 2.13 Natural disasters

The African population and the natural ecosystems are highly prone to natural disasters. The vulnerability of the population to natural disasters is heightened by their interaction with natural resources to improve livelihoods and development, even in risky ecosystems. Natural hazards such as earthquakes, volcanic activity, landslides, tsunamis, tropical cyclones and other severe storms, tornadoes and high winds, river floods and coastal flooding, wildfires and associated haze, drought, sand/dust storms, and insect infestations cause major loss of human lives and livelihoods, destruction of economic and social infrastructure, and general environmental damage.

There has been an increase in human and economic losses from natural hazards, such as earthquakes, volcanic activity, landslides, tsunamis, tropical cyclones and other severe storms, tornadoes and high winds, river floods and coastal flooding, wildfires and the associated haze, drought, sand/dust storms, and insect infesta-

Indicator/Theme	Sustainability trend	Remarks on trend
Human and economic losses from disasters	↘	Human and economic losses resulting from disasters are increasing due to increasing frequency and severity of natural disasters
Disaster preparedness and response	↔	The number of countries with established and operational National Platform on Disaster Preparedness/Disaster prevention and mitigation instruments is increasing, but capacity issues continue to constrain preparedness and response measures
Vulnerability to natural disasters	↘	The percentage of population living in natural disaster/hazard prone areas increasing and the number and frequency of disasters that have occurred in Africa is on the rise

**Figure 17: Number of disasters, 1960-2011**



**Data source:** The OFDA/CRED International Disaster Database. Accessed on August 16, 2013

tions. The extent of loss and level of preparedness varies across subregions and countries of Africa. Losses resulting from disasters have been worsening because of the increased frequency of natural disasters and vulnerability, especially of the poor, to disasters. An increasing number of countries have established national platforms for disaster risk reduction and preparedness, but the proportion of people living in disaster prone areas has been increasing. Disaster risk management and

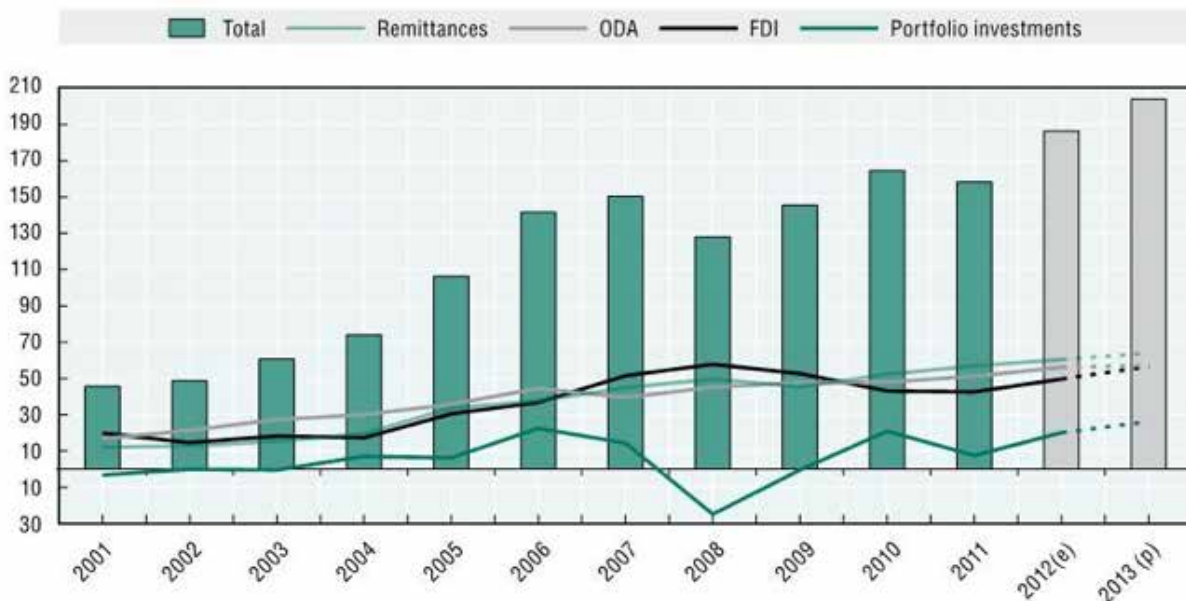
reduction is a must, if sustainable development is to be achieved.

## 2.14 Means of implementation

Africa relies on both domestic and external sources to support its development. It is essential to scale up domestic and external financial resources to cover the large financial gap for the continent's industrialization. An adequate means of financing

Indicator/theme	Sustainability trend	Remarks on trend
Percentage of budget from domestic resources	↗	Increase in percentage of budget of many countries coming from domestic resources
Remittances	↘	Remittances have been declining and little channelled to sustainable development related investments
External Financing	↘	Net Official Development Assistance (ODA) as % of GNI declining in relation to the rest of the world, but higher on average to all regions Decline in the proportion of total bilateral, sector-allocable ODA of OECD/DAC donors Declining Foreign Direct Investment including those targeting environmental goods and services
Green Technology/ Eco-Innovation	↔	Increasing but insignificant expenditure on research and development as % of GDP Insignificant increase in patents in environmentally-related technologies. More papers/publications related to eco-innovation
Capacity-building	↘	Few countries with national capacity development strategies yet capacity-building needs for implementing SD is growing

**Figure 18: Total external financial flows to Africa (billion US\$, current)**



**Note:** ODA includes both bilateral and multilateral flows: (e) estimates, (p) projections.

**Source:** UNCTAD (2012a); IMF (2012); and ; OECD/DAC; World Bank.12 <http://dx.doi.org/10.1787/10.1787/888932807189> as reported in AfDB, OECD, UNDP & ECA (2013)

from different sources and targeting different aspects and sectors is a prerequisite for sustainable development. Over the years, Africa has employed various means of implementation for sustainable

development, and more and more, the share of domestic resources has been increasing.

Only a small proportion of remittances received have been directly channelled to sustainable development investments, while the cost of remittance continues to be high. The net ODA as a percentage of GNI is declining in relation to the rest of the world, but higher on average to all regions. Foreign direct investments, especially those targeting environmental goods and services, are declining. Expenditure on research and development as a percentage of GDP remains low, while the increase in patents in environmentally-related technologies is insignificant, with only a few countries registering new patents. Furthermore, only a few countries have developed national capacity development strategies.

To advance sustainable development, both State and non-State actors will have to adopt policies and mobilize resources (from local and external sources). Funding-related efforts must build on current commitments and relevant governance mechanisms, while new innovative financing alternatives must be employed to scale up previous successes. Above all, improved governance, including zero tolerance to corruption, stronger accountability and provision for multi-stakeholder engagement in funding, technology development and transfer and capacity-building and effective development cooperation will be crucial for the realization of sustainable development in Africa.

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# **Part II: Promoting Inclusive Green Growth in Selected Sectors**

*Agriculture, Ecosystems, Energy, Industry and Trade*

## 3. Agriculture

### Key messages

- Agricultural productivity in Africa has been increasing, but has not translated into food security for most Africans, while environmental degradation continues unabated.
- Improving the functioning of African land markets could be a trigger for inclusive green growth in agriculture.
- The creation of a conducive environment for agribusiness should be promoted.
- Transforming wasteful subsidies into market-smart and sustainable systems would increase agricultural productivity.
- Developing carbon project extension services for agro forestry and crop production would increase carbon revenue and create jobs.
- Technical and institutional capacity to promote inclusive green growth in the sector should be strengthened.

Agriculture remains the main engine of economic growth in Africa, contributing an average of one-third of the region's GDP. The crucial role of the agriculture sector in Africa's social and economic development underlines the importance of promoting inclusive green growth in the sector. Inclusive green growth interventions are needed to address equitable food security and degradation of natural resources. The already high proportion (25 per cent) of undernourished people living in Africa is projected to increase due to the growing threats of climate change (UNDP, 2012). Agricultural GDP grew at only 3.3 per cent annually in the past decade. The growth is, however, neither inclusive nor green, as African farmers still make up the largest share of the poor. Indeed, most of this growth is associated with environmental degradation (World Bank, 2008).

### Potential for inclusive green growth

The crop, livestock and agroforestry subsectors hold significant potential for inclusive green growth.

- Fast tracking the application of science and technology to address the causes of low crop production, including limited application of sustainable practices. Examples include the production of high-value cash crops, including tobacco, coffee, cocoa, cotton or tea.
- Addressing the myriad economic, social and environmental impacts of livestock production. There is potential in meat exports, which currently generate more than \$400 million in revenue annually.
- Intensification of agroforestry which, for instance, has increased cocoa productivity in Côte d'Ivoire by more than 30 per cent, and

cereal production by more than 10 per cent in the Niger.

South Africa, to recover degraded grassland soil, concentrates grazing in small areas and moves the cattle frequently.

## Trends in fostering inclusive green growth in the agriculture sector

The adoption of practices and initiatives to advance inclusive green growth in the agricultural sector in the region is gaining momentum.

- Increasing intensification through “evergreen agriculture”, as an affordable and accessible science-based solution to regenerating the land on small-scale farms, and increasing family food production and cash income: Evergreen agriculture has been adopted and is now being scaled up in Ethiopia, Rwanda, Senegal and other countries. Malawi, the Niger and Zambia are building on the successful scaling up of the exercise (Garrity and others, 2010).
- Conservation agriculture and soil carbon credit, which both increase agricultural productivity and address land degradation: Conservation agriculture has increased agricultural productivity in spectacular ways. The box below provides a good practice case.
- The managed cattle grazing method used by the Savory Institute in the Cape Province,

Index insurance for livestock and crops, as a potential vehicle for helping farmers cope with covariate shocks. The insurance is sold locally, at attractive rates to micro-finance organizations that target poor farmers.

Other good practices include strengthening of micro-irrigation infrastructure in water-scarce areas, especially, to improve productivity, raise incomes through crop yields and outputs, and enhance household food security. This results in a significant yield improvement over traditional irrigation practices such as flood irrigation. There are success stories with sustainable land management, which have been adopted by countries such as Ethiopia to improve agricultural practices. Implementation of the sustainable land management project has resulted in several economic, environmental and social outcomes. Another important trend in the sector is the support for improved marketing of agricultural produce, to boost production and profitability. This has been successful in Ghana, for roots and tubers.

### Box 1: Zimbabwe Precision Conservation Agriculture Program

Since 2004 precision conservation agriculture (PCA) approach has been promoted to more than 50,000 farm households through a combination of partnerships with NGOs and national agricultural research and extension departments in Zimbabwe.

The program was a major success. Over the three seasons after its implementation, average cereal yields increased by 15 per cent to 300 per cent in more than 15,000 farm households, with the yield increase varying by rainfall regime, soil types and fertility. As a consequence, in the 2007–2008 cropping season, the PCA package was promoted to more than 50,000 communal/ smallholder farmers by NGOs working in Zimbabwe

For inclusive green growth to take off in crop production, it is important to coordinate crop production policies in a way that takes account of the fact that farmers produce both cash crops and food crop to satisfy economic and social needs to the detriment of environmental needs. It is important for agriculture to leverage farm management practices such as conservation agriculture which can improve productivity while promoting soil regeneration.

## Challenges and opportunities

While the adoption of inclusive green growth principles and practices has a high potential for promoting the sustainable development of the agriculture sector in Africa, challenges must be overcome in order to yield optimal benefits. There are also many opportunities for spurring inclusive green growth and dealing with these challenges:

### Challenges

- Demographic pressures causing the degradation of agricultural land, as seen in forest cover loss, soil erosion and competition for scarce natural resources.
- Lack of formal land markets and poor land tenure in Africa (Byamugisha, 2013), which normally undermines the inclusion of women, young people and other vulnerable groups in green growth.
- Increasing agricultural labour requirements, even with the sector's inability to attract men and young people, and entrenched negative perceptions among young Africans because of its subsistence nature.
- Low adoption rate of conservation agriculture by smallholder farmers, owing to less supportive land-use policies, investment in research, and extension programmes.
- Lack of a formal soil carbon market and the CDM has not yet allowed carbon sequestered from agricultural activities in its protocols.
- Low-capacity agriculture sector stakeholders, which impedes effective implementation of inclusive green growth approaches and practices in the sector.

### Opportunities

- The NEPAD Comprehensive Africa Agriculture Development Programme, adopted in 2003 by the African Union, focuses on raising annual agricultural productivity by at least 6 per cent, and increasing public investment in agriculture to 10 per cent of national budgets per year. Heads of State have made further commitments in the 2014 Malabo Declaration.
- Existing frameworks and guidelines to promote secure land tenure and sustainable land management.
- Agriculture and carbon sequestration activities (reduced tillage, cover crops, residue management, mulching, composting, green manure, targeted application of fertilizers, reduced biomass burning, and agro forestry) can contribute to restoring agricultural production and fertilizer absorption capacity.
- Existence of programmes and other initiatives for inclusive green growth in Africa:
- The Alliance for a Green Revolution in Africa, the Climate for Development in Africa Programme, Climate Smart Agriculture, spearheaded by the Common Market for Eastern and Southern Africa (COMESA) and supported by FAO, UNDP and the World Bank.
- Increasing opportunities for technology innovation and access, especially with the widespread access to mobile telephones and ICT in Africa.

### Conclusion and policy recommendations

The crucial role played by the agriculture sector in Africa's social and economic development underlines the importance of promoting inclusive green

growth in the sector. Inclusive green growth interventions are needed in the sector to address food security, which remains a major problem on the continent. Other factors that warrant urgent efforts to foster inclusive green growth in the sector are its high dependence on natural resources and the associated negative impacts on environmental sustainability. The growing trend of integrating inclusive green growth approaches and practices in the sector is a move in the right direction. These have amply demonstrated benefits such as increased productivity, job creation and improved natural resource management. These, together with the various opportunities discussed, can be capitalized upon to scale up inclusive green growth in the sector. This, however, would require urgent attention to the challenges confronting the sector, which could be addressed by mainstreaming inclusive green growth principles in agricultural development and investment policies and strategies. This would also contribute to attaining sustainable and inclusive transformation and development in Africa, including achieving climate change mitigation and adaptation objectives.

In light of the foregoing, countries should:

- Promote smart subsidy for index insurance premium. In order to increase farmers' willingness to pay, the premium should be subsidized in the initial stages to allow them time to appreciate the product and develop a taste for it
  - Address post-harvest losses by introducing and promoting better post-harvest handling techniques.
  - Foster a conducive environment for agribusiness clustering, to create jobs. Connecting all the agricultural value chain actors can improve the sector's efficiency by reducing the cost of operation, and freeing up money for investing in higher-value activities that would create more jobs.
  - Strengthen farmer-based organizations or village-based grassroots institutions to promote peer learning in inclusive green growth.
  - Develop a carbon project extension service to scale up and scale out inclusive green growth practices and approaches in the agriculture sector.
  - Increase investments in agriculture and make it attractive to young people, as a profitable enterprise.
  - Strengthen technical and institutional capacity by, among others, establishing a dedicated and highly skilled green growth promotion team from government and non-governmental institutions to drive the process.
- Strengthen land tenure and the functioning of African land markets to encourage equitable access to productive assets, sustainable land management and other long-term investments, such as irrigation, to increase and sustain agricultural productivity and production.
  - Transform agriculture input subsidies aimed at improving agriculture productivity into market-smart and sustainable systems. These include those for addressing market failures in the input market, crop and livestock insurance, and the micro-finance sector

## 4. Ecosystems goods and services

### Key messages

- The role of ecosystems goods and services in advancing sustained and inclusive green growth is now recognized at the global, regional and national levels.
- Ecosystems goods and services-based inclusive green growth can support the livelihoods of the poor and promote the realization of sustainable development in Africa.
- There is a need to focus on value addition for scaling up ecosystem services.
- Enhancing ecological integrity and productivity is fundamental to the sustained provision of ecosystem goods and services.
- Sustainable management and sound governance of natural resources should be accorded a high priority for the sustainable provision of ecosystems goods and services.

There is great potential for harnessing ecosystems goods and services for inclusive green growth, and ultimately sustainable development in Africa. This is underscored by the fact that at 1.4 gha, Africa's per capita "ecological footprint" (a measure of a population's use of renewable resources) is below, not only the global average of 2.7 gha, but also below the globally available biocapacity of 1.8 gha per person (WWF/AfDB, 2012). Africa is well poised to implement inclusive green growth by moving forward with innovative approaches. From disaster risk reduction to energy generation to water security, Africa has ample opportunity to seize the benefits of ecosystems goods and services for inclusive green growth. The provisioning and regulating services provided by ecosystems directly and indirectly link to every aspect of inclusive green growth- socially inclusive and environmentally conscious economic growth. Harnessing ecosystems services, therefore, would spur inclusive green growth and lead to sustainable development.

Ecosystems goods and service-based inclusive green growth contributes to natural disaster reduction, climate change resilience and human

security. According to AfDB (2013), promoting inclusive green growth would help Africa's transition to sustainable development and support livelihoods, while enhancing water quality and provision. Inclusive green growth also facilitates the development of clean and renewable energy sources.

### Potential for inclusive green growth in ecosystems goods and services

Practices throughout Africa and elsewhere highlight the intrinsic connection between ecosystems goods and services and inclusive green growth initiatives. Environmental goods and services in Africa are often concerned with the effects of ecosystem health and climate change on food security, social vulnerability, poverty reduction and environmentally conscious economic growth. The development and management of ecosystems goods and services has led to job creation, improved human welfare and poverty reduction, with efficient resource use and enhanced environmental assets. This has promoted

## Box 2: Examples of linkages between ecosystems goods and services and inclusive green growth

- (a) Kenyan coral reefs underpin regional fisheries: The reefs protect the coastline, sequester carbon dioxide, and provide recreation and tourism. It is estimated that the reefs stretch over 12,000 km<sup>2</sup> in the Western Indian Ocean, contributing an economic value of \$7.3 billion per year to the region.
- (b) Madagascar's rich biodiversity is globally recognized for contributing to pharmaceutical research and tropical medicine: Long used in traditional medicine, the Madagascar periwinkle (*Catharantus roseus*) is used in the treatment of numerous illnesses, including diabetes and cancer, and has made a significant contribution to the survival rates for childhood leukaemia, from 20 to 80 per cent;
- (c) Malawi, the United Republic of Tanzania, Uganda, Kenya, the Democratic Republic of the Congo and the Republic of the Congo inland waters: These States have contributed to the growth of global fishery by generating 2.5 million tons (about 25 per cent of the global total in 2008);
- (d) Uganda Mountain Gorillas are a major tourist attraction: Each mountain gorilla generates about \$1 million in yearly revenue (WWF, 2011);
- (e) Forests in Cameroon and the Democratic Republic of the Congo constitute Africa's largest forest stock, estimated at 98 billion tons of carbon, equivalent to 145 tons per hectare (ha): Meanwhile, these forests contribute to food provisions, water purification, watershed erosion, carbon sequestration and soil fertility; and
- (f) Guinea watersheds in the Fouta Djallon highlands are the source of half of West Africa's rivers: Likewise, Kenyan watersheds are the main sources of water for the Nile River. These watersheds contribute to the provision of fish, soil nutrients and sanitation, and provide a continual water supply to large populations.

inclusive green growth for sustainable development in Africa.

Fostering inclusive green growth in the development and management of ecosystems goods and services: Efforts are ongoing to foster green growth in ecosystems goods and services, while good practices have been documented in the process. For instance, livelihood diversification and industry spin-off, such as empowering local community actors can challenge traditional socioeconomic structures, provide for social inclusion, promote community-led innovations, build capacities, and improve the lives and livelihoods of socially vulnerable groups (women, youth, and HIV/AIDS populations).

Under the sustainable management of forests, inclusive green growth can ensure that the value of forests would be intrinsically accounted for. For instance, while the extractable value of Cameroon's tropical forests was approximately

\$700 per hectare per year (for timber, fuel wood and non-timber products), this was far less than the forests' climate and flood benefits, which added up to about \$900-\$2,300 per hectare per year (TEEB, 2010). Another good practice of woodlots management in the United Republic of Tanzania is provided in the box below.

Biodiversity conservation and ecotourism, as an important component of ecosystem goods and services: The "Building of local capacity for sustainable use of biodiversity in the Okavango Delta" project, for instance, was able to generate access to natural resources, which resulted in the ability of households located in the Delta to improve their incomes (Millennium Ecosystem Assessment Board, 2005). Community-based natural resource management programmes have demonstrated that by empowering rural communities and sharing benefits from tourism and sustainable use of wildlife, it is possible to achieve the mutually ben-

### Box 3: Woodlots in the United Republic of Tanzania

In Makete, United Republic of Tanzania, forest, woodland and grassland resources are essential to the local economy, as well as for the conservation of vital watersheds and the environment, for agriculture and live-stock production. Widespread unsustainable land use has produced serious ecological losses and limited farm productivity. These problems have also been aggravated by a lack of institutional, legislative and fiscal capacity for effective natural resources management and consequently for the stability of the Makete ecosystem.

Using smallholder woodlot management practices, an ecosystem-based inclusive green growth project undertaken by the Climate Change and Development – Adapting by Reducing vulnerability (CC DARE) unit of the United Nations Environment Programme (UNEP) created a new stream of income for local communities and revenues for the city, while enhancing resilience to climate vulnerability. Building on indigenous weather forecasting knowledge, the project trained 27 technicians on forecasting indicators, and disseminated data on silvicultural management practices, training disadvantaged women and girls who work in woodland management and the marketing of wood products with empowering knowledge relating to species selection, land preparation, field planting and spacing, management for forest regeneration and marketing channels for wood products.

This was an incredibly innovative advancement that provided financial credits to low-income people who could then use their woodlots as collateral for microloans. The built-in incentive to maintain the woodlots created new sources of income and triggered the setting up of community savings and credit societies. The regeneration of the forest for the benefit of the watershed succeeded in promoting inclusive green growth and sustainable ecosystem management.

*Source: Woodlot Management in Tanzania* ([www.unep.org/greeneconomy/SuccessStories/WoodlotManagementinTanzania/tabid/29893/Default.aspx](http://www.unep.org/greeneconomy/SuccessStories/WoodlotManagementinTanzania/tabid/29893/Default.aspx)).

eficial objectives of biodiversity conservation and improved livelihoods.

Improving water services by developing erosion barriers, rainfall catchment systems, drought tolerant crops, building clean water supply and sanitation facilities, and building human capacity related to water resource management have proven to improve water services-related practices.

Increasing fish production, currently estimated at 7.6 million tons a year.

Enhancing disaster risk reduction to reduce threats to social and economic development.

## Challenges and opportunities

### Challenges

- Ecosystems are rapidly becoming constrained by global impacts, resulting from

continuous loss of biodiversity, land degradation, population increase, high levels of hunger, water scarcity, rising temperatures and changing weather patterns (Heinrich Böll Foundation and others, 2012).

- Weak governance with less effective systems in place for planning and guiding land and resource use, limited accountability, corruption, highly centralized decision-making, unequal application of rules, inadequate information, and encroachment on communal lands.
- Weak scientific research to enhance ecosystem goods and services.
- Population growth and rapid urbanization that has already stressed Africa's ecosystems severely.



- Deforestation that constrains the invaluable ecosystem services provided by forests.
  - Climate change with direct impacts on the composition of individual ecosystems, necessitating the need to adapt current practices (unproductive or productive) to changing future circumstances.
  - Water insecurity caused by weak governance, urbanization and climate change.
  - Extractive industries affecting non-renewable resources such as gold, diamonds and crude oil have had an untold impact on the environment.
- Promoting a true measure of wealth by including natural capital in GDP measurements.
  - Leveraging international financing initiatives such as The World Bank's Climate Investment Funds, the African Development Bank's African Water Facility and the Global Environment Facility.

### **Opportunities**

Vast potential exists to harness ecosystems goods and services to achieve inclusive green growth, and ultimately, sustainable development in Africa:

- Harnessing opportunities presented by the climate change challenge.
- Promoting payment for ecosystems services.
- Certification of environmental goods and services.
- Learning from ecosystems conservation initiatives such as the Regional Coastal and Marine Conservation Programme for West Africa and Water and Nature Initiative of the International Union for Conservation of Nature (IUCN), which manages and protects water reserves and heritage in river and lake basins, such as the Nile Valley, the Volta, Tina, and Limpopo (IUCN, 2013).
- Leveraging international agreements and platforms such as the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification, and the Convention on Wetlands of In-

ternational Importance, especially as Waterfowl Habitat (RAMSAR).

### **Conclusion and policy recommendations**

Vast potential exists to harness ecosystems goods and services for the successful achievement of inclusive green growth, and ultimately sustainable development in Africa. This is underscored by the fact that at 1.4 global hectares (gha) of Africa's per capita "ecological footprint" (a measure of a population's use of renewable resources) is below, not only the global average of 2.7 gha but also the globally available biocapacity of 1.8 gha per person (WWF/AfDB, 2012). Africa is well poised to implement inclusive green growth by moving forward with innovative approaches. From disaster risk reduction to energy generation, to water security, Africa has ample opportunity to seize the benefits of ecosystem goods and services for inclusive green growth.

The provisioning and regulating services provided by ecosystems directly and indirectly link to every aspect of inclusive green growth: socially inclusive and environmentally conscious economic growth. Harnessing ecosystem services will spur inclusive green growth and lead to sustainable development. Most of the challenges to ecosystems-based inclusive green growth also provide opportunities that could be leveraged to spur this form of growth. These opportunities must be seized and good practices scaled up and scaled out for beneficial economic, social and environ-

mental outcomes. Lessons learned from the analysis of ecosystems-based inclusive green growth are synthesized into the following policy recommendations.

Countries should:

- Support research to ensure that the development and management of environmental goods and services are guided by the best available science;
- Promote the application of environmental assessment tools in national development plans and strategies and in decisions and actions affecting environmental goods and services;
- Promote knowledge exchange and the development of practical tools and guidelines for implementing ecosystems goods and services management approaches, as part of broader inclusive green growth and sustainable development planning strategies;
- Develop education, training and communication capabilities to, among other things, increase awareness of the role of ecosystems and ecosystem management for inclusive green growth and sustainable development in Africa;
- Mobilize funding and promote value-addition for ecosystem goods and services to consolidate gains and scale up and scale out good practices;
- Strengthen capacity to implement multilateral environmental agreements, enhance institutional effectiveness and promote regional cooperation.

# 5. Energy

## Key messages

- Fostering inclusive green growth can contribute to addressing Africa's energy-related challenges.
- Trends in energy efficiency, deployment of renewable energy, supply of modern energy services, and efforts to address social and environmental concerns all point to the application of inclusive green growth principles in the energy sector, but more needs to be done.
- Positive results are emerging from mainstreaming inclusive green growth principles in the energy sector.
- Further development of the renewable energy sector presents considerable opportunities for inclusive green growth.
- Inclusive green growth in the energy sector will require, among other things, an understanding of cross-cutting and cross-sectoral linkages.

Amidst the abundance of energy resources, Africa is facing an energy crisis. Existing production capacity has not met the growing energy demand to power and grow the economy, drive local development and tackle poverty. The high cost of electricity generation, emanating from the high dependence on fossil fuels, poor energy infrastructure and low investments in the sector, among others, is affecting various facets of economic and social development. The unmet demand for energy has further resulted in high dependence on unsustainably harvested traditional biomass energy in the form of charcoal and firewood, as cooking fuels, with the attendant environmental and health problems.

Africa's current energy development and deployment approaches have, therefore, not delivered the desired level of energy services and security – and requires a rethink. Africa is rich in energy resources, with known reserves of oil standing at 12.1 per cent of global production. Only 5 per cent of Africa's hydro potential of 1620GW in sub-Saharan Africa has been exploited.

## Africa's energy sector

More than 75 per cent of the African population are without electricity, while 81 per cent depend on solid traditional biomass fuels for cooking. Per capita electricity consumption levels are much lower (535.7 kWh/per capita)<sup>1</sup> compared to the global average of 3,044.4kWh/per capita (World Bank, 2011). The population growth in sub-Saharan Africa from 1990 to 2010 outstripped increases in access to electricity and modern cooking fuels, resulting in more people lacking electricity and relying on solid fuels by 2010 than in 1990.

More than 30 sub-Saharan African countries have experienced power shortages in the last 5 to 10 years. This affected various facets of development, as a result of load shedding and inadequate supply. The sector is also characterized by high costs of electricity generation, partly emanating from the high dependence on fossil fuels for electricity generation. This situation has led to high dependence on unsustainably harvested traditional bio-

<sup>1</sup> There are exceptions. For example, South Africa consumes 4,694 kWh/per capita, although this is also skewed towards the rich population.

#### Box 4: National Biogas Programme Ethiopia

The Government of Ethiopia, as part of the Growth and Transformation Plan and Climate Resilient Green Economy Strategy, launched the National Biogas Programme Ethiopia to promote the uptake of domestic biogas, and to develop and disseminate a commercially viable market biogas sector in the country. The goal of the programme is to improve health, livelihood and quality of life of rural households through the exploitation of market and non-market benefits of domestic biogas.

The programme comprises eight major components: promotion and marketing, training, quality management, research and development, monitoring and evaluation, institutional support, extension, and gender mainstreaming. The first phase of the programme (2008–2012) involved 5,000 biogas plants of 4, 6, 8 and 10 m<sup>3</sup> in 18 selected districts (Woredas) in the regional states of Tigray; Amhara; Oromiya; and Southern Nations, Nationalities and Peoples.

The biogas plants generate sufficient energy for household consumption, in some cases much beyond demand. The excess energy generated was used to cover the energy demand of the nearby communities and institutions, including schools and health centres. By supplying energy at affordable prices, biogas plants contributed to reducing health problems associated with smoke from fuel and cow dung burning, thereby reducing household health expenditures. At the same time, it has reduced the time women and children spend on collecting fuel wood from long distances. The National Biogas Programme implementation package also includes training on biogas maintenance, installation, and a credit association. The programme provided more jobs for technical and vocation training graduates, as well as for construction cooperatives and small and medium-sized enterprises.

By substituting commercial fertilizers (inorganic) by bio slurry (organic matter), the project saved farmers an estimated BR 4,772,130 (household saving of BR 950) through fertilizer substitution. The bio slurry also improved soil conditions and maintained sustainable soil fertility by increasing moisture retention capacity and levels of other soil nutrient elements that cannot be substituted by commercial fertilizer.

By replacing biogas for wood and charcoal, the project saved standing forest stocks of 35.9 tons and 20.8 tons from being harvested for woodfuel and charcoal, respectively. This is estimated to offset emission of 65.7 tons of carbon dioxide equivalent (CO<sub>2</sub>e) from direct wood burning or 53.4 tons CO<sub>2</sub>e from charcoal burning. Additionally, replacing the fossil fuel energy sources such as kerosene and liquefied petroleum gas by biogas has resulted in a modest emission reduction of 13.5 and 40.5 tons CO<sub>2</sub>e, respectively.

*Source:* ECA, 2014a.

mass energy in the form of charcoal and firewood as cooking fuels, both of which result in health problems and deaths from indoor air pollution.

### Trends in promoting inclusive green growth in the energy sector

Inclusive green growth-related principles and practices are increasingly being integrated into various facets of energy production and deployment. These include energy efficiency and demand side management, renewable energy deployment, bioenergy, availing adequate modern energy to various economic sectors and ad-

ressing cross-sectoral issues. Energy efficiency and demand side management and deployment of renewable energy result in resource efficiency and reduction, or elimination of environmental harm arising from the use of fossil fuels. A certain critical amount of modern energy for cross cutting usage in various economic sectors such as industry, transport and commercial premises, will improve economic growth and human welfare. Specific inclusive green growth promotion initiatives include:

- Replacement of incandescent bulbs with compact fluorescent lights in Ghana

- Bujagali hydroelectric power plant, financed through public-private partnerships in Uganda
- National biogas programme in Ethiopia
- National railway and bus rapid projects in Ethiopia
- Energy efficiency and demand side management programme in South Africa
- Multi-functional platforms for local agro processing in Burkina Faso and Mali
- Dependence on donor support for projects, hence compromising on sustainability: Most of the previous renewable energy projects that benefitted from donor support tended to collapse soon after the support was withdrawn, thus limiting sustainability and the opportunity to build on results.
- Inadequate capacity to promote inclusive green growth practices: The capacity of African countries to support inclusive green growth in the energy sector is limited. For example, capacity is inadequate for policy and strategy formulation, development of bankable projects, engagement with potential financiers, for technology absorption, entrepreneurship and even for credible installation and maintenance of new technology systems.

## Challenges and opportunities

### Challenges

The low penetration of inclusive green growth principles and practices in the energy sector is influenced by a number of challenges, including:

- Low investment in the sector, owing to perceived risks and low economies of scale, as individual countries do not offer a significant market for investors. Investment in the energy sector has been slow and this is associated with high political and market risk for investors, as well as low tariffs. Markets will also remain small, unless the economies of scale of regional cooperation are exploited.
- High upfront costs of inclusive green growth-related technologies and inadequate capacity for propagating inclusive green growth technologies and practices: Africa is not the source of most of the clean energy technologies that are being deployed. And energy industries (apart from national utilities) are informal, small and cannot provide credible services. Although the global renewable energy prices have come down, the challenge is that most of the technologies are imported, thus resulting in high costs.

### Opportunities

- The emergence of new policies and strategies for promotion of renewable energy. South Africa, for example, under competitive bidding, has attracted investment of nearly 4GW of renewable energy. Kenya introduced a feed-in tariff on electricity from wind, biomass and small hydropower in 2008, and extended the policy in 2010 to include geothermal, biogas and solar energy resource-generated electricity. The revised renewable energy feed-in tariffs (REFIT) policy in 2012 has resulted in increased interest in renewable energy investment in the country.
- Energy sector reforms, including liberalization of the energy sector, to broaden the involvement of independent energy or electricity regulators: Namibia and South Africa have part of their electricity distribution under regional electricity distributors and municipalities respectively (World Bank, 2007). Other forms of reforms include removal of fossil fuel subsidies and creating cost-reflective tariffs.

- Business and energy delivery models for clean energy, such as D-light's range of solar-powered systems.
- Technology development to cut down costs and promote clean resource efficiency.
- Innovative and new financing models, such as the Green Climate Fund, to support inclusive green growth in the energy sector.
- Establishment of new sustainable energy regional centres, such as the East African Centre for Renewable Energy and Energy Efficiency and the South African Centre for Renewable Energy and Energy Efficiency.
- Regional cooperation in energy, through regional power pools and electricity regulators.
- International cooperation for financial and technical support, and tapping into initiatives such as the Africa-European Union Energy Partnership; the Lighting Africa programme of the International Finance Corporation and World Bank; Power Africa, a multi-stakeholder partnership among the Governments of the United States of America, the United Republic of Tanzania, Kenya, Ethiopia, Ghana, Nigeria and Liberia, the private sectors of Africa and the United States, and AfDB; the Global Alliance for Clean Cook and the Global Liquefied Petroleum Gas Partnership.

## Conclusion and policy recommendations

Despite the abundance of energy resources, Africa is still facing an energy crisis. The existing production capacity has not met the growing energy demand to power and grow the economy, drive local development and tackle poverty. The high cost of electricity generation emanating

from the high dependence on fossil fuels for electricity generation, poor energy infrastructure and low investments in the sector, among others, is affecting various facets of economic and social development. Low energy supply and consumption in key sectors of the economy, such as agriculture and industry, is affecting outputs and growth. The unmet demand for energy has further resulted in high dependence on unsustainably harvested traditional biomass energy in the form of charcoal and firewood as cooking fuels, and led to environmental and health problems. Africa's current energy development and deployment approaches have, therefore, not delivered the desired level of energy services and security, and requires a rethink.

The following all suggest a high potential for inclusive green growth-related practices in the sector: current generation levels, policy initiatives and reforms in improving energy efficiency; deployment of renewable energy; reducing energy intensity; increasing energy access; and social, environmental and cross-cutting and cross-sectoral considerations. While a number of challenges - such as low investments, high upfront costs and low economies of scale - still need to be met, opportunities abound. In particular, Africa's renewable energy potential presents prospects for meeting energy-related challenges, creating jobs and enhancing human welfare. International and regional cooperation, as well as technology development and transfer, also present opportunities Africa could tap into to enhance the application and realization of inclusive green growth in the energy sector.

The following policy recommendations are intended to scale up inclusive green growth in the energy sector of Africa.

Countries should:

- Unlock the full potential for inclusive green growth in the energy sector. In order to fully realize the inclusive green growth potential

in the sector, the policy process should start by identifying opportunities in the broad context of inclusive green growth objectives.

- Ensure that the energy reforms being introduced benefit all. While policy reforms need to attract and ensure returns on investments, the extent to which they address the energy needs of the whole country, including the energy poor, is crucial.
- Ensure that policies aimed at attracting investments are evidence-based, and take into account all policy options, the country's overall development strategy and energy resource potentials. This would help speed up and deepen inclusive green growth in the energy sector.
- Address the issue of low economies of scale and investments, national energy strategies; and as far as possible, closely align these with regional and continental regional integration initiatives.
- Strategize to benefit optimally from the financial, technological and capacity development resources offered by global initiatives.
- Enhance capacities to develop domestic innovation and local manufacturing of technologies. This requires coordinated support from the private sector, government and donor and international partners.
- Track successes and failures by putting in place a robust framework for measuring progress against agreed indicators.

## 6. Industry

### Key messages

- African countries largely continue to export raw materials with low value added, resulting in low industrial development.
- Inclusive green growth opportunities are emerging in the agribusiness, agro processing, mineral and metals, regional, South-South and global value chains.
- African Governments have recognized the enhanced benefits that can accrue from the extractive industry through manufacturing value addition and value chain development.
- Existing and emerging voluntary and mandatory international and national sustainability frameworks are facilitating and integrating responsible production and processing in industry and contributing to inclusive green growth.
- Artisanal and small-scale mining is increasingly being acknowledged as a source of livelihood for rural communities in many African countries and as a significant contributor to economic growth.

Africa's natural resource endowment can propel a commodity-based industrialization and economic structural transformation that could shift the sectoral composition in favour of high-productivity activities, especially manufacturing and modern services (ECA, 2013a&b). Such industrialization can be oriented to promote inclusive green growth that fosters resource use efficiency and ecosystem integrity, create jobs, generate income and wealth, lift millions out of poverty and improve human welfare.

The region has about 12 per cent of the world's oil reserves, 42 per cent of its gold reserves, 80 to 90 per cent of its chromium and platinum group metals, and 60 per cent of its agricultural land and vast forest and timber resources (ECA, 2014). The non-oil resource-rich economies, on the other hand, were principally driven by mineral and metal commodities, such as gold, copper, platinum, manganese and uranium.

There is evidence of a correlation between industrialization (manufacturing value added) and economic growth that increases productivity, generates income, reduces poverty and provides opportunities for social inclusion. Manufacturing value added also brings about productive employment (more than agriculture) and improves not only the number of jobs but also their quality in all countries (UNIDO 2013).

### Trends in inclusive green growth in the industry sector

Manufacturing value addition of mineral and metal production: The increasing valorization of limestone for clinker production is driving sub-regional and regional value chain development, and supporting the building and construction industry for infrastructure development. The limestone processing, clinker production and cement terminals in Africa are being pursued vigorously by the Nigerian private sector. Similarly, the alumina-al-



uminium-aluminium metal fabrication manufacturing value added in West Africa, Central Africa and South-Eastern Africa provide lessons for strategically increasing manufacturing value chain development to contribute to inclusive green growth.

Inclusive green growth in the agro-industry sub-sector: Countries with higher growth rates in agriculture perform better in poverty and hunger reduction as recorded by Algeria, Botswana, the Democratic Republic of the Congo, Equatorial Guinea, Ghana, Liberia, Rwanda, South Africa and Tunisia. Analysis conducted by ECA on African agriculture value chain linkages concluded that promoting agriculture and agro-industry as agri-business and manufacturing industry value chain development, can greatly enhance job creation, agricultural transformation and broad-based growth on the continent (ECA, 2012). There are emerging private and public partnerships in the agribusiness, agro-industry and services (including markets) value chain development approaches delivering very successful outcomes in Africa.

## Challenges and opportunities

### Challenges

Challenges to inclusive green growth in the industry sector have to do with low industrial competitiveness. Some of these are:

- Low manufacturing value added and share of global value chains in the mineral and metal industry.
- Unavailability of adequate and reliable electricity generation and supply.
- Low local content, limiting downstream and upstream linkages.

- Weak enforcement, compliance monitoring and promotion of national environmental legislation and sustainability frameworks.
- Environmental degradation and mercury pollution in artisanal small-scale mining.
- Vulnerability of agricultural productivity and agro-processing manufacturing value chain to climate change impacts.
- Inadequate financing, infrastructure, technology transfer and capacity-building for manufacturing value addition and value chain development.

### Opportunities

- Improving industrial competitiveness to contribute to well-being. Enhancing manufacturing value added growth in Africa, driven by the current environment of high global demand and commodity prices can absorb the millions of new entrants to the labour force every year, in an effort to reduce high unemployment.
- Recognition of artisanal small scale mining as a significant contributor to gross domestic product. Artisanal and small-scale mining is increasingly being perceived as a sector with many beneficial entry points for advancing inclusive green growth. It can create jobs, and generate income and wealth by enhancing local community access to natural and financial capital.
- Industrial policies that drive innovation, technology transfer, adaptive capacities and regional markets. Appropriate industrial policies that drive technology transfer and integrate social and environmental concerns are potentially useful tools for spurring inclusive green growth. Green technologies should lead to clean, resource-efficient and resilient growth.

### **Box 5: Integrating inclusive green growth in private and public partnerships in agribusiness, agro-industry and services value chain development**

#### **Cassava value chain and value addition development and operation in Nigeria, Ghana, and Mozambique**

Cassava value chain and value addition development and operations with markets have been established in Nigeria, Ghana and Mozambique for the production of raw material for breweries, flour mills and cassava starch end users. The programme targets emerging markets for substitution of agro-food inputs in the brewery and flour mill sectors. FAO estimates the cassava products market value by 2015 in Nigeria at 350,000 tons of starch, 340,000 tons of flour to replace 35 to 40 per cent of malted barley in the flour mills, and 1.5 million tons of bio-ethanol to meet Nigeria's NAMA to achieve 10 per cent renewable energy penetration in the transport fuel. In Mozambique, the demand is estimated at 40,000 tons per annum and in Ghana 30,000 tons, all for replacement of up to 70 per cent of malted barley for beer production.

The effective mobilization of credits, extension services to smallholder cassava farmers, and mobile agro-industry technology for on-site processing of the cassava tuber is achieving economies of scale and delivers high-capacity utilization of the processing plants. The downstream linkages with stable national, regional and international markets in Europe have also created stable markets and income for the smallholder farmers. The value chain operations are estimated to achieve income generation for 1,500 smallholder farmers in Mozambique, another 1,500 smallholder farmers in Ghana and in excess of 1.5 million jobs in Nigeria ([www.dadtco.nl/partnerships](http://www.dadtco.nl/partnerships)).

#### **Fresh fruit value chain and value addition in Ghana, Egypt and South Africa**

Fresh fruit value chain and value addition in Ghana, Egypt and South Africa for supply of quality fresh juice and cut fruits is another good example of transforming the fruit industry value chain. Blue Skies was established in Ghana in 1998. The company processes fruits and prepares them into ready-to-eat salads and juices, using a wide range of fruits that include pineapple, mango, passion fruit, papaya and coconut sourced from Ghana, melon and pomegranate from Egypt, melon from South Africa and mango from Brazil. The company has expanded its operation to Egypt, South Africa and Brazil, targeting the emerging markets in regional economic communities of Africa, South-South cooperation and Europe (United Kingdom, France and Portugal). The production has grown to 5,354 tons in 2010 with a total market value of 25.771 million pounds, while employment doubled from 1,000 in 2008 to 2,000 people in 2010 in the three African countries and Brazil.

The fresh fruit case also represents African value addition, tapping into global value chains, competing and sustaining international markets through meeting stringent national, regional and international environmental and quality certification standards. The company has 2,000 employees, with 45 to 70 per cent of women in the managerial staff in Ghana, South Africa and Brazil; but less than 1 per cent in Egypt, which is attributed to cultural norms. Significantly, over 90 per cent of the employees are recruited from the local communities and trained to ensure inclusiveness.

- Integration of existing and emerging national and international sustainability frameworks. For example, the existing performance standards on environment and social sustainability frameworks of the World Bank, the Extractive Industry and Transparency International, the United Nations Compact and the implementation of the Equator Principles are key sustainability frameworks that could facilitate the mainstreaming of inclusive green growth.

### **Conclusion and policy recommendations**

Most African countries continue to export raw materials with low manufacturing value added and value chain, resulting in low industrial competitiveness and human well-being. Inclusive green growth presents a unique opportunity for bringing multiple and integrated solutions to the numerous challenges facing the African industrial sector. The renewed drive to accelerate the structural transformation of African economies, supported by the various industrial development

frameworks and programmes, can provide the much needed push to increase and sustain productivity, ensure productive employment, job security, income and wealth generation and shared prosperity.

In addition to enabling conditions such as a well-functioning market economy, adequate infrastructure, efficient energy systems, African Governments are enacting local content policy and legislation that explore opportunities for driving local investment, developing manufacturing value chains, supporting the development of an advanced services sector and leveraging opportunities for innovation, including upstream, downstream and side-stream linkages. This is expected to increase the participation of local businesses (including small and medium enterprises) and industry associations in the value chain, so as to maximize the social and economic benefits of the industrial sector. The emerging industrial policies on manufacturing value added, complemented by voluntary and mandatory sustainability frameworks of project financing institutions that address the environment, and social impact challenges in the extractive industry and manufacturing value chains have the potential to drive inclusive green growth in the sector.

The lessons learned can inform the implementation of the following key policy recommendations, which calls upon countries to:

- Ensure that structural transformation and industrial policies and strategies mainstream inclusive green growth, to further expand economic growth potential, craft a low-carbon and resource-efficient development path that creates jobs, generates wealth and income, improves human welfare and reduces inequalities.
- Ensure that while national industrial development frameworks should be tailored to each country circumstance, they should

also comply with relevant frameworks of the Conference of African Ministers of Industry.

- Promote value addition, increase industrial competitiveness and the share of global value chains. This calls for, among other things, development of local capacities such as skills, expertise and know-how in industry value chains.
- Increase the number and diversity of local businesses securing economic benefit from government contracts, there by increasing local participation, job creation and shared prosperity in the supply chain management.
- Align artisanal and small-scale mining operations with relevant development priorities to ensure that the sector provides an opportunity for inclusive green growth that benefits women, the youth and marginalized communities.
- Subscribe to international sustainability frameworks and promote national initiatives aimed at building consensus and setting voluntary standards for responsible production and processing.
- Support research and governance mechanisms for industrial innovation and competitiveness in order to promote the adoption of technologies that create opportunities for developing green products, such as organic food and responsibly mined and processed mineral and metal commodities.
- Sustainably exploit Africa's energy resource endowments to drive its quest for structural transformation and industrialization. To that end, energy efficient measures should be adopted to complement the production of green energy.

## 7. Trade

### Key messages

- Trade has the potential to spur inclusive green growth in Africa and support the transition to an inclusive green economy. However, this can only be achieved if comparative advantages in sustainably produced goods and services are exploited.
- Infrastructure investments are also critical to keeping down transaction costs and ensuring the trade competitiveness of African “green” goods in a globalized marketplace.
- Aside from eliminating trade-distorting tariffs and taxes, trade-driven inclusive green growth also requires fiscal reforms that should include the removal of unproductive subsidies, such as those on energy and energy-intensive products.
- Given the broad range of challenges that various African countries face, no one set of trade-promoting reforms, policies or strategies would apply to every region.
- The drivers of the green economy transition in Africa are the same forces that would reinforce Africa’s comparative advantage in trading green goods.

Trade plays an important role in the world economy and can spur economic growth on the African continent. It reflects the preferences of firms and consumers on the world market, making the environmental and social outcomes of international trade vital to the green economy. Trade can foster inclusive green growth in Africa, as countries can expand the goods and services produced, create decent employment opportunities and enhance economic ties with the rest of the world.

The green growth strategies being adopted by African countries could accelerate investment in resource-efficient technologies and new industries, while managing costs and risks to domestic taxpayers, businesses, communities and consumers (GGBP, 2014). African countries can achieve inclusive green growth within a highly globalized and competitive world market by harnessing the abundant natural resources that also provide a broad range of benefits across the various sectors of society. Agricultural and non-agricultural products that can satisfy the demands of environmen-

tally conscious consumers range from eco-friendly household goods to clean and renewable forms of energy.

### Potential for fostering inclusive green growth and the green economy transition through trade

Extractives, particularly fossil fuels, raw ores, and metals dominate Africa’s exports to the rest of the world. The composition of African exports to the rest of the world shifted very strongly towards fossil fuels from 1995 to 2012 (Figure 90). Greening of trade flows in Africa will require a significant reduction in material intensities (increased efficiency in resource use) and carbon emissions associated with trade flows. For Africa to achieve inclusive green growth within a highly globalized and competitive world market, it must create a strong comparative advantage in producing goods that are green and provide a broad range of benefits across the various sectors of its society.

**Table 3: Selected examples of potential for greening growth with trade**

Regions	Sector reforms that help to "green" trade	New trade opportunities in eco-goods	Greening growth through trading energy and carbon
Eastern and Southern Africa			
Kenya		Eco-labelling of goods Eco-tourism	Carbon credit trading
Zambia	Conservation agriculture		
Ethiopia	Re-greening highlands	Eco-labelling	
South Africa	Marine fishing sector reforms	Trade in environmental goods Eco-tourism	Carbon credit trading
Mauritius		Greening export-oriented manufacturing	
West and Central Africa			
Burkina Faso	Reforms in cotton sector		
Nigeria		Re-manufacturing	
Democratic Republic of the Congo			Exports of hydropower
North Africa			
Morocco	Removing energy subsidies		Solar energy exports to the European Union

Sources: World Bank 2012; UNEP 2012; Reij and others, 2009.

### Trends in fostering inclusive green growth through trade

Inclusive green growth is being promoted through sectoral reforms aimed at creating new opportunities for trade in sustainably produced goods and services. Countries are also promoting carbon trading and the direct trade of renewable energy. Examples exist, where sectoral reforms have led to the removal of wasteful distortions and reallocation of resources, resulting in resource-efficient production patterns and more trade. The enhanced trade flows could further reinforce the reallocation of resources, particularly when trade revenues are accessible by the poor, making economic growth broad-based and inclusive.

Sectoral reforms can also spur growth in the economy generally, as costs associated with wasteful resource use are eliminated. This is important for competitiveness in a highly globalized commer-

cial environment. This has been seen to occur in Africa, where a reduction in environmentally harmful and wasteful production practices, improvement of resource management and environmental stewardship, and increase in energy and resource efficiency had positive impacts on the economy. Examples include the adoption of conservation agricultural practices in Zambia, improved forest management in Ethiopia, improved marine resource management in South Africa and Senegal, and reform of energy subsidies in Morocco (table 7).

Specific good practice case studies include tapping the trade potential in the renewable energy subsector in Morocco; promoting ecotourism for enhanced trade in Eastern Africa; carbon trading in Kenya and South Africa; and promoting inclusive green growth in the agriculture sector in Rwanda through trade.

### Box 6: Promoting inclusive green growth in the agriculture sector in Rwanda through trade

Given the prominence of agriculture in Rwanda's economy, it has made the sector a central part of its green growth strategy. As discussed in its own policy document (Government of Rwanda, 2011), promoting a green growth strategy and building resilience to climate change are synonymous and closely linked in their national policies towards the agricultural sector. The country's strategy is aimed at identifying the exportable agricultural and manufactured products that can best compete in the regional and world markets, and whose productivity can be enhanced by the implementation of technologies and practices geared towards sustainable intensification and the building of climate resilience in small-scale farms (OECD, 2012). A key element of this strategy is the targeting of niche crops that can be marketed under the "organic" and "fair-trade" labels, thereby taking advantage of the premiums placed on products branded for sustainable and pro-farmer practices, on international markets, and attracting the investments needed to make those sectors competitive. Coffee, tea and sugar are included in this strategy, and were targeted in the recognition that they would be subject to increasing environmental stresses from climatic change that might erode their future productivity and competitiveness if not addressed with new investments and better agricultural technologies and practices. Climate-stress effects are already noticeable in the coffee production of its neighbours, such as Kenya, and have served as an incentive for the Government of Rwanda to mobilize resources and policies around this issue. Given the high costs of transportation that Rwanda already faces, as a landlocked country, any efforts to increase productivity and enhance value on international markets is critical to its future as an exporter of high-value products – both to its immediate neighbours, as well as to the rest of the world.

## Challenges and opportunities

### Challenges

While trade can be a driver of inclusive green growth, some of its dynamics could actually undermine or create incentives that go against green economy principles. These include:

- Trade openness and wage competitiveness that often occasion overexploitation of the natural resource base, trade in environmentally sensitive goods and services and misuse of labour.
- Low manufacturing value added and share of global value chains in the mineral and metal industry.
- Unavailability of adequate and reliable electricity generation and supply.
- Low local content limiting downstream and upstream linkages.
- Weak enforcement, compliance monitoring and promotion of national environmental legislation and sustainability frameworks.

- Environmental degradation and mercury pollution in artisanal small-scale mining.
- Vulnerability of agricultural productivity and agro-processing manufacturing value chain to climate change impacts.
- Inadequate financing, infrastructure, technology transfer and capacity-building for manufacturing value addition and value chain development.

### Opportunities

- Inclusive green growth and the transition to a green economy should provide opportunities for African countries to take control of sustainable economic development and increase trade with the rest of the world.
- Strong political support for regional integration, which creates opportunities for economies of scale in energy generation and distribution, and other trade investments
- Higher trade returns on sustainably managed natural resources to correct the negative effects of trade on the environment.

- Enhanced benefits from global value chains and prevailing momentum for value addition, as promoted by supportive policies and stakeholder groups in many sectors, including agriculture.
  - Actualized role of foreign direct investments in influencing trade, and social and environmental outcomes of recipient economies.
  - Strong support for green projects from multilateral financial institutions and financial markets.
  - Improved industrial competitiveness to contribute to better well-being.
  - Recognition of artisanal small-scale mining, as a significant contributor to the gross domestic product.
  - Industrial policies that drive innovation, technology transfer, adaptive capacities and regional markets.
  - Integration of existing and emerging national and international sustainability frameworks.
- negative effects on the environment and ecosystems of Africa. There are challenges and opportunities, but overall, progress towards a greener and more inclusive socioeconomic growth path for Africa can be fostered through trade, if supported by an appropriate combination of policy reforms.
- African Governments should foster the comparative advantages of African producers in their production and export of sustainably produced products, to ensure that trade drives inclusive green growth and the transition to a green economy in Africa.
  - Africa should ensure adequate governance of natural resources, to prevent the unsustainable extraction of resources that undermine inclusive green growth efforts.
  - Resource-rich countries should consider establishing mineral revenue stabilization funds to improve the stewardship of resource-based revenues.
  - Countries with favourable agricultural potential should aim at maintaining the natural resource base on which production depends.
  - African Governments should not only focus on attracting more investment funds, but also deliberately targeting those investments that will spur inclusive green growth and benefit the green economy transition.
  - Africa should further explore opportunities in the carbon market by taking advantage of the huge potential in the renewable energy market. Additionally, the removal of price distortions is critical when implementing fiscal reforms, as part of an inclusive green growth strategy.
  - There is a need to reduce tariff and non-tariff barriers to further promote intra-Africa trade.

## Conclusion and policy recommendations

Several important policy interventions can promote inclusive green growth in Africa, and depending on a country's openness to trade and global markets, there are important interactions to be considered when designing country-level strategies for inclusive green growth. The transition to an inclusive green economy will require a broad set of reforms and institutional innovations to catalyse and nurture sectoral innovations that are consistent with the vision. The extent to which these reforms are carried out will largely determine whether or not they can encourage trade and openness to global markets without having

- African Governments should recognize and leverage the significant contribution of the private sector to economic growth, through innovation, technology transfer and diffusion and strengthening trade linkages in global value chains to spur inclusive green growth.
- African countries should take advantage of the renewed political commitment towards accelerating regional integration and economic transformation.



## 8. Enabling measures

### Key messages

- Political economy analysis should be carefully undertaken to drive and manage the process of the green economy transition, given the shift of resources and the likely winners and losers that would result from the transition.
- Good governance, a robust institutional framework, and capacity for coherent policy development and implementation are fundamental to effectively implementing all the enabling measures for inclusive green growth, and a well-managed transition.
- Targeted public spending and investment in key pro-poor sectors, especially in agriculture, energy, infrastructure, water and waste management, should be strategically used.
- Well-developed local innovation capacity, enhanced technology transfer, innovative financing solutions and regional integration are key to driving inclusive green growth, and the transition.

African member States, in their common position for Rio+20, emphasized that in order for Africa to benefit from the transition to a green economy, its promotion in the region should be underlined by national development imperatives and the attainment of internationally agreed sustainable development commitments. Efforts to make the transition towards an inclusive green economy are, however, still in the early stages. Also, there is lack of empirical evidence of a successful transition towards inclusive green economy at an economy-wide scale in Africa and other regions.

The impetus for addressing development challenges and driving structural transformation of African economies is presenting new opportunities for Africa's development, using inclusive green growth, for instance, as a vehicle. Inclusive green growth policies and approaches can contribute to achieving transformation towards a more diversified, value-added, sustainable and equitable economic system.

### Enabling measures

Inclusive green growth requires an optimal combination of measures to lead to increased productivity, value addition and competitiveness; generate social benefits with decent jobs, improved livelihoods and welfare; and enhance natural capital and environmental resilience. Enabling conditions need to be established at the subnational, national, subregional, regional and global levels to maximize positive synergies between environmental sustainability, human development, equity and economic growth.

### Institutional framework for integration, coherence and inclusion

High-level political commitment from Government for the institutional framework that enables cross-sectoral approaches is fundamental to spurring inclusive green growth and driving the transition.

Policy coherence between different sectoral policies and between economic, fiscal, social and

### Box 7: The Green Fund in South Africa

The Government of South Africa, through its Department of Environmental Affairs, has made available R 1.1 billion over three years to initiate a Green Fund. The Fund is aimed at facilitating investment in green initiatives to transition South Africa to a greener economy and support socioeconomic development. The establishment of the Fund is a collaboration between the Development Bank of Southern Africa, as the implementing agency, and the Department of Environmental Affairs. 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 capacity to mainstream green and climate issues into the South African economy and society;
- (d) Build an evidence base of projects to inform future green programmes; and
- (e) Attract additional resources through leveraging and blending of resources (financial and otherwise).

environmental policies is crucial to achieving resource efficiency and inclusiveness, taking into account issues of gender, climate change, employment creation and innovation.

Ensuring adequate budgetary allocation and investments from different fund sources, priority interventions identified in policies and plans will need to be costed in quantifiable terms with time-bound targets.

Institutional capacity should be strengthened to ensure transparency, inclusiveness and consensus-building among multiple stakeholders, by adopting a gradual, incremental approach, and establishing a governance body capable of assessing potential risks and addressing failures before and when they occur.

#### **Appropriate mix of policy instruments**

Promoting positive synergies among economic growth, social equity and environmental sustainability and address potential trade-offs.

Market-based instruments for correcting market failures that lead to overuse and inefficient use of resources, generation of environmental externalities, such as pollution and disincentives to cleaner and more sustainable technologies and services.

Instruments targeting quantities, including permit systems that are rights- or quantity-based, and designed to control the quantity of the emissions

or environmental goods or services and allow the market to determine the price.

Environmental fiscal reforms to increase fiscal revenues through pollution charges or taxes and reduce fiscal expenditures through the removal of perverse subsidies for environmentally unsustainable activities.

Other measures include cost-reflective tariffs, feed-in tariffs and tools to support payment for ecosystem services.

#### **Policy measures complementing market-based instruments**

Market-based instruments alone cannot spur inclusive green growth. Additional instruments, such as regulations, certification systems, standards, information-based tools, voluntary compliance measures and sustainable public procurement policies are needed. These non-market instruments include regulations, promotion of local content, sustainable public procurement and other voluntary approaches that facilitate better informed decision-making by consumers and users, for instance, in labelling and rating programmes.

**Targeted public spending and investment in pro-poor sectors**, including agriculture. Infrastructure development and directing more public support through targeted public investment and spending in pro-poor green innovation and technology development.

### **Capacity development**

The importance of capacity development at the individual, organizational and enabling environment levels for inclusive green growth and for ensuring an effective transition is recognized at the international, regional and national levels. Capacity development is necessary to enhance awareness and understanding and behavioural change. In order to foster inclusive green growth and drive the transition, countries such as Ethiopia, Mozambique, Rwanda and South Africa have identified some capacity-building areas, as part of their inclusive green growth/economy strategies or plans (Government of Ethiopia, 2011; Government of Mozambique, 2012; Government of Rwanda, 2011; Government of South Africa, 2011). Enhancing and scaling up capacity development in the region will require strengthening in-house capacity at the national and regional levels to tailor and deliver capacity development that responds to the specific circumstances at these levels.

### **International and regional cooperation**

While it is important to establish appropriate institutional mechanisms and policy instruments at the national level, international coordination and cooperation are necessary to complement domestic efforts. This will help address the international inequities observed between developing and developed countries. These include trade opportunities and greenhouse gases accumulated, which have put an additional development burden on developing countries in Africa. International cooperation is essential in allowing African countries to invest in environmental sustainability while pursuing their development rights to grow in a rapid and sustainable manner. Investing in climate change entails promoting international cooperation and conserving the biodiversity and ecosystem, which have global benefits. It requires

coordinated and targeted financing efforts at the regional and international levels. In addition to the regional cooperation in Africa, South-South cooperation is key, as a framework for collaboration, to drive investment and trade flows into pro-poor greener goods and services.

### **Conclusion**

The impetus for addressing development challenges and for driving the structural transformation of African economies is presenting new opportunities for Africa's development. Inclusive green growth policies and approaches can contribute to achieving transformation towards a more diversified, value-added, sustainable and equitable economic system. Inclusive green growth requires an optimal combination of measures to: enable growth through increased productivity, value addition and competitiveness; generate social benefits with decent jobs, improved livelihoods and welfare; and enhance natural capital and environmental resilience. Enabling conditions need to be established at the sub-national, national, subregional, regional and global levels to maximize positive synergies that can exist between environmental sustainability, human development, equity and economic growth.

While it is important to establish appropriate institutional mechanisms and policy instruments at the national level, international coordination and cooperation must complement domestic efforts. Additionally, international and intra-regional trade have the potential to spur inclusive green growth and drive the transition, if the adequate enabling environment is established for African countries to benefit equitably from global and regional trade.

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