



Inclusive green economy policies and structural transformation in Ethiopia



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Acronyms and abbreviations

CO _{2e}	carbon dioxide equivalent
ECA	Economic Commission for Africa
ESCAP	Economic and Social Commission for Asia
GDP	gross domestic product
ha	hectare
ILO	International Labour Organization
IMF	International Monetary Fund
km	kilometre
LPG	liquefied petroleum gas
MW	megawatt
NGO	non-governmental organization
ODA	official development assistance
OECD	Organization for Economic Cooperation and Development
REDD	Reducing Emissions from Deforestation and Forest Degradation
SMEs	small and medium enterprises
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNRISD	United Nations Research Institute for Social Development
VAT	valued added tax

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Executive summary

Introduction

The Government of Ethiopia has expressed its determination to achieve structural transformation, as reflected in its Growth and Transformation Plan, which was adopted in 2010 and has been the key medium-term development plan for the period 2010/11-2014/15.¹ Although rapid growth is necessary to reduce poverty, growth will be unsustainable in the long run unless it is both socially inclusive and environmentally sound. Accordingly, Ethiopia has embarked on a national strategy of building a climate-resilient green economy.² Transitioning to an inclusive green economy is receiving growing attention as a pathway that can lead to sustainable development. It entails a low-carbon, climate-resilient, resource-efficient, environmentally sustainable and socially inclusive growth path, thus promoting the achievement of internationally agreed development goals, including the Millennium Development Goals and the sustainable development goals, which are expected to be adopted as part of the post-2015 development agenda in September 2015.

The main objective of this report is to explore the linkages and contribution of inclusive green economy policies and strategies to structural transformation in Ethiopia. In this regard, the report provides an assessment of how inclusive green economy-related policies can reinforce the structural transformation agenda of Ethiopia; and how structural transformation policies and strategies can enhance the development of an inclusive green economy. The intent is to enhance understanding and promote the adoption of inclusive green economy policies that will contribute to achieving the structural transfor-

mation goals of Ethiopia. The report is timely, as it will inform the ongoing preparation of Ethiopia's second generation Growth and Transformation Plan.

Ethiopia's macroeconomic framework

The Government has designed macroeconomic policies aimed at ensuring sustainable and equitable development outcomes. Both fiscal and monetary policies are geared towards supporting the Government's objectives of a sustainable and inclusive development trajectory. The Government has identified spending priorities and increased its budgetary allocation to green and social sectors such as agriculture, education, health, and infrastructure. In particular, capital expenditure allocated to these sectors increased by about 32 per cent between 2004/05 and 2012/13. Likewise, credit to these sectors has increased. In particular, credit to natural resource-based sectors such as agriculture, mining, power and water grew on average by 29 per cent between 2006/07 and 2012/13. A large share of credit has been channelled to agriculture, indicating that monetary policy has been in support of natural resources-based sectors. Both fiscal and monetary policies have also been instrumental in curbing inflation and protecting the economically disadvantaged segment of the population, through initiatives such as the subsidized distribution of basic food items (in urban areas) and the reduction of credit to non-priority sectors.

As result of the various macroeconomic interventions, Ethiopia has experienced solid progress in key economic and social indicators. The country's economic growth has been the result of an expansion of the services and agriculture sectors. About 52 per cent of the growth in value added has been attributed to the services sector be-

¹ The Growth and Transformation Plan was adopted and implementation began in 2010/11.

² In this report, we consider climate-resilient green economy to be the main inclusive green economy strategy; the terms are therefore used interchangeably.

tween 2003/04 and 2012/13. The agriculture sector, meanwhile, accounted for 36 per cent of value added growth. Industrial sector performance was relatively meagre with a value added contribution of just 12 per cent.

Rapid economic growth has led to a fall in income poverty in both rural and urban areas, especially since 2003/04, with 3.7 million people moving out of poverty in 2010/11. The rate of decline in the incidence of poverty was at a slower pace than the gross domestic product (GDP) growth rate in 2010/11. Poverty incidence declined in both rural and urban areas. The fall in urban poverty can be attributed to the boom in construction activities, increased private sector investment in certain sectors, such as services, and the expansion of small and medium enterprises. However, the severity of poverty has increased in recent years, indicating that growth has failed to adequately reach the poorest segment of the population.

Ethiopia has also made some progress in enhancing the inclusiveness of its growth process. Inequality at the national level, however, has not decreased. While income inequality in 2010/11 declined in urban areas, it increased in rural areas. The Government's strong focus on urban development and improved employment creation, especially labour-intensive infrastructural development, expansion of small and medium enterprises, improved access to credit, and training could have contributed to the decline in urban inequality.

The quality of human development is also improving in Ethiopia owing to improved access to education and health services. Ethiopia is experiencing rising skill intensity, especially in the skilled and semi-skilled labour forces, due to the expanding technical and vocational education and training and tertiary education across the country. The net enrolment rate has increased at primary, secondary and tertiary levels. Similarly, efforts to achieve universal access to basic health services have resulted in improvements in maternal and infant mortality rates. Ethiopia

is well ahead in achieving the Millennium Development Goals on health and education. Access to basic infrastructure such as roads, water, and power, has also improved due to massive government-led investment.

Although the gender parity index has improved both in the primary and secondary education levels, Ethiopia has yet to achieve gender parity in lower primary, secondary and preparatory levels of education. The country has shown more progress in gender parity at the upper primary level than at other levels of education. However, gender inequality has remained worrisome at the preparatory level.

Despite some progress, access to potable water and electricity continues to be a concern, especially in rural areas. A large proportion of rural households depend on unsafe sources of water including unprotected wells, rivers, lakes, and rainwater for drinking. Similarly, while the majority of rural households depend on biomass for energy sources, such as firewood for cooking, a large share of urban households, representing about 18 per cent of total population, have access to modern electricity. These features of spatial inequality in terms of access to water and modern energy suggest that designing and implementing inclusive green economy policies and strategies could help arrest greenhouse gas emissions from deforestation and improve access in rural and urban areas.

The pace of overall employment growth has accelerated in recent years, with increased labour force participation rates. The sectoral structure of employment reveals that the share of employment in agriculture has declined from 80.3 per cent in 2005 to 72.7 per cent in 2013. The employment shares of the manufacturing and services sectors in total employment have remained low. This indicates that the vast majority of jobs are still connected to the extraction of natural resources, such as agriculture, and dominated by smallholders. In addition, the informal sector has become an important source of livelihood, especially in ur-

ban areas. Informal sector jobs are precarious or unprotected, as informal workers are less likely to have a formal work arrangements ensuring continuity of work and social protection. These features imply that inclusiveness remains a concern.

While aggregate labour productivity increased between 2005 and 2013, sectoral variations are noticeable. Labour productivity levels have remained low in two productive sectors: agriculture and manufacturing. In 2013, employment expansion was accompanied by a contraction in labour productivity in the transport and communications sector. Three sectors showed strong growth in labour productivity between 2005 and 2013: manufacturing, construction, and wholesale and retail trade. Although economy-wide labour productivity growth was accompanied by employment growth, the growth of the latter was not strong, as reflected by the low value of the overall employment elasticity—an indicator of the response of employment to changes in value added or GDP.³ Employment elasticity has remained low in agriculture, manufacturing and wholesale and retail trade.

While employment grew in the majority of sectors, real income declined. Low wage paying sectors include hotels and restaurants, agriculture, wholesale and retail trade, and manufacturing. These sectors pay below the economy average wage (421.7 birr⁴ per month in real terms in 2012) and at the same time, labour mobility occurs between these sectors. This indicates that labour mobility occurred from a low paying sector to another low paying sector. This type of labour reallocation is not useful from the point of view of productive employment and of achieving inclusive growth.

Overall, the macroeconomic framework has been conducive to an inclusive green economy approach, as reflected by spending priorities, budgetary and credit allocations, protection

of vulnerable segments of the society, and ensuring macroeconomic stability. Both the fiscal and monetary policies of the Government are aimed at restoring macroeconomic stability (e.g. controlling inflation), protecting the vulnerable segments of the population, and channelling budget and credit to poverty-oriented sectors and natural resource management.

Ethiopia's structural transformation agenda

The challenge for Ethiopia is not only speeding up the transformation process, but also enhancing the inclusiveness of that transformation. Structural transformation is driven by the need to transform the economy and to translate the rapid economic growth into sustained and inclusive growth through economic diversification that creates productive jobs, reduces poverty and inequality, and enhances access to basic services. Accordingly, the Government of Ethiopia has embarked on structural transformation agenda as reflected in its Growth and Transformation Plan, adopted in 2010 and which became effective in the 2010/11 fiscal year. The Plan gives due emphasis to promoting the agricultural and manufacturing sectors. While maintaining the emphasis accorded to the agro processing and construction industries, it also gives priority to the chemical and metallurgical industries aimed at developing a dynamic industrial sector that supports the transformation initiatives of the country. The Plan also recognizes the importance of environmental issues such as climate change and conservation and management of natural resources for sustainable structural transformation. The transformation agenda of the country has therefore been grounded in sectors that ensure economic, social and environmental sustainability.

³ Employment elasticity indicates the change in employment due to a change in value added or gross domestic product (GDP). Economy-wide employment elasticity is the ratio of the percentage change in employment to percentage change in GDP.

⁴ In 2012, the exchange rate was: US\$ 1=18.0 birr.

Ethiopia's inclusive green economy strategy

Ethiopia has been a champion of the green economy as reflected by the landmark developments in green economy-related policies and initiatives since the early 1990s. Although the approach thus far consisted of the formulation of supporting policies, mainly at sectoral levels, a consolidated green economy policy framework is the Climate-Resilient Green Economy Strategy. The Strategy has two building blocks: green economy and climate-resilient strategies. Sector reduction mechanisms are being developed to guide the integration and implementation of climate-resilient green economy investments as part of federal and regional plans. Ethiopia has also cascaded the Strategy to the sectoral level and many of the sectoral strategies have been incorporated into the Growth and Transformation Plan. The green economy vision, as articulated in the strategy, is not only consistent with the structural transformation plan but also reinforces the country's long-term economic vision.

Linkages and coherence between inclusive green economy and structural transformation strategies

In terms of synergies between inclusive green economy and structural transformation policies, a key feature of Ethiopia's green economy effort is combining a long-term target to reflect the general vision, with short- and medium-term targets to guide concrete actions. Synergies between climate-resilient green economy and structural transformation policies feature prominently at two levels: policy/plan development and implementation. The Government of Ethiopia has used multiple criteria to prioritize and select a small group of green economy priority options, including local relevance and feasibility, alignment with Growth and Transformation Plan, and low-cost abatement potential. Accordingly, four initiatives have been selected to fast-track implementation of the Climate-Resilient

Green Economy Strategy: hydropower development, rural cooking technologies, the livestock value chain, and forestry development. These initiatives offer the prospect of immediate economic growth and large carbon abatement potential. Such policy integration helps to maximize synergies between environmental, social, and economic development outcomes and manage the costs, trade-offs, and uncertainties. Consistent with the vision of achieving sustainable transformation in the long-term perspective, a broad range of sector-specific green initiatives have been launched and integrated into Ethiopia's transformation plan at the national level.

The transition to an inclusive green economy pathway not only provides 'win-win-win' outcomes in terms of improved economic performance, environmental protection and social development, but also involves trade-offs in the short term. Efforts to 'green' production are likely to increase short-term production costs, as new production technologies are introduced. The increase in production costs could have an impact on the overall competitiveness of locally produced products in national, regional and international markets, at least in the short-run. However, in the long run, the country will be competitive in the regional and global markets by supplying low-carbon goods and services (e.g. manufactured goods and green energy).

In order to maximize the synergies and minimize trade-offs, policy instruments need to be selected and applied based on their dynamic net benefits to the society as well as their capacity to trigger green structural transformation. This involves shifting investment towards a new generation of assets, such as clean technology, high-productivity farming, renewable energy, resource-efficient infrastructure, well-functioning ecosystems, and green skilled labour. Moreover, the transition from the current agricultural practices towards green agriculture and related enterprises requires significant investments in irrigation, water and soil conservation, education, extension, as well as strong commitment to promoting and implementing the green economy.

Alignment of the Strategy indicators and targets with those of the Growth and Transformation Plan is important to identify and assess synergies and trade-offs among the economic, environmental and social dimensions. Currently there is a disconnect between the Strategy and the Plan in terms of targets. For example, while the Growth and Transformation Plan targets are expressed in terms of activities (e.g. area covered in afforestation, irrigated area, area rehabilitated, water coverage, health coverage), the Strategy targets are only expressed in terms of emission reductions, suggesting a need to harmonize targets and indicators to monitor the progress towards the green economy. In addition, although the Strategy has dealt with economic and environmental issues, it does not take into account the social dimensions, which means that it is difficult to know the distributional consequences of green interventions. Clear monitoring and evaluation mechanisms and an implementation roadmap are also lacking in the Strategy. This highlights an area where lack of data is likely limiting the ability to establish adequate measurement and feedback mechanisms.

Although there is some progress in terms of integrating inclusive green economy policies of selected sectors into the Growth and Transformation Plan, there is no effort in mainstreaming inclusive green economy indicators into the national accounts. The focus of policy design on an inclusive green economy means that there is a need to go beyond the conventional measurement of economic performance. In the current practice of national accounts, environmental services and costs have remained unmeasured, leading to an under- or overestimation of overall economic, environmental and social progress. This calls for a search for mechanisms to measure inclusive green economy policies or tools and methodologies in terms of factoring in the environmental and social costs of growth for measuring growth and wealth accounting. In light of this, there is a need to expand the national accounts for informed economic, social, and environmental management.

Other enabling measures

Apart from the inclusive green economy strategies, policies and instruments put in place, there are other enabling measures at national, subregional, regional and global levels that are facilitating the transition to an inclusive green economy to achieve the set of structural transformation goals. These enabling measures reinforce the processes already set in motion. The national level enabling measures take precedence over those at the global level since the former influence access to or the readiness to use the international level measures. Enabling measures include high-level commitment and leadership, favourable macroeconomic and policy frameworks including policy instruments and effective implementation mechanisms at the national level; emerging institutional and strategic frameworks for sustainable transformation and development at the regional and subregional levels; and international agreements and conventions at the global level.

Integrated assessment tools and methodologies

In Ethiopia, the commonly applied environmental and social assessment tools as national decision-making instruments include the environmental impact assessment and the integrated environmental and social assessment tools. However, their practical application has been beset by weak enforcement capacity as a result of a lack of trained human resources. In addition, the application of other analytical tools, such as the strategic environmental assessment or poverty and social impact assessment, has been limited. Available and commonly used modelling tools in Ethiopia include simple projections based on emission factors, sector-specific models (e.g. cost-benefit analysis) and macroeconomic models based on key macroeconomic variables, such as GDP, and population projections. Current efforts are limited to direct environmental and social impacts of projects, with limited focus on assessing the in-

direct impacts of inclusive green economy projects. Application of other modelling tools, such as system-wide and general equilibrium models has not been commonly used in key public institutions due to lack of capacity and skills. Other relevant analytical tools include sustainable development indicators and green accounting. Application of integrated assessment tools in Ethiopia indicates a huge capacity gap in public institutions, suggesting a need for a comprehensive capacity development programme.

Challenges and opportunities in the development and implementation of inclusive green economy strategies to reinforce structural transformation

Ethiopia faces a range of challenges in building an inclusive green economy: inadequate funding and investment is one. Despite some progress, Ethiopia's overall revenue generation performance has remained weak. Aid flows have declined as a share of GDP and are likely to remain low due to spending cuts by donors in the face of the severe budget deficits. Technological inadequacy is another challenge. Technology selection and adaptation requires adequate institutional capacity, human resources and facilities, all of which are scarce. Coping with that high population growth that is putting pressure on natural resources, and enhancing capacity to create more 'green jobs' are major challenge for the country. Lack of timely and adequate data for the formulation, monitoring and evaluation of development plans and interventions also poses challenges to the country.

Despite the number of challenges confronting Ethiopia in advancing an inclusive green economy to foster structural transformation, there are also a number of opportunities that the country can leverage. The commitment of top leadership to the inclusive green economy concept and the existing pro-poor development plans are opportunities to advance the approach. The country's

low levels of industrialization will allow it to leapfrog environmentally detrimental processes and promote green investment in the manufacturing industries and infrastructure. In that regard, Ethiopia has the opportunity to promote and invest in a low-emission transport and infrastructure sector through mass transport, particularly railways. Huge renewable energy potential, especially hydropower and geothermal energy creates opportunity for an inclusive green economy and attracts profitable ventures in the sector. A trainable labour force and low labour costs are also opportunities for the country to attract and encourage labour-intensive green activities, especially in the manufacturing sector. International financial cooperation and availability of assistance and access to environmental funds are another opportunity.

Conclusion and recommendations

Overall, the Government of Ethiopia is determined to transform the country into a middle-income country with zero-net carbon emissions by 2025 by implementing the Growth and Transformation Plan and the Climate-Resilient Green Economy Strategy. Strong linkages exist between the Plan and the Strategy. In order for the Strategy to foster structural transformation and promote inclusiveness, a number of deliberate, concerted and proactive measures in different areas are needed, including the following:

- (i) The Strategy needs to be improved by explicitly integrating social concerns into its economic and environmental dimensions both in the strategy document and at the implementation level. Alignment of the social aspects of the Strategy with the country's structural transformation plan is also required to identify the distributional consequences and compensation mechanisms of pursuing an inclusive green economy pathway;

- (ii) Climate-resilient green economy policy instruments, indicators, and targets should be harmonized with those of the Growth and Transformation Plan so that synergies and trade-offs among the economic, environmental and social dimensions, and across sectors can be easily identified and assessed. In light of this, the Strategy needs to be expanded to incorporate other targets that will enable comparability with the country's subsequent medium-term plans such as the second Growth and Transformation Plan;
- (iii) Monitoring and evaluation of climate-resilient green economy policies is important. Efforts to regularly monitor implementation of the Strategy should be mainstreamed into the country's structural transformation goals and plans to maximize their synergies and minimize trade-offs. An effective system for monitoring and evaluating progress in the implementation of relevant policies and programmes should therefore be established. However, the Strategy targets should be broadened to capture economic, social and environmental variables for effective monitoring and evaluation;
- (iv) Progress towards an inclusive green economy should be continuously assessed and green industries and jobs monitored and reported on as part of the country's statistics. This requires the strengthening of domestic capacity to collect environmental and social statistics, which are necessary for designing inclusive green economy indicators;
- (v) Firms should be incentivized to improve resource productivity, through for example, subsidizing the adoption of clean or environmentally-sound technologies and promoting green foreign direct investment;
- (vi) Access to inclusive green economy finance should be enhanced through, for example, establishing a special window for firms engaged in green initiatives. Loans or credit facilities need to be availed not only for investment, but also for capitalizing on green initiatives. In addition, direct funds at reduced interest rates should be extended to firms engaged in green production with the use of domestic resources, in order to encourage intersectoral linkages. This involves preferential treatment of firms that use local resources as inputs in their manufacturing process;
- (vii) The national income accounting framework needs to be expanded to include inclusive metrics by integrating environmental or natural resource accounting into the existing economic accounts;
- (viii) A comprehensive capacity development programme should be developed and implemented to strengthen the capability of key government institutions, especially to apply and use analytical tools for integrated assessment of inclusive green economy policies and strategies. Some of the tools and methodologies include environmental and social assessment, development planning and policy analysis models, and governance analysis tools. In this regard, support such as on-the-job training and short-and long-term training, which can be implemented in collaboration with (local) universities and research institutes, should be promoted. In addition, continuous capacity development programmes need to be designed to enhance awareness and knowledge of the inclusive green economy/climate-resilient green economy concepts for middle and lower government officials. Moreover, extensive awareness creation programmes regarding inclusive green economy/climate-resilient green economy concepts for communities at the grass-roots level should be implemented. These programmes can be integrated into the ongoing mass mobilization and training efforts, which can be organized and delivered through Farmer Training Centres in rural areas.

Key messages

Structural transformation is crucial to addressing Ethiopia's key development needs and challenges. In order to ensure the sustainability of this transformation, it should be carried out in a manner that at the same time ensures sustained economic growth, social development and environmental protection.

An inclusive green economy is increasingly recognized as a pathway that can lead to sustainable development enabling a low-carbon and climate-resilient approach, improved resource efficiency, healthy and more resilient environment, greater economic opportunities and inclusive societies. In this regard, alignment of inclusive green economy policies and strategies with domestic priorities not only minimizes trade-offs in the short-term, but also helps to accrue the benefits of inclusive green economy interventions and structural transformation in the short and medium term.

The green economy vision, as articulated in the Climate-Resilient Green Economy Strategy, is not only consistent with the structural transformation plan of Ethiopia, but also reinforces the country's long-term economic vision. Local relevance and feasibility, alignment with the Growth and Transformation Plan, and low-cost abatement potential have been key to enhancing synergies between environmental, social, and economic development outcomes.

The climate-resilient green economy policy development and implementation processes have been driven by high-level government leadership, which has been crucial in attracting and sustaining support from different stakeholders, with strong mandates and objectives. The development of strong and dynamic coalitions among State and non-State actors was instrumental in ensuring that this high-level support is main-

tained during political transitions. Having a shared vision and values agreed by stakeholders from the outset is paramount for continuity and stability when leadership changes.

Consistent and coherent policies are needed to reinforce structural transformation. Consistency between the Growth and Transformation Plan, the Climate-Resilient Green Economy Strategy and other inclusive green economy policy instruments at the national level is crucial in supporting a green transformation and enhancing the synergies between inclusive green economy policies and structural transformation strategies.

Inclusive green economy policies and strategies cut across different sectors and institutions, in this regard maintaining horizontal coherence among the different sectoral strategies is crucial to reinforcing the transformation agenda and thereby achieving the country's vision to achieve middle-income status along a green trajectory path.

Alignment of the Climate-Resilient Green Economy Strategy indicators and targets with those of the Growth and Transformation Plan is important for identifying synergies between the two approaches and assessing trade-offs among the economic, environmental and social dimensions. Harmonization of targets and indicators between the Strategy and the Plan will facilitate the development and implementation of a unified monitoring and evaluation system within the framework of the Growth and Transformation Plan.

Following green economy development pathway entails both green economy and 'green society'. Accordingly, the Climate-Resilient Green Economy Strategy needs to be further improved by adequately integrating the social and inclu-

siveness dimension in policy design and implementation, and in so doing, strengthen the links between the Growth and Transformation Plan and inclusive green economy strategies.

Ethiopia largely depends on natural resource-based sectors to propel growth and transformation. Achieving sustainable growth and transformation requires the use of resources in a more efficient and rational manner.

Inclusive green economy policies and strategies have the potential to reinforce structural transformation, but there are significant challenges that must be overcome to advance and promote an inclusive green economy transition in Ethiopia. Opportunities that can be capitalized upon include high-level Government commitment and leadership, low levels of industrialization, low urbanization, huge renewable energy potential, a trainable labour force and low labour costs, and access to international cooperation and support.

A suite of enabling measures is required to build an inclusive green economy. These include: international agreements and conventions at the global level; emerging institutional and strategic frameworks for sustainable transformation and development at the regional and subregional levels; and high-level commitment and leadership, appropriate policy frameworks and effective implementation mechanisms at the national level.

The transition to an inclusive green economy requires an extended set of new metrics that go beyond the prevailing focus mainly on economic indicators. In that regard, there is a need to institutionalize and build local capacity on the development and use of integrated assessment tools and methodologies for analysing and assessing economic, social and environmental progress and well-being.

1. Introduction

The progress made in adopting reforms collectively and individually by African countries in the past, and the achievements in terms of sustained growth have been impressive. However, many African countries remain home to the world's highest proportion of poor people and are not on track to meet some of the Millennium Development Goals, especially in human and social development. Additionally, there is widespread concern that this strong growth has not created sufficient productive employment in many African countries to lift large numbers of the population out of poverty (International Labour Organization (ILO), 2013; McKinsey, 2012).⁵ Africa's impressive growth can therefore be described as largely non-inclusive because of its limited contribution to job creation (United Nations Economic Commission for Africa (ECA), 2011).

Ethiopia, like other African countries, has achieved impressive growth, but with similar shortcomings and concerns. The challenge confronting Africa in general and Ethiopia in particular therefore is to translate the rapid economic growth into sustained and inclusive development that creates productive jobs, reduces poverty and inequality, and enhances access to basic services. Cognizant of this, Ethiopia has embarked on a structural transformation agenda as reflected in its Growth and Transformation Plan adopted in 2010/2011. Structural transformation, according to Kuznets (1966, 1989), is one that is characterized by a growing share of modern manufacturing and services and a declining share of agriculture in both output and employment, a rapid shift in the location of economic activities from rural to urban areas, and demographic transition from high birth rate-high death rate to low birth-low death rates. Such

transformation requires the expansion of economic activities and economic growth accompanied by the sustainable use of natural resources and maintenance of harmony in society, which, inter alia, necessitates the prevalence of high level of employment and low inequality and poverty. The overarching goal of structural transformation through expansion of modern economic activities with urbanization and demographic transition on the one hand, and environmental protection, sustainable use of natural resources and social sustainability on the other could be competing or complementary goals depending on the development strategy pursued.

Although rapid growth is necessary to meet the urgent development needs of the poor, growth will be unsustainable in the long run unless it is both socially inclusive and environmentally friendly (World Bank, 2012). As there is widespread acceptance that economic and social crises combined with unsustainable approaches to the environment no longer work, countries have been exploring new models of development (United Nations Environment Programme (UNEP), 2009). There is increasing recognition that economies need to be guided by development policies and strategies with the aim of attaining economic, environmental, and social sustainability. Such an economy is termed an inclusive green economy. An inclusive green economy ensures that the Earth's natural assets adequately provide the resources and environmental services on which humans depend and enables an inclusive improvement to people's living standards. Given that the goal of an inclusive green economy is to reduce poverty, promote equity, and create remunerative opportunities without harming the environment, there is a need to integrate these aspects into national development plans and policies.

⁵ On average, about 72 per cent of the youth population in Africa lives on less than two dollars a day. In addition, youth unemployment is estimated at 23.7 per cent in North Africa and 11.8 per cent in sub-Saharan Africa (ILO, 2013). In Ethiopia, the youth unemployment rate was 6.8 per cent in 2014, much lower than the sub-Saharan average.

Ethiopia is one of the leading countries in terms of developing a green economy strategy, namely the Climate-Resilient Green Economy Strategy (Federal Democratic Republic of Ethiopia, 2011). The goal of the Strategy is to transform the economy from low-income country status to a middle-income country status through a rapid economic growth path that at the same time reduces greenhouse gas emissions, and improves resilience to climate change. The extent to which the Strategy objectives and strategies dovetail with the Growth and Transformation Plan in promoting structural transformation is yet to be assessed. Likewise, the linkages and synergies between other inclusive green economy-related strategies and structural transformation plans still have to be reviewed, which underscores the importance of this report.

1.1 Conceptual framework

Inclusive green economy, a hybrid term combining 'inclusive economy' with 'green economy', is the latest addition to the development discourse (Poverty Environment Partnership, 2012). The concept of an inclusive green economy focuses on reducing environmental risks and ecological scarcities and improving human well-being and social equity (UNEP, 2012). By so doing, the inclusive green economy path overcomes economic free-fall, pervasive climate change, resource depletion, a rapidly increasing population, and debilitating poverty (Lipman and others, 2013). It is a development model promoted by various actors with nuances on its modality and objectives.

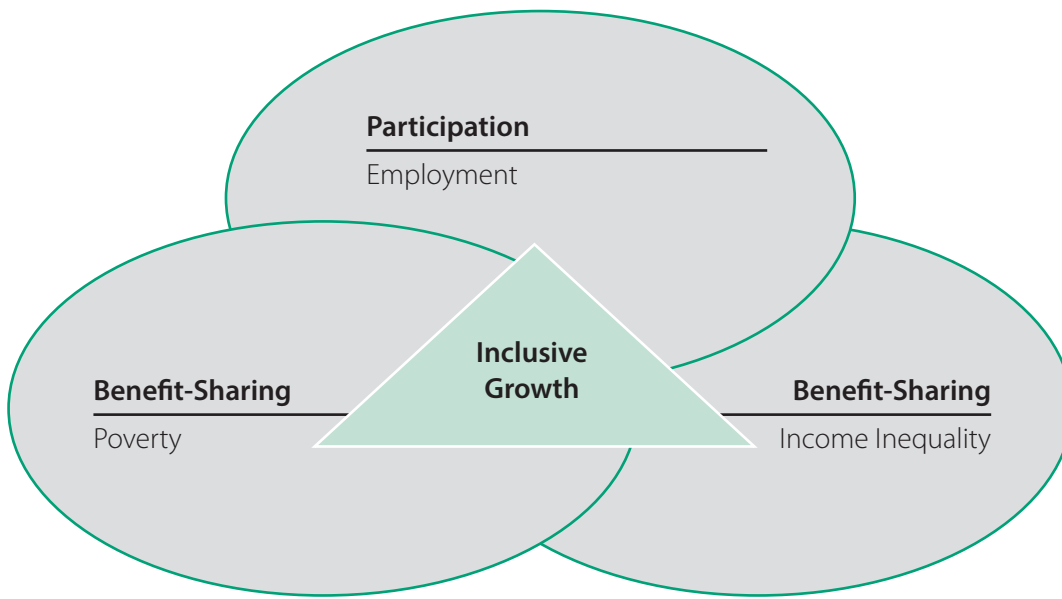
According to the Organization for Economic Cooperation and Development (OECD) (2012), green growth refers to enhancing growth and development while conserving the natural assets on which human beings depend for their livelihoods. A green growth path fosters environmentally sustainable and low carbon development (United Nations, 2013; UNEP, 2011). In a green economy setting, public and private investments are key engines of growth in income and employment that

reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of environmental assets. Similarly, ECA (2015a) views inclusive green growth as a development path that results in sustained economic growth, social inclusion, human welfare improvement, resource efficiency, decent and green employment creation, and environmental protection, thereby contributing to poverty reduction and sustainable development.

Recognizing that green growth is a prerequisite for building a green economy, greening the economy requires the maintenance and recognition of ecological integrity, goods and services through policies that address market failures arising from open access of environmental resources, and that correct prices through various instruments.⁶ Both developed and developing economies alike undertake investments, which they consider as priority areas, and such investments interact with the environment and society. Investments that are not environmentally friendly and that neglect renewable energy, sustainable practices in agriculture, industry, natural resources management and the protection of ecosystems, will have long-term costs for society, although they may lead to private gains in the short term. Sustainable investment has now become the slogan of countries with a general understanding of the long-term global effects on the environment of investments and businesses that aim to capture the opportunities arising from environmentally friendly investments. Green growth is characterized by the allocation of resources to economic activities that would improve natural capital or reduce ecological scarcities and environmental risks (United Nations, 2013).

In greening the economy, conscious efforts are needed to address equity issues, with emphasis on social development as a key element. ILO and its constituents (governments, employers and em-

⁶ Although the literature on how to make growth greener dates back to the 1950s and provides range of instruments such as environmental taxation, norms, and regulations as a green growth strategy, their implementation has been beset by several problems including market failures, governance problems, and coordination failures (World Bank, 2012).

Figure 1: Indicators of inclusive growth

Source: Ramos and others (2013).

ployees) have identified priorities for social development. These include job creation, decent employment and sustainable livelihoods, guaranteed rights at work for recognition and respect of workers, adequate social protection to enjoy safe working conditions with adequate health care, and dialogue promotion to build cohesive societies. It is based on the understanding that work is a source of personal dignity, family stability, peace in the community and economic growth that expands opportunities for productive jobs and enterprise development. Broad-based growth, through productivity growth and employment generation, is the key mechanism of reducing unemployment, poverty, the growing inequalities and the accompanying social unrest and industrial conflicts (Lederman, 2013). Decent work and its components are central to enhancing inclusiveness. Benefit sharing and participation are two main dimensions of inclusive growth (see figure 1).

Decent work and green growth are considered central elements of an inclusive green economy. Growth is inclusive if it is generated by the participa-

tion of a large segment of population and likewise if its benefits are distributed to broader segments of society. This implies inclusion in the growth process as well as in the outcome (Klasen, 2010).⁷ Inclusive green growth can provide a pathway to sustainable structural transformation that reconciles the urgent need for growth with the imperative of avoiding lock-in to unsustainable growth patterns and irreversible environmental and social damages (OECD, 2013; World Bank, 2012).

Green growth does not necessarily imply inclusiveness. Therefore, policies must be carefully designed to enhance the benefits for, and minimize costs to, the poor and most vulnerable. By doing so, green growth could facilitate the transition to an inclu-

⁷ Despite growing efforts towards inclusive growth, however, there is not yet a universally agreed definition of 'inclusive growth'. The World Bank defines inclusive growth as a rapid pace of growth, which is broad-based across sectors and includes a large part of a country's labour force (Ianchovichina and Lundstrom, 2009). The Asian Development Bank defines growth as inclusive if everyone participates in and contributes to the growth process (Rauniyar and Kanbur, 2009). According to UNDP (2011), growth is considered inclusive when it takes place in sectors in which the poor work, in places where the poor live, uses factors of production that the poor possess (e.g. unskilled labour), and reduces the prices of consumption items that the poor consume (e.g. food, fuel and clothing).

sive green economy that would lead to sustainable development. Similarly, inclusive growth may not necessarily entail green growth, but it can be made green through targeted policies and strategies to enhance resource efficiency and ecological assets. Formulating policies and strategies, identifying priority and green sectors and streamlining policies in those sectors of the economy are steps that need to be taken in phases, together with commitment to monitor and evaluate the performance in the subsequent periods.

Hence building an inclusive green economy encompasses socioeconomic and environmental transformation through growth of a particular quality. The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) identifies three dimensions of quality growth: ecological quality, economic quality, and social quality, which correspond to the three dimensions of sustainable development (see figure 2) (ESCAP, 2013). From a sustainable development perspective,

both inclusive growth and green growth are key aspects of quality growth, which unites economic, social and environmental qualities of growth in a single conceptual framework. According to ESCAP (2013), five determinants of the quality of growth can be identified: distribution (e.g. equity and access); efficiency and productivity (e.g. efficient resource use, labour/or capital productivity, and total factor productivity.); structural transformation (e.g. a move from low value added to higher value added, and economic diversification); balancing capital investment (e.g. investment in human and natural capital); and recognizing limits (e.g. policy targets and limits to resource use).

The adoption of inclusive green economy policies and strategies improves the inclusiveness and greenness of structural transformation and promotes a structural change that focuses on “green” activities and services, and sustainable infrastructure development (ESCAP, 2011).

Figure 2: Key elements of quality of growth



Source: ESCAP (2013).

1.2 Framework for linking inclusive green economy and structural transformation

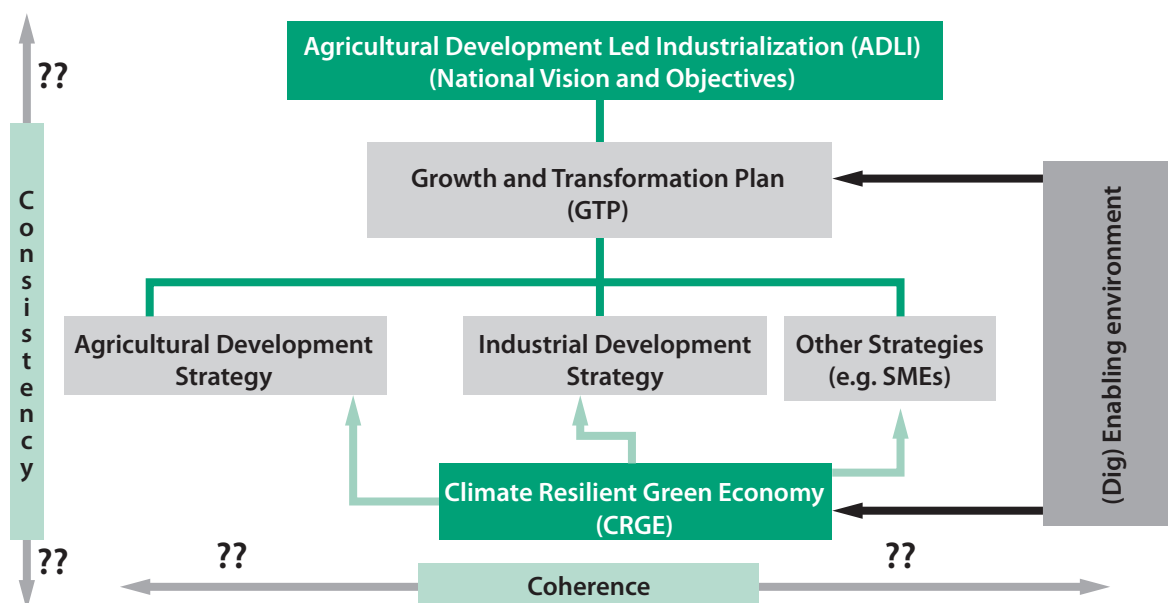
Ethiopia's climate-resilient green economy provides a basis to explore the linkages and contribution of those policies and strategies to the structural transformation of Ethiopia. The structural transformation plans of the country are enshrined in its successive five-year development plans: the Sustainable Development and Poverty Reduction Programme; the Plan for Accelerated and Sustained Development to End Poverty; and the Growth and Transformation Plan. Drawing from the ESCAP quality of growth approach, a conceptual framework has been developed to assess the vertical consistency and horizontal coherence between the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan (see figure 3).

The framework provides the space for analysis to check or verify the vertical consistency and horizontal coherence of policies and strategies.

Vertical consistency refers to whether or not climate-resilient green economy policies and strategies contribute to the overarching goals and aspirations of the Government of Ethiopia. Vertical consistency checks whether the policies and strategies lead to structural transformation, and whether they address the key impediments for structural transformation. Horizontal coherence refers to how sectoral development policies and strategies for a climate-resilient green economy and others reinforce each other; whether or not there are conflicts between climate-resilient green economy interventions and agricultural, industrial and other development policies and strategies. Horizontal coherence helps to answer whether there are synergies or trade-offs between climate-resilient green economy sectoral strategies and other sectoral strategies.

The adopted framework incorporates the pillars of the inclusive green economy concept and helps to assess the interdependence among economic, environmental, and social aspects by focusing on consistency and coherence of the climate-re-

Figure 3: Conceptual framework for an inclusive green economy and structural transformation



Source: Constructed based on Government's development vision, plans and strategies.

silient green economy policies and other policies and strategies with those indicated in the Growth and Transformation Plan. It does so in four stages. First, an assessment of inclusive green economy-related macroeconomic and sectoral policies and strategies, the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan made on the basis of existing studies and documents. In the second stage, the synergies and conflicts of the Strategy and other relevant macroeconomic and sectoral policies and strategies with the Growth and Transformation Plan were analysed. This was done mainly in a qualitative way, as many of the issues at stake, such as harmonization of strategies, compatibility and sequencing issues are not suitable for a quantitative assessment. In the third stage, a comparison was made of national and global situations, challenges and opportunities. In the fourth stage, identification and analysis of stakeholders' perspectives and assessment of actual implementation and best practices are carried out based on stakeholder consultations and the outcomes of investigations. This stage highlights Ethiopia's standing in the achievement of structural transformation and the progress made in building an inclusive green economy under the current setting and direction of implementation of its policies and strategies.

1.3 Objectives of the report

The main objective this report is to explore the linkages and contribution of inclusive green economy policies and strategies to structural transformation in Ethiopia. The report therefore provides an assessment of how the existing inclusive green economy policies are linked with the structural transformation strategy and reviews the contribution of the policies towards achieving the country's transformation agenda. The report is intended to enhance understanding and promote the adoption of inclusive green economy policies and strategies that will contribute to achieving inclusive green structural transformation goals in Ethiopia.

1.4 Methodological approach

1.4.1 Data sources

The report is based on primary and secondary data and information. Primary data was collected from key stakeholders (see annex 1 for list of stakeholders consulted). In this regard, two sets of checklist questions were administered to capture stakeholders' perspectives on the inclusive green economy concept and on structural transformation, and the nexus between the two. The first set of questions focused on selected government institutions that are relevant for the study to get their perspectives on inclusive green economy and structural transformation strategies. The second set of questions targeted non-State actors, including civil society organizations, academia, research institutes, private businesses, and donors. The information generated from stakeholder consultations helped to pinpoint the strengths, weaknesses, challenges and opportunities for promoting an inclusive green economy to enhance structural transformation.

Relevant policy and other documents related to an inclusive green economy and structural transformation were reviewed to acquire secondary data. Among the documents reviewed were the Climate-Resilient Green Economy Strategy, the Growth and Transformation Plan, the Sustainable Development and Poverty Reduction Programme and the Plan for Accelerated and Sustained Development to End Poverty. Other publications reviewed included annual progress reports for the Growth and Transformation Plan, reports of the Central Statistical Agency (e.g. national labour force surveys; house hold income, consumption and expenditure surveys; urban employment and unemployment surveys; and agricultural sample surveys), and reports by the Ministry of Education, such as education abstracts, and the Ministry of Labour and Social Affairs.

1.4.2 Data analysis

The overall approach was inspired by the theories of structural transformation and recent international research work on the green economy. The three strands of work of particular relevance for the analysis are: the view of the role of structural transformation in economic development; green growth, and more generally, the green economy; best practices and lessons learned from government policy and interventions in the area of green economy.

An eclectic approach was used to analyse information generated from different sources. Accordingly, a two-pronged approach was adopted. First, desk work, which involved the review of a wide range of policy documents and studies, including government policy documents and strategies, proclamations, directives, and other regulations. The desk review process also involved quantitative data analysis including productivity decomposition and trend analysis. Second, analysis of qualitative data generated from consultation of key stakeholders, in order to analyse factual information and elicit views on the inclusive green economy approach and structural transformation in Ethiopia.

1.4.3 Peer review

The report was subjected to internal and external peer reviews that helped to plug gaps, address factual errors and provided expert inputs to inform the revision of the various draft versions of the report. In this regard, the report benefitted from comments and inputs from internal peer review by the relevant ECA divisions and subregion-

al offices. The report was validated and enriched by inputs from the validation meeting organized jointly by ECA and the Ministry of Finance and Economic Development. The meeting participants comprised policymakers, experts and practitioners representing government ministries and agencies, the private sector, academia, and civil society organizations working in areas related to structural transformation and the green economy in Ethiopia. Representatives of United Nations agencies and the African Development Bank also participated in the meeting.

1.5 Structure of the report

The report comprises nine main chapters. Chapter 2 deals with Ethiopia's macroeconomic framework. The country's structural transformation agenda is discussed in chapter 3 while chapter 4 presents an analysis of inclusive green economy policies and their role and significance in fostering structural transformation in Ethiopia. Linkages and coherence between inclusive green economy policies and those directly addressing structural transformation in the country are discussed in chapter 5. Chapter 6 provides an analysis of other enabling measures in place needed to facilitate the transition to an inclusive green economy and contribute to structural transformation. Chapter 7 deals with existing analytical tools for integrated assessment of inclusive green economy policies and strategies, and chapter 8 discusses challenges to and opportunities for adopting inclusive green economy policies to achieve structural transformation. Chapter 9 provides the conclusion and recommendations.

2. Ethiopia's macroeconomic framework

2.1 Overview of policies and strategies

The macroeconomic policy environment permeates the entire socioeconomic life of society and shapes the evolution of the economy. It is in turn shaped by the existing socioeconomic and political imperatives. This chapter reviews the country's macroeconomic setting in relation to economic, social and environmental development imperatives and its responsiveness to inclusive green economy principles and approaches.

The evolution over time of macroeconomic policy in Ethiopia reflects the economic imbalances and political developments. The macroeconomic stabilization and structural adjustment policies of the early 1990s were reversals of the policies of the preceding regime heralding a break in continuity from the earlier political orientation. Subsequent macroeconomic policies were responses to economic imperatives accentuated by political changes.

In the early 1990s, Ethiopia went through a stabilization and structural adjustment programme with the support of the International Monetary Fund and the World Bank. Stabilization policies were short term in nature and intended to attain fiscal and monetary balances, while structural adjustment policies were aimed at attaining long-term growth by removing structural barricades through privatization and the lifting of market restrictions. Specifically, the aim of the stabilization policy was to address the trade balance and extricate the country from the cycle of foreign aid and high indebtedness in the external sector and growing fiscal deficits domestically. The fiscal stances were fiscal discipline and rationalization of public spending that involved retrenchment (Demeke and others, 2003). Devaluation of the local currency (birr) was undertaken to stimulate

exports and reduce the trade imbalance. The aim of the structural adjustment programme was to unleash growth mainly through the liberalization of prices and privatization of public enterprises.

Along with the stabilization and structural adjustment policies, the Agricultural Development-Led Industrialization Strategy was introduced in 1995. This is because of the strategic importance and centrality of the agricultural sector in the overall economy, and the advantage in using the abundant resources of land and labour while progressively increasing capital share in resource endowment. This strategy persisted in subsequent five-year development plans including the Growth and Transformation Plan. Persistence of agricultural development led industrialization seems to stem from the predominantly agrarian nature of the economy and from perceived difficulty of stimulating socioeconomic development without rural development in the Ethiopian context. It is abundantly clear that agricultural development led industrialization is not an industrialization strategy per se but a prelude to the industrialization strategy. An industrialization strategy puts emphasis on the manufacturing sector as a leading sector for the onset of a sustained structural transformation of an economy with largely agrarian origin. However, the experience of East Asian countries that succeeded in transforming their economies indicated the importance of promoting the agriculture and manufacturing sectors simultaneously (Ministry of Finance and Economic Development, 2014).

As happened elsewhere in the developing world, the stabilization and structural adjustment policies were not successful in achieving the desired results in economic performance. Not only was the GDP growth rate (annual average rate close to 5 per cent) low, but it was also volatile. Inflation remained on average within single digits but trade

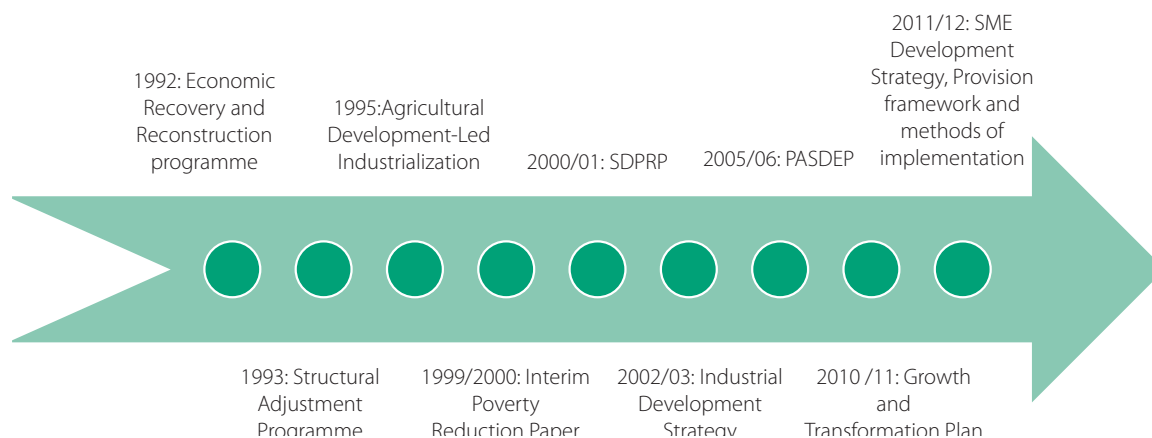
imbalances and the indebtedness of the country were high. Despite the overall socioeconomic improvement compared with the 1980s, the prevalence of high levels of poverty by global standards seemed to leave no other choice than to devise new strategies. The macroeconomic outcomes in terms of high and sustained economic growth, improving social welfare and reducing unemployment were not satisfactory because economic growth was volatile, and the poverty headcount ratio remained high, at 45.5 per cent in 1995/96 and 44.2 per cent in 1999/2000 (Ministry of Finance and Economic Development, 2014). Emphasis was placed on institutional changes and good governance, which it was believed would enable the earlier reforms to work better. Hence, the Structural Adjustment Programme was succeeded by the Poverty Reduction Strategy Programme, which underpinned the subsequent macroeconomic and sectoral policies.

The interim Poverty Reduction Strategy Programme identified factors that would enable macroeconomic stability while meeting the emergency needs of rehabilitation, demobilization, reconstruction and support for the balance of payments between 2000/01 and 2002/03 (Government of Ethiopia, 2000). These factors were external resource inflow and internal ca-

capacity to increase the aggregate output level. The interim Poverty Reduction Strategy Programme gave rise to the development of subsequent plans and strategies such as the Sustainable Development and Poverty Reduction Programme, the Industrial Development Strategy, the Plan for Accelerated and Sustained Development to End Poverty, the Growth and Transformation Plan, and Small and Microenterprises Development Strategy, all of which are geared to a social imperative of poverty reduction (see figure 4). Thus, macroeconomic policies were designed to finance poverty reduction strategies and insulate the poor against shocks.

The Sustainable Development and Poverty Reduction Programme made rural growth central to poverty reduction and at the same time maintained macroeconomic stability (Ministry of Finance and Economic Development, 2002, 2005). However, the major focus of the Plan for Accelerated and Sustained Development to End Poverty was growth with greater commercialization of agriculture and development of the private sector along with a scaling-up of efforts to achieve the Millennium Development Goals. Growth in real GDP was envisaged under macroeconomic stability and monetary expansion consistent with targets of single digit inflation, a stable exchange

Figure 4: Development plans and strategies underlying the macroeconomic policy developments



Source: Constructed based on Government's development plans and programmes.

rate and sustainable external sector development (Ministry of Finance and Economic Development, 2005). The Plan for Accelerated and Sustained Development to End Poverty was conceived and implemented while ongoing inflation was gaining momentum. The monetary sector assumed a stable but slowly declining velocity, which allowed broad money to grow at a slightly higher rate than nominal GDP.

On the fiscal front, tax revenue was projected to increase. It was also assumed that the Government would continue a prudent expenditure policy, restraining public expenditure on defence and non-priority sectors, protecting poverty-targeted outlays and capital expenditure, while containing total spending within affordable limits. Expenditures were expected to decline through the provision of debt relief assistance for Heavily Indebted Poor Countries and from an effort being made to cover recurrent expenditures with domestic revenues.

Based on experiences implementing previous development plans, the macroeconomic policy objectives of the Growth and Transformation Plan covering the period 2010/11 to 2014/15 (Ministry of Finance and Economic Development, 2010) focus on maintaining macroeconomic stability, particularly the resource and trade balance, which is meant to encourage savings and investment possibly emanating from broad-based growth. The fiscal policy focuses on maintaining the deficit at a sustainable level by strengthening domestic revenue generation capacity while enhancing pro-poor public spending. Mobilizing external grants and borrowing, without affecting macroeconomic balances, have also been envisaged. Monetary policy continues to focus on price and exchange rate stability, with inflation to be maintained at a single digit level by limiting money supply growth at a rate less than that of nominal GDP growth. Adjustment of exchange rate has been made to facilitate export and import substitution.

In addition to fiscal and monetary policies, other policies to insulate the poor and the environment against shocks were put in place within the macroeconomic policy frameworks of the poverty reduction strategy programmes. Social safety net programmes and environmental policies were tailored. The Sustainable Development and Poverty Reduction Programme focused on the environmental policy derived from the Conservation Strategy of Ethiopia of 1997 (Ministry of Finance and Economic Development 2002). Food security programmes that incorporate productive safety net programmes, among others, were put in place during the Plan for Accelerated and Sustained Development to End Poverty (Ministry of Finance and Economic Development, 2005). The Plan included an environmental vision. Policies and interventions targeted poverty reduction, gender equity and sustainable development during the plan period. The Growth and Transformation Plan pursues a strategic direction of green economy with objectives of formulating and effectively implementing policies, strategies, laws and standards to enhance welfare and environmental sustainability (Ministry of Finance and Economic Development, 2010).

2.2 Macroeconomic performance under various development strategies

2.2.1 Macroeconomic indicators

There was improvement in economic performance during the first generation of the poverty reduction programme (Sustainable Development and Poverty Reduction Programme): real GDP grew on average by 7 or 8 per cent per year between 2000/01 and 2004/05. The performance of the agricultural sector was volatile due to adverse weather shocks, which further impacted the overall economy. Economic growth further improved in the second generation of poverty reduction programme (Plan for Accelerated and Sustained Development to End Poverty), with real

Table 1: Macroeconomic indicators under different development plans

Indicators	2004/05: Sustainable Development and Poverty Reduction Programme	2009/10: Plan for Accelerated and Sustained Development to End Poverty	2012/13: Growth and Transformation Plan
GDP and sectoral growth rates (%)			
Real GDP	12.6	10.6	9.7
Agriculture	13.5	7.9	7.1
Industry	9.4	10.8	18.5
Services	12.8	13.2	9.9
Saving and Investment			
Gross domestic investment as % of GDP	20.5	24.0	33.0
Gross domestic saving as % of GDP	3.7	5.2	17.7
Price developments			
Overall inflation rate	6.1	2.8	13.5
Food inflation rate	7.4	-5.4	41.7
Non-food inflation rate	4.4	14.7	22.2
Trade			
Export of goods and services as % of GDP	15.3	13.8	12.7
Import of goods and services as % of GDP	35.8	33.3	28
Revenue and expenditure			
Domestic revenue as % of GDP	15.8	14.0	14.6
Tax revenue as % of GDP	12.5	11.3	12.5
Total poverty-oriented expenditure as % of GDP	14.2	12.3	12.6
Deficit as % of GDP (including grants)	3.6	2.8	2.0
Deficit as % of GDP (excluding grants)	8.8	6.1	3.5

Source: Ministry of Finance and Economic Development (2012, 2013, 2014).

GDP growing by 10.8 per cent between 2005/06 and 2009/10. The Government of Ethiopia, in its annual progress report, highlighted a decrease in poverty and maternal and infant mortality rates, and improvements in access to education and health. The report attributed this to economic reform, implementation of agriculture-led growth, and resource inflow through external assistance in a macroeconomic policy environment of fiscal discipline and non-expansionary monetary policy (see table 1). The macroeconomic targets set in the second and third plan periods of the poverty reduction strategy programme process in Ethio-

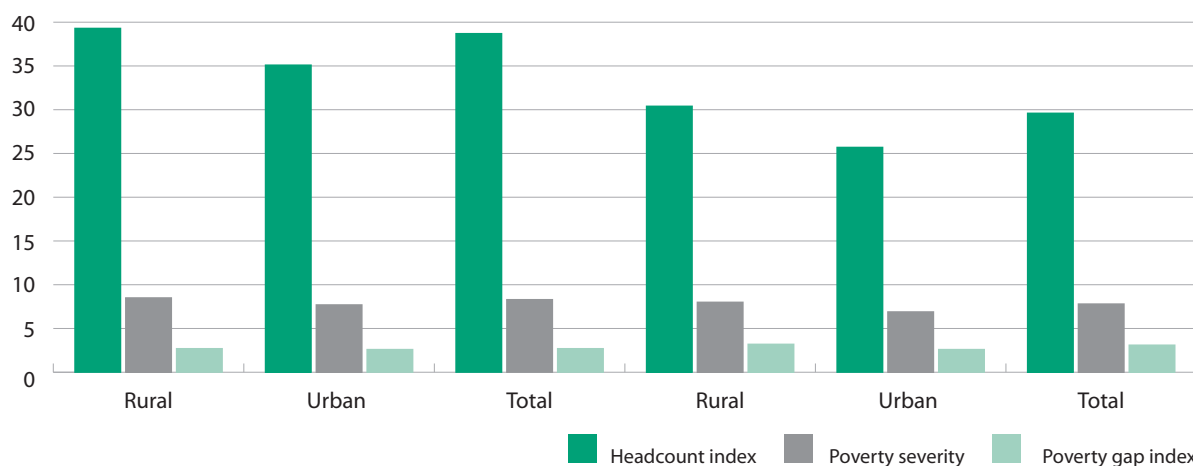
pia were informed by the poverty reduction targets established in the Millennium Development Goals. Although fiscal deficit exhibited sharp increase in the Sustainable Development and Poverty Reduction Programme period, it declined in subsequent plan periods. Government spending on poverty-oriented sectors (e.g. agriculture, natural resources, education, health and road construction) has remained around 12 per cent of GDP during the Plan for Accelerated and Sustained Development to End Poverty and Growth and Transformation Plan periods.

While growth performance was strong, especially during the most recent programme periods, macroeconomic stability has remained an issue. Interest rates have been generally negative in real⁸ terms, due to inflationary situation in the country, though it has shown a declining trend recently. At the same time, Ethiopia was able to substantially increase its investment share of GDP, from 20.5 per cent in 2004/05 to 33 per cent of GDP in 2012/13. However, the gap between saving and investment remained high, leading to increased reliance on capital inflows from abroad. Heavy dependence on external sources of investment financing has led to the accumulation of external debt. Ethiopian external trade is characterized by a widening gap between the value of exports and imports. The faster growth of imports over exports tends to heavily burden the foreign reserves position and its financing capacity for future consumption, investment and debt servicing. Attainment of higher domestic saving to narrow the resource gap is another challenge for the economy in order to ensure sustained growth.

2.2.2 Social indicators

The economy is now in the fourth implementation period of the Growth and Transformation Plan, with an impressive record of economic and social progress. Poverty incidence (or poverty headcount ratio) decreased from 38.7 per cent in 2004/05 to 29.6 per cent in 2010/11, a reduction of 9.1 percent over six years (see figure 5) (Ministry of Finance and Economic Development, 2013). Poverty declined in both rural and urban areas. The percentage of people living below the poverty line has decreased, but in 2010/11 the rate of decline in poverty was at a slower pace than the GDP growth rate (11.4 per cent). The boom in construction activities, increased private sector investment in services and expansion of small and medium enterprises might have contributed to a fall in urban poverty. However, poverty severity increased by 14 per cent in 2010/11 compared with the 2004/05 level, indicating that growth has failed to adequately reach the poorest segment of the population.

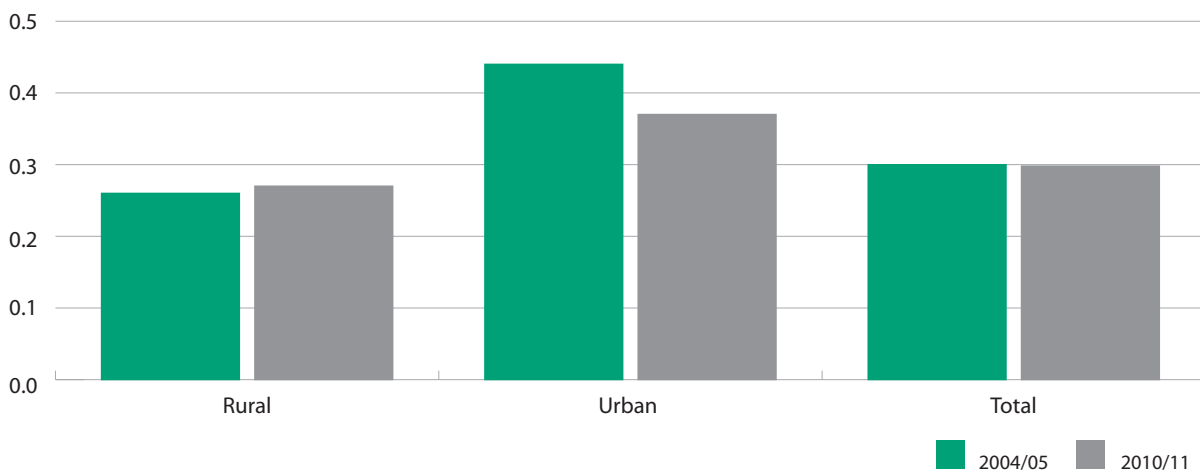
Figure 5: Trends in consumption-based poverty indices (%)



Source: Ministry of Finance and Economic Development (2013).

⁸ The nominal saving interest rate is about 5 % while the rate at which money loses its value due to inflation is much more than 5 % (it remained between 8 % and 40 %) in the period. The difference between the nominal interest rate (5 %) and the inflation rate (greater than 5 %) is the real interest rate, which is negative.

At the national level, inequality, measured by the Gini coefficient, stagnated between 2004/05 and 2010/11 (see figure 6). Inequalities exist between people living in different parts of the country, such as rural and urban areas, which are often

Figure 6: Trends in consumption-based inequality

Source: Ministry of Finance and Economic Development (2013).

referred to as spatial inequalities (Stuart, 2011). While consumption inequality declined in urban areas, it increased in rural areas from 0.26 to 0.27 per cent. A decline in inequality in urban areas could be due to improved employment creation and the Government's urban development efforts, particularly, infrastructural development, expansion of small and medium enterprises and increased training. Despite these efforts, inequality has remained high in urban areas compared with rural areas, suggesting a need for more productive employment creation and skill development interventions.

Nevertheless, human development indicators such as literacy, education, health, maternal and infant mortality rates have shown steady improvement due to increased access to health and education services (see table 2). In terms of education indicators in particular, there has been an increase in net enrolment rate at both primary and secondary levels. The National Action Plan on Gender Equality provides the framework for mainstreaming gender in economic empowerment, education and training, reproductive rights, and institutional mechanisms. The Gender Parity Index shows improved performance both at the primary and secondary education levels. However, Ethiopia has yet to reach gender parity in lower primary, secondary and preparatory levels of ed-

ucation. The country is closer to gender parity at the upper primary level than at any other level of education. In particular, gender inequality is worrisome at preparatory⁹ level compared with other levels of education.

With regard to health-related indicators, improvements have been made, especially in achieving universal access to basic health services: primary health services coverage reached 93 per cent in 2012/13. The proportion of births attended by skilled health personnel improved from 5.7 per cent in 2005/06 to 23.1 per cent in 2012/13. Similarly, infant, maternal and under-five mortality rates declined between 2005/6 and 2012/13, although some health-related indicators such as maternal, infant, and under-five mortality rates showed no improvement between 2010/11 and 2012/13.

2.2.3 Infrastructure indicators

Access to basic infrastructure such as roads, water, power, has also improved recently. For instance, total road network and density, guided by a series of the road sector development programmes, increased in 2012/13 (see table 3). However, despite

⁹ Preparatory level is grade 11 and 12 where prospective students for college education are served

Table 2: Key indicators of social progress

	2010/11	2011/12	2012/13
Poverty and inequality indicators			
Poverty incidence	38.7(2004/5)	29.6 (2010/11)	26
Inequality	0.30(2004/5)	0.30 (2010/11)	
Health related indicators			
Primary health services coverage (%)	96	93	93
Maternal mortality (per 100,000 live births)	676	676	676
Under-five child mortality rate (per 1,000 live births)	88	n.a.	88
Infant mortality rate (per 1,000 live births)	59	n.a.	59
Antenatal Care (%)	82.2	89.0	97.4
Postnatal services coverage (%)	42.1	44.5	50.5
Family planning services (%)	61.7	60.4	60.0
Proportion of births attended by skilled health personnel (%)	16.6	20.4	23.1
Pentavalent vaccination coverage (%)	84.7	84.9	87.6
Education related indicators			
Net primary (1-8) enrolment rate (%)	85.3	85.4	85.9
Net secondary (9-10) enrolment rate (%)	16.3	17.3	19.4
Adult education enrolment rate (%)	1.2	2.1	3.4
Primary school enrolment of girls to boys ratio	0.94	0.93	0.94
Gender Parity Index			
Gender Parity Index at primary (1-8) level	0.95	0.90	0.94
Lower primary (1-4)	0.90	0.90	0.92
Upper primary (5-8)	0.96	1.0	0.98
Secondary (9-10)	0.83	0.90	0.92
Preparatory (11-12)	0.71	0.71	0.81

Notes: 'n.a.'-not available; Infant and maternal mortality rates for 2010/11 are obtained from the 2011 Ethiopia Demographic and Health Survey;

Source: Ministry of Education for education data, and Ministry of Finance and Economic Development (2014) for health-related indicators.

some progress, access to potable water and electricity has remained a concern, especially in rural areas. While close to 85 per cent of urban households have access to electricity, less than 5 per cent of rural households have access to modern electricity (Ministry of Finance and Economic Development, 2014). The majority of rural households use kerosene for lighting and firewood for cooking (see table 4). The proportion of households who depend on wood for cooking increased in urban

and rural areas between 2004/05 and 2011/12. This has resulted in deforestation and increased greenhouse gas emissions. Similarly, a large proportion of rural households depend on the unsafe sources of water, such as unprotected wells, rivers and lakes, and rainwater) for drinking. This implies that designing and implementing inclusive green economy policies and strategies could help arrest greenhouse gas emissions from deforestation and improve inclusiveness in rural and urban areas.

Table 3: Key infrastructure indicators

	2010/11	2011/12	2012/13
Roads			
Total road network (000 km)	53.1	56.2	58.3
Average time taken to all-weather road (hours)	3.5	2.9	2.1
Road density (km/1000 sq.km)	48.1	57.4	78.2
Road density (km/1000 population)	0.66	0.75	1.0
Water			
Potable water coverage (%)	52.12	58.25	68.5
Urban potable water coverage (within 0.5 km)	74.64	78.71	81.30
Rural potable water coverage (within 1.5 km)	48.85	55.21	66.5
Large and medium level developed irrigable land (ha)	32034	42229	96650
Power			
Electricity coverage (in %) (within 1.5 km)	45.4	48.5	53.5

Source: Ministry of Finance and Economic Development (2014)

Table 4: Type of fuel used for cooking, and sources of drinking water (% of households)

	2004/05			2011/12		
	Rural	Urban	All	Rural	Urban	All
Type of fuel used for cooking						
Collected fire wood	84.1	16.2	73.3	88.1	21.9	77.2
Purchased fire wood	3.2	49.9	10.7	3.1	46.2	10.2
Charcoal	0.1	7.8	1.3	0.1	15.8	2.7
Crop residue	12	5.2	11	8.3	3.3	7.5
Kerosene	0.2	14	2.4	0.1	3.3	0.6
Butane-gas	0.7	2.7	0.5	0	0.6	0.1
Electricity	0.1	2.4	0.4	0	7.2	1.2
Source of drinking water						
Tap inside the house	0.5	3.2	1	0	3.5	0.6
Private tap in the compound	0.05	20.3	3.2	0.5	27.3	5
Shared tap in the compound	0.3	16.9	2.9	0.2	17.8	3.1
Communal tap outside the compound	8.1	47.4	14.3	15.7	25.4	17.3
Protected well	12.6	4.4	11.3	22.1	5	19.3
Unprotected well	40.6	4.1	34.9	32.4	2.6	27.5
River/lake/pond	36.1	2.6	30.8	26.3	2.8	22.4
Rainwater	1.7	1.1	1.6	2.1	0.4	1.8

Source: Ministry of Finance and Economic Development (2013).

2.2.4 Employment, productivity and earnings

The sectoral structure of employment reveals that the share of employment in agriculture has declined significantly, from 80.3 per cent in 2005 to 72.7 per cent in 2013 (see figure 7). The services sector has assumed a greater role in employment generation, where its employment share increased from 13.1 per cent in 2005 to 19.9 per cent in 2013. The contribution of the manufacturing sector to total employment has remained low. Nevertheless, the pace of overall employment growth has accelerated in recent years. This has resulted in an increased labour force participation rate, that is to say, the share of the economically active population in the working age population. The employment-to-population ratio also increased over the same period. A plausible reason for a rise of participation and employment rates is related to the entrance in the labour market of a large number of youth who completed their education.

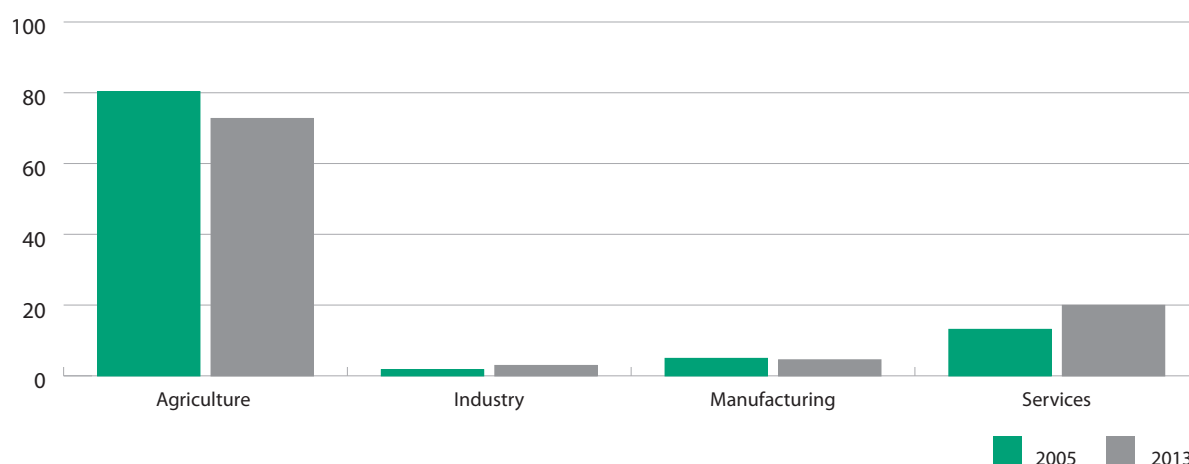
The working age population increased from 41 million in 2005 to 55.6 million in 2013, which corresponds to a 4.6 per cent increase per year (see table 5). While the share of formal employment increased in urban areas, informal employment declined from 4.3 per cent in 2005 to 3.2

per cent in 2013. In 2005, of the 4.0 million employed people living in urban areas, 1.32 million were employed in the informal sector, and the figure increased to 1.33 million in 2013. This implies that while there are still a large number of Ethiopians employed in the urban informal sector, it has not grown significantly since 2005. The services sector has become a home for the vast majority of informal employment, accounting for 65.8 per cent of total urban employment in 2012 (see table 6).

Overall, the employment structure shows that the vast majority of jobs are essentially connected to the extraction of natural resources such as agriculture, dominated by smallholders. In addition, the informal sector has become an important source of livelihood, especially in urban areas. Informal sector jobs are precarious or unprotected as informal workers are less likely to have a formal work arrangements ensuring continuity of work and social protection. These features imply that inclusiveness has remained a concern despite record growth performance.

Productive employment does not only provide the poor with better incomes, it also stimulates learning and skills acquisition (World Bank, 2013) and participation in society. Depending on data availability, some labour market indicators can

Figure 7: Trends in sectoral employment (% of total employment)



Source: National Labour Force Surveys (2005, 2013).

Table 5: Selected labour market indicators

	2005	2013
Working age population (mln)	41.0	55.6
Labour force participation rate	78.9	79.8
Employed-to-population ratio	74.6	76.2
Employment (as % of total labour force)	94.4	95.5
Unemployment (as % of labour force)	5.6	4.5
Urban formal employment (as % of total employed)	5.9	8.9
Urban informal employment(as % of total employed)	4.3	3.2

Note: Formal and informal employment are for urban areas.

Source: CSA (2005, 2013); National Labour Force Surveys

Table 6: Distribution of informal employment by sector in urban areas (%)

	2010	2011	2012
Agriculture, Hunting, Forestry & Fishing	11.1	9.0	7.9
Manufacturing, Construction, Mining & Quarrying	20.6	25.8	26.3
Wholesale and Retail trade	19.8	33.3	33.3
Other services	48.5	31.8	32.5

Source: Central Statistical Agency-Urban Employment Unemployment Survey (Various issues) Access to productive employment is essential for inclusion of the poor in the growth process.

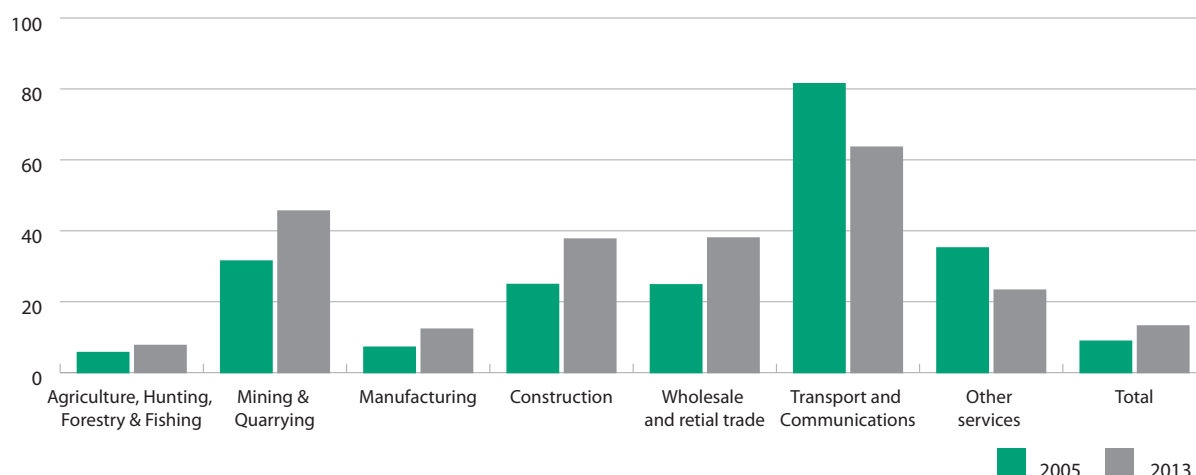
be used to measure productive employment, such as labour productivity levels, labour productivity growth, employment-to-population rates, proportion of working poor, the proportion of own-account and unremunerated workers (e.g. contributing family workers) in the employed population (vulnerable workers) (Szirmai and others, 2013; ILO, 2013).

Overall labour productivity increased from 8,900 birr per worker in 2005 to 13,200 birr in 2013 at 2010/11 constant prices, an increase of 5.1 per cent per year. Sectoral variations are noticeable (see figure 8). Labour productivity levels have remained low in agriculture and manufacturing. Employment expansion has been accompanied by a contraction in labour productivity in the transport and communications sectors in 2013. In terms of labour productivity growth, three main sectors

stand out quite strongly between 2005 and 2013: manufacturing, construction, and wholesale and retail trade.

Although economy-wide labour productivity growth was accompanied by employment growth, the growth of the latter was not strong. This is reflected by the low value of the overall employment elasticity, which was 0.42 between 2005 and 2013. Employment elasticity has remained low (below the overall average) in agriculture, manufacturing and wholesale and retail trade, and these sectors registered lower employment growth over the same period.

While employment grew in the majority of sectors, real income declined except in mining and quarrying (see table 7). In 2012, the top four low-paying sectors were hotels and restaurants,

Figure 8: Labour productivity (in thousands of '000' birr), 2010/11 constant prices

Source: Computed based on Central Statistical Agency (2005 & 2014); National Labour Force Surveys

Table 7: Average real income by major sectors (birr per month)

	2010	2012
Agriculture, Hunting, Forestry & Fishing	355.2	275.7
Mining & Quarrying	494.6	600.0
Manufacturing	385.0	341.6
Electricity, Gas and Water Supply	641.3	471.0
Construction	550.2	452.9
Wholesale and Retail trade	387.8	293.5
Hotels and Restaurants	213.0	249.0
Transport, Storage and Communications	603.6	508.3
Financial Intermediation	809.9	681.6
Real Estate, Renting and Business Activities	656.5	605.0
Average monthly payment	483.9	421.7

Source: Central Statistical Agency (2011 and 2012) - Urban Employment Unemployment surveys

agriculture, wholesale and retail trade, and manufacturing; these sectors pay below the national average wage. The monthly average real income was 421.7 birr (or US\$ 23.4)¹⁰ in 2012, far below the US\$ 1.25 a day threshold, implying 'working poor' population. Labour mobility occurred from one low paying sector to another low paying sector. This type of labour reallocation is not useful from the point of view of productive employment and of achieving inclusive growth.¹¹

¹⁰In 2012, the exchange rate was: US\$ 1=18.0 birr.

¹¹ In the literature, a reallocation of labour from a low productivity sector to another low productivity sector does not help raise the

The main issue in Ethiopia is the quantity and quality of jobs. The types of jobs that have been generated lack decent quality.

The challenge confronting the country is not only to maintain economic growth, but also to translate it into sustained and inclusive development, based on economic diversification that creates decent jobs, reduction of inequality and poverty rates, and sustained environmental ser-

overall productivity of the economy, and this is often called 'structural burden' (see Baumol and others, 1985, 1989; Felipe and others, 2007).

vices and natural resource flows. The Ethiopian economy is highly vulnerable to climate change. This is compounded by population pressure, especially in rural areas, which places stress on natural and environmental resources. In particular, soil degradation, deforestation and loss of biodiversity are critical challenges, and have significant implications for sustainable development. Given the increasing risk of climate change and environmental degradation, Ethiopia clearly cannot continue to follow a 'business as usual' pattern of development.

2.3 Fiscal and monetary responsiveness to an inclusive green economy

2.3.1 Fiscal responses to an inclusive green economy

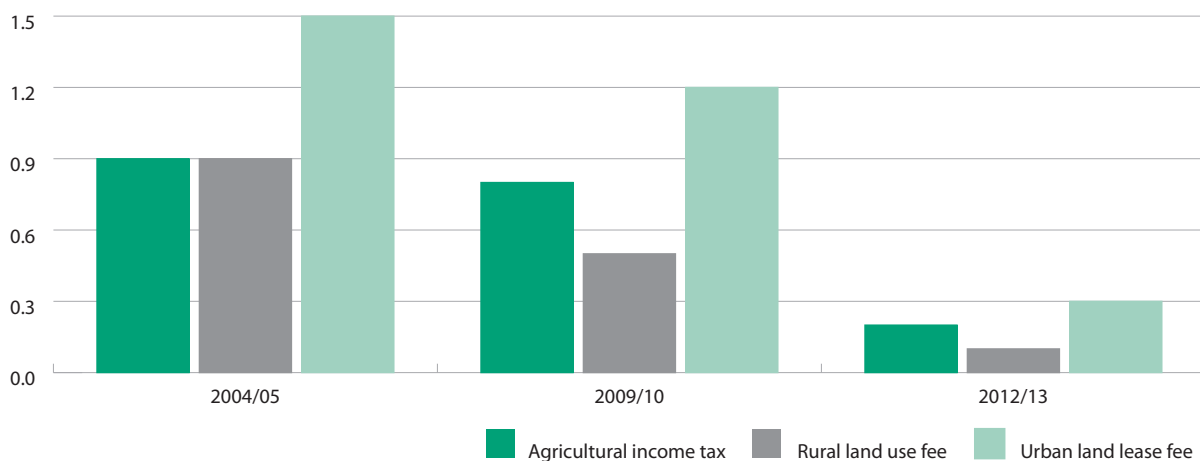
Natural resources have fiscal contributions. The share of natural resource-based revenue (e.g. agricultural income and rural land-use fees) out of total revenue was relatively high in 2004/05, but declined in 2012/13 (see figure 9). Among the natural resource-based revenue sources, agricultural income and rural land-use fees accounted for relatively higher shares in total revenue, especially during the Plan for Accelerated and Sustained De-

velopment to End Poverty period. The declining share of natural resource-based revenue sources is due to faster growth of revenues from non-natural revenue sources.

In societies where poverty is recognized as a major social problem, social inclusiveness requires the commitment of resources to socially disadvantaged sections of the population (the poor, youth, and women). One indication of inclusiveness is the expenditure to poverty-oriented sectors; these include sectors and activities where the poor are largely found and where the poor can be accessed through interventions. The poverty-oriented sectors identified by the Ethiopian government are agriculture, natural resources, road construction, education, and health and social welfare, which are addressing both green expenditures and social inclusiveness. Expenditure on social welfare is the most direct expenditure targeting the poor, while expenditure on road construction generates benefits for both the poor and other segments of the society.

Allocation of capital expenditure to poverty-oriented sectors grew by about 32 per cent per year between 2004/05 and 2012/13. Similarly, government capital expenditure in priority sectors as a share of GDP has increased over time, especially on roads, education and natural resources (see

Figure 9: Share of natural resource-based revenue source (% of total revenue)



Source: Computed from Ministry of Finance and Economic Development fiscal data source

Figure 10: Percentage share of capital expenditure in poverty sectors to total capital expenditure

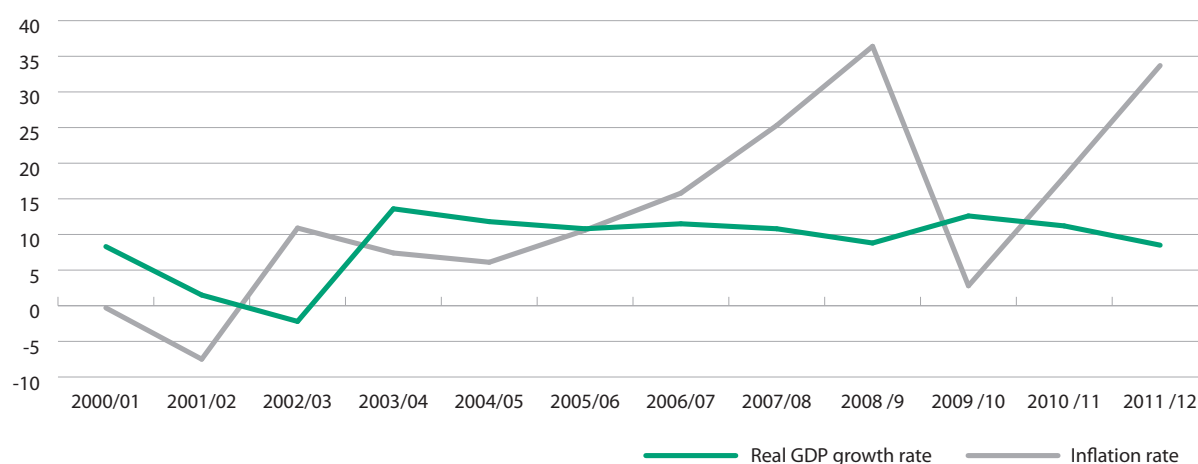
Source: Computed from Ministry of Finance and Economic Development fiscal data.

figure 10), with the share of GDP at about 7.5 per cent in 2004/5, increasing at an average rate of 7 per cent in the period up to 2012/13. Similarly, the share of capital expenditure in poverty-oriented sectors grew substantially, increasing from about 60 per cent of total capital expenditure to more than 80 per cent. Among the poverty-oriented sectors, road construction took by far the largest share of capital expenditure. Capital expenditure to priority sectors increased during the transformation period, indicating the Government's focus on social protection and natural resources management. It appears that the Government's fiscal policy has focused on sectors that could benefit

the poor as well as on improving natural resources protection and conservation.

2.3.2 Monetary responses to an inclusive green economy

The monetary policy framework swings between conflicting objectives of restraining inflation and accelerating economic growth. Inflation control has remained the dominant objective of the government in the Plan for Accelerated and Sustained Development to End Poverty and Growth and Transformation Plan periods. Headline infla-

Figure 11: Trends in GDP growth rate and inflation

Source: Ministry of Finance and Economic Development and National Bank Ethiopia (2014)

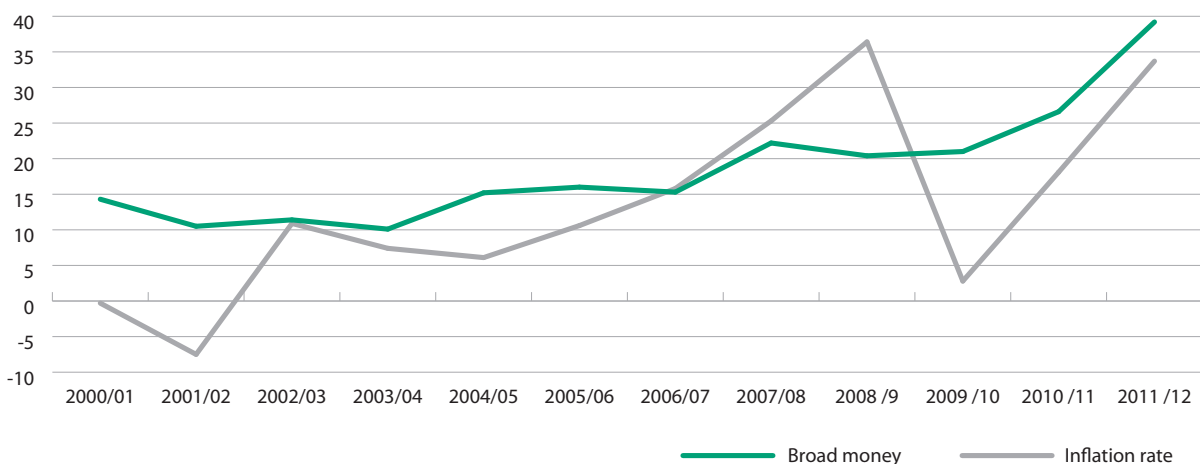
tion remained below 10 per cent until 2004/05, with the exception of 2002/03 following a drop in agricultural output (see figure 11). It crossed the two-digit-mark in 2005/06 and remained high in the subsequent years following the global economic crisis. Rapid growth in real GDP has closely coincided with deceleration of the inflation rate in recent years. The Ethiopian government has undertaken various measures to stabilize inflation including tight fiscal and monetary policies and administrative measures (BKP, 2013). Fiscal measures include reducing the government budget deficit and refraining from financing budget deficit from direct advance borrowing by the central bank, while monetary policy measures include raising the reserve requirement of banks (from 5 per cent to 15 per cent), increasing interest rates, and reducing domestic credit. Administrative measures include a price cap on selected commodities and distribution of subsidized commodities to urban dwellers, indicating that monetary policy interventions also feature social protection.

Developments in monetary aggregates such as domestic credit, broad money, narrow money, quasi money and foreign assets constitute the macroeconomic policy environment conditioning the inflation situation. An average growth rate well above 18 per cent was registered for all monetary aggregates, which was higher than the growth rate of real GDP between 2000/01 and 2012/13

and coincided with the prevalence of high inflation (see table 8). Domestic credit growth (up to 32 per cent), broad money growth (up to 30 per cent) and foreign asset growth (up to 25 per cent) closely correlate with persistent inflation (see figure 12). The level and growth of net foreign assets, i.e. the sum of net debt, net foreign investment and foreign exchange reserves, is the determinant of external sustainability (Lane and Milesi-Ferretti, 2000). The fast growth of net foreign assets could result in expansionary monetary effects that pose a challenge to domestic macroeconomic stability. Monetary authorities have to undertake sterilization measures whenever necessary to ensure that changes in net foreign assets do not affect the domestic monetary base, or narrow money, which is one component of money supply. If unsterilized, the growing foreign asset position might increase the monetary base, leading to price instability.

On average, 55 per cent of domestic credit was a claim on sectors other than government between 2000/01 and 2012/13 (see figure 13). Claims on government as a share of total domestic credit have shown a declining trend since 2006/07, and this could be associated with Government's objective of lowering inflationary pressures in the country. Credit to natural resource-based sectors, in particular to agriculture, mining, power and water sectors was growing at an average rate of 29 per cent between 2006/07 and 2012/13

Figure 12: Growth of broad money and inflation (%)

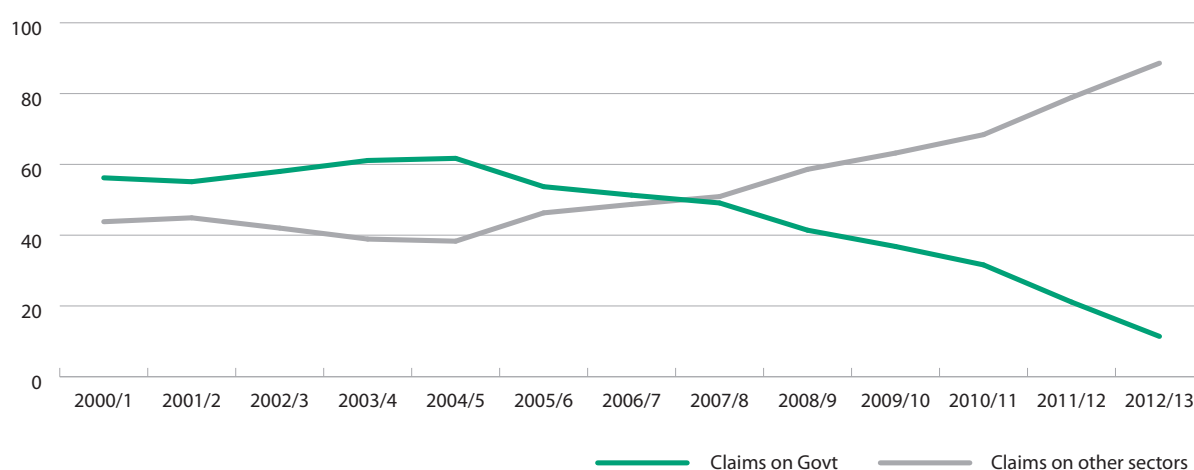


Source: National Bank of Ethiopia (2014).

Table 8: Monetary developments

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Monetary aggregates (million birr)													
Foreign assets (net)	4.8	4.8	7.8	11.0	13.0	13.9	12.1	13.3	11.7	18.0	27.2	55.5	39.8
Domestic credit	26.3	27.6	27.6	28.2	31.1	40.3	49.3	61.8	80.0	89.2	104.4	135.6	189.1
Broad money	22.2	24.5	27.3	30.1	34.7	40.2	46.4	56.7	68.2	82.5	104.4	145.4	189.4
Narrow money	13.1	13.7	15.2	16.4	19.1	21.3	23.8	29.6	35.4	42.1	52.4	76.2	94.8
Quasi-money	9.1	10.8	12.1	13.6	15.6	18.9	22.6	27.0	32.8	40.4	52.0	69.2	94.5
% of nominal GDP													
Broad money/GDP	33.6	36.4	41.5	41.4	40.4	38.1	35.6	33.3	27.7	24.8	27.5	28.7	25.7
Narrow money/GDP	19.8	20.4	23.0	22.6	22.2	20.2	18.3	17.4	14.4	12.7	13.8	15.1	12.9
Quasi-money/GDP	13.8	16.0	18.4	18.8	18.2	18.0	17.3	15.9	13.4	12.2	13.7	13.7	12.8

Source: National Bank of Ethiopia (2014).

Figure 13: Share of claims on government and on other sectors (% of total domestic credit)

Source: National Bank of Ethiopia (2014)

(see table 9). Agriculture was by far the largest recipient of credit, indicating that monetary policy has been in support of natural resources-based sectors. Overall, the Government's monetary policy aimed at restoring macroeconomic stability, protecting the vulnerable segments of the population, and channelling credit to poverty-oriented sectors and natural resources management.

Overall, the country's macroeconomic setting in relation to its economic, social and environmental development imperatives has been conducive for

an inclusive green economy. This is reflected by a portfolio of macroeconomic policies aimed at ensuring sustainable and equitable development outcomes. Both fiscal and monetary policies are geared towards supporting the Government's objectives of a sustainable and inclusive development trajectory. The Government has identified spending priorities and increased allocation of its budget to green and social sectors such as agriculture, natural resources management, education, green energy, health, and other infrastructure. In particular, both capital expenditure

Table 9: Loans and advances by banks and receiving natural resource-based sectors (in millions of birr)

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Agriculture	4218.4	5481.2	6009.7	5947.1	10575.3	17165.6	16723
Mines, Power & Water Resources	40.9	4.2	4.6	4	37.2	31.9	88.3

Source: National Bank of Ethiopia quarterly reports (various issues).

and credit allocation to key economic, social and social sectors increased. Fiscal and monetary policies have also been instrumental in curbing inflation and protecting the economically disadvantaged segment of the population. These include through subsidized distribution of basic food items in urban areas and job creation through small and micro enterprises. In terms of outcome indicators, economic growth has been robust in the last decade, averaging more than 10 per cent. Consumption-based poverty rates have declined, and access to education and health services have improved. Export diversification within and across sectors has improved and eased the risk of reliance on a few primary commodities. Domestic revenue has shown an increasing trend. These are favourable conditions for advancing inclusive green economy policies in the country.

However, stability and predictability of policies and regulations is crucial for sustaining and advancing inclusive green economy policies. Frequent changes in government proclamations and

regulations result in unproductive speculations and unpredictable behaviour of the private sector, both of which trigger economic instability. Recent studies, such as those by Ferede and Belew in 2014 and Amha Szirmai and others in 2012, indicated that lack of predictability and frequent changes in policies and regulations as problems preventing businesses from undertaking profitable ventures.¹²

¹² For example, the Ministry of Mines officially banned the export of rough precious stones to encourage value addition in late 2012. However, around mid-2013, the Ministry retracted the decision and allowed the export of the raw precious stones (gemstones) (Ethiopian Inclusive Finance Training and Research Institute, 2014). Moreover, in 2011/12, the Government decided to cap prices on 17 imported and domestic commodities in an effort to ease inflationary pressures. No sooner had the price cap been announced than a revision was made to prices of commodities and the Government has been continuously revising the list of commodities subject to price fixation (PSD Hub, 2012). The Commercial Registration and Business License Proclamation No. 686/2010, which was introduced around 2011/12, is under discussion for revision. Similarly, the Investment Proclamation No. 769/2012, which has been in operational since 2012 is being revised.

3. Ethiopia's structural transformation agenda

Structural transformation is a process of change of the composition of the economy where the share of modern manufacturing and services increases and the share of agriculture decreases, in terms of both output and employment. In the process, a rapid shift in the location of economic activities from rural to urban areas and demographic transition from high birth rate-high death rate to low birth-low death rates takes place (Kuznets, 1966, 1989). Structural transformation is a sought after goal of developing economies in order to increase productivity and per-capita income, as well as sustainably improve the standard of living of the people. Successful structural transformation entails enhancement of social well-being, eradication of poverty, provision of decent work and increase of self-esteem. Shifting focus to higher productivity sectors, such as manufacturing and modern services, and the subsequent increase in income forms the basis for improved living standards and eventual demographic changes.

In Ethiopia, agriculture has been dominating in both output and employment share. The service sector is closing gaps in terms of output share but remains far behind agriculture in employment share. Structural change in the form of shift from agriculture to industry has not been observed so far. The observed shift was rather from agriculture to services, where expansion of the wholesale and retail trade, real estate, renting and related business was the driving force (Ministry of Finance and Economic Development, 2014).

The structural transformation agenda remains crucial to Ethiopia since the country's economy is on the initial rungs of the structural ladder that leads to the transformation of the economy from an agrarian- to a modern manufacturing- and service-based economy. This transformation needs

to be founded on new forward-looking structural footing to ensure economic, social and environmental sustainability.

Social inclusion ensures the exertion of concerted efforts and collaboration in pursuit of structural transformation. Inclusiveness prevents conflict and promotes harmony, which is necessary for long-term and continuous processes of structural transformation. Interruptions and discontinuities in economic and social processes restrain the learning-period and experience required to make progress. Moreover, social inclusion ensures that all sections of society have opportunities for decent employment and income generation. In doing so, improving human capabilities is crucial to take advantage of opportunities. Requirements for social inclusion are investment in education, health and other social services to expand human capacities, and promote sound and quality institutions. Social safety nets are meant to protect chronically poor and vulnerable sections of society who cannot participate in and benefit from emerging opportunities for growth. It requires interventions in labour market policies and programmes, social insurance programmes, and social assistance. Thus, the promotion of socially inclusive approaches provides the labour force required for productive purposes and the process reinforces itself through enhancement of a structure that requires the extended use of labour resources, meaning the build-up of sustained capacity to create employment.

Despite rapid growth in Ethiopia, there is widespread concern that the current growth has not created sufficient productive employment to lift a large proportion of the population out of poverty (ILO, 2013; McKinsey, 2012). For growth to be sus-

tainable in the long run, it should be broad-based across sectors, inclusive of the large part of the labour force, and pro-poor.

Similarly, environmentally sustainable economic activities will enable long-term progress in structural transformation. Under a green economy, processes that lead to rapid depletion and uncontrolled degradation of environmental and natural resources are not expected to take place, meaning that structural transformation is not expected to yield unsustainable outcomes. Although the motivation for green economy policies are inherently linked to environmental issues, the centrality of the environment in driving economic transformation in Ethiopia is well recognized as it directly and indirectly affects economic and social sectors (OECD, 2012). This cuts across different socioeconomic groups and actors in the economy and calls for the building of political and institutional coalitions within government. Mobilizing mass support has also been critically important to the success of green economy policies and strategies in assisting and shaping the structural transformation process.

3.1 Growth and Transformation Plan as Ethiopia's main structural transformation framework

In the early 1990s, the Government of Ethiopia introduced an agriculture-based development strategy known as the Agricultural Development Led Industrialization Strategy. The basis for the adoption of this strategy was the recognition of the strategic importance and centrality of the agricultural sector for the overall economy, and the advantage in using the available resources of land and labour, while progressively increasing capital share in resource endowment. The focus on agriculture stems from the predominantly agrarian nature of the economy and from the premise that "it is difficult to trigger economic development without rural development" in the Ethiopian context (Ministry of Finance and

Economic Development, 2014). All subsequent plans recognize the abovementioned strategy as the overall development framework.

The most recent endeavour to advance the structural transformation agenda is the Growth and Transformation Plan, which was adopted in 2010/11. The main objectives of Plan include to: sustain and achieve double digit growth (average real GDP growth rate of 11 per cent); achieve the Millennium Development Goals, expand and improve the quality of education and health services; maintain stable macroeconomic conditions; and ensure sustainable nation building through a stable democratic and developmental State. The Plan's growth goals are ambitious and include achieving an average real GDP growth rate of 11.2 per cent under the base case scenario and of 14.9 per cent under the high case scenario between 2010/11 and 2014/15. In terms of sectoral structure, the agriculture (14.9 per cent) and industry (21.3 per cent) sectors are expected to drive the overall growth under the high case scenario, while industry (20.0 per cent) and services (10.8 per cent) sectors would boost the overall growth under the base case scenario (Ministry of Finance and Economic Development, 2010). This would enable Ethiopia to achieve the Millennium Development Goals by 2015 and to raise the country to middle-income status by 2025. The proportion of poor population (total poverty headcount ratio) is also projected to decline to 22.2 per cent by the end of the plan period. In addition, other macroeconomic goals include maintaining stable price conditions and generating significant increases in the share of GDP accounted for by exports and imports, domestic savings and investment, and fiscal revenues.

The Growth and Transformation Plan is based on a number of pillars to achieve the main goals and objectives, including sustaining faster and equitable economic growth, maintaining agriculture as a major source of economic growth, enhancing expansion and quality of infrastructure development, improving the coverage and quality of social development, creating favourable conditions

for industry to play a key role in the economy, enhancing capacity development and good governance and promoting gender and youth empowerment and equity.

The Plan is a continuation of the five-year plans within the poverty reduction strategy programme framework and beyond. It recognizes the weaknesses and builds on the achievements of the Plan for Accelerated and Sustained Development to End Poverty, the preceding five-year plan. The Growth and Transformation Plan targets economic sectors such as agriculture and rural development, industry, trade, mining, and infrastructure development. The social sector section comprises education and training, and health sector development. The emphasis laid on infrastructural development is also notable in the Plan. Roads, railways, energy, telecommunication, potable water and irrigation development, transport services, maritime transport, air transport services, and construction and urban development are the main components of the infrastructure development section. Achievements in the development of these sectors could indeed create a solid foundation for the transformation process by reducing the transaction costs for society and enable a smoother economic interaction. Table 10 provides a summary of the key elements of the Growth and Transformation Plan. The main areas of focus of the Plan are discussed in the subsection below.

3.1.1 Agriculture and rural development

Maintaining agriculture as a major source of economic growth among the main strategic pillars of the Growth and Transformation Plan. The strategy identifies agricultural development as the basis to create favourable conditions for industry. The strategic direction of agricultural and rural development is strengthening agricultural development led industrialization, which takes agriculture as a leading sector by virtue of its labour intensity, linkages and being the sector where the poor largely reside. The

components of the strategy are smallholder agricultural development, pastoral development, and private sector development (large-scale commercial agriculture). Smallholder agricultural development is planned to scale up best practices, expand irrigation, conserve natural resources, and produce high value crops. Water and irrigation development, and resettlement are the main policy targets for pastoral development. Development of private commercial farms, as exemplified in floriculture, is the other strategic direction. With a new additional emphasis on commercialization, the Plan continues to achieve the objectives and goals of the Agricultural Development Led Industrialization Strategy. From an inclusive green economy perspective, it is possible to discern the implications of both the Plan and the Strategy. Agricultural development remains at the centre of the development strategy to be implemented in the five-year plan. Hence, the inclusive green economy implications of the Growth and Transformation Plan are largely found in the agricultural and rural development initiatives, which are largely based on natural resources and constitute the livelihood of the majority of rural population.

3.1.2 Industrial sector and industrialization

The Plan emphasizes the importance of a large commercial sector and improvement of the productivity of smallholder agriculture through improved access to suitable and affordable farm technologies, and agriculture-industry linkages, among others. Identifying and supporting industries that provide improved technologies to the agricultural sector and are closely linked to research centres is therefore crucial. These insights point to the need to promote agriculture and industry simultaneously as industrialization is difficult without a robust agricultural sector in an agriculture-dominated economy.

Agriculture can develop with the use of modern technologies. Thus, the strategic importance of directly or indirectly promoting a domestic manu-

facturing sector that has linkages with agriculture should be recognized. The strategic direction during the Growth and Transformation Plan timeframe is creating favourable conditions for faster industrial development through the development of micro and small enterprises, large and medium scale industries, industrial zone development, and effective public enterprise management and privatization.

The Plan specifically identifies the following large and medium scale manufacturing subsectors that are strategically important to the realization of growth and transformation goals (Ministry of Finance and Economic Development, 2010): the textile and garment industry; the leather and leather products industry; sugar and sugar-related industries; the cement industry; the metal and engineering industry; the chemical industry; the pharmaceutical industry; and the agro processing industry. The focus on the development of industries that demand agricultural inputs such as textiles, leather, sugar and agro-processing manufacturing helps to strengthen the link between the agriculture and manufacturing sectors.

With a renewed focus on industry in general and manufacturing in particular, development and production of capital and consumer goods using green technologies should be emphasized. Development or adoption of green technologies requires the evolution of a new direction of production and consumption patterns, shaping the structural transformation process along a different path. Scientific and technological knowledge are key factors in developing and adopting green technologies that will be part of the structural transformation to modern economic and social life.

3.1.3 Trade

The Government of Ethiopia has introduced reforms including liberalizing trade in general and expanding export trade in particular in the past two decades. This has continued to have an impact on the country's economic performance and business

environment. In the Growth and Transformation Plan period, the strategic direction in the trade sector is strengthening domestic and foreign trade, promoting efficiency and competitiveness, improving domestic trade and distribution systems, ensuring consumer rights, and strengthening the legal framework for trade practices (Ministry of Finance and Economic Development, 2010). To this end, the Government of Ethiopia issued two proclamations in 2010: The Trade Practice and Consumers' Protection Proclamation No 685/2010, and the Commercial Registration and Business Licensing Proclamation No.686/2010, through which a uniform and harmonized system of trade registration and licensing has been introduced in the country. Key innovations of the second proclamation include use of a single identification number for commercial and tax registration, one-time registration, and a centralized commercial register. Reducing informality and dealing with illegal activities by putting in place a robust regulatory mechanism is another objective of enacting the Proclamations. In so doing, the trade registration and licensing system ensures fair and transparent transactions, easy access to services and focus on the professional efficiency and competency of services provided to the business community, thereby enhancing inclusiveness.

3.1.4 Development of social sectors

The Growth and Transformation Plan specifies the strategic directions in social sectors such as education and health that are key to reducing poverty and inequality, and enhancing the country's capacity to advance structural transformation. The Government's focus on these sectors has been demonstrated through the expanded budget allocation to these sectors. Expanding general education, ensuring the quality of technical and vocational education and training, and improving the quality and relevance of higher education are among the strategic directions in education and training. The health sector development programme during the Growth and Transformation Plan period prioritizes maternal and newborn

care, child health, and halting and reversing the spread of major communicable diseases, including malaria, tuberculosis and HIV/AIDS.

In addition, the integrated urban development and renewal programme is one of the key components of the transformation agenda of the country. This programme involves housing provision, urban upgrading, job creation, and infrastructure development in major urban centres in the country. The aim of the Plan is to achieve the Millennium Development Goal target of halving extreme poverty and hunger by 2014/15. Accordingly, the total poverty and food poverty headcount ratios are expected to decline from 29.6 per cent and 33.6 per cent in 2009/10 to 22.2 per cent and 21.2 per cent in 2014/15, respectively (Ministry of Finance and Economic Development, 2014).

cultural growth can be achieved through the conservation of natural resources; development of water resources and the improvement of their utilization (both surface and underground water); and expansion of irrigation coverage. The enhanced implementation of environmental laws, targeting degradation, pollution and natural resource depletion, and the undertaking of adaptation and mitigation measures to counter climate change constitute important resource management strategies. Implementing soil and water conservation activities through organized community participation and forestry development, protection and utilization are other important natural resource conservation and management approaches. To that end, capacity-building for farmers and government support structures is considered crucial.

3.1.5 Natural resources management

The Growth and Transformation Plan addresses natural resource management issues such as environmental conservation and building a climate-resilient green economy. The Plan recognizes that accelerated and sustainable agri-

3.1.6 Urban-rural linkages

Structural transformation through a rapid shift in the location of economic activities from rural to urban areas is closely linked with the speed of expansion of the manufacturing and service sectors and their employment potential. The shift towards

Table 10: Summary of key dimensions of the Growth and Transformation Plan

Structural transformation dimension	Sectors	Activities to contribute to the dimensions
Rapid economic growth	Agriculture	Improve productivity through scaling up best agricultural practices, adoption of new technologies by farmers and pastoralists;
		Livestock fattening and dairy development technology;
		Expansion of irrigation coverage; development of underground and surface water, pastoral land irrigation development;
		Improve farm income through production of high value crops and diversification;
	Industry	Promote and support micro and small enterprise development through skill development (e.g. entrepreneurship, technical and vocational skills), and other inputs supply (e.g. land and shade premises and credit);
		Promote medium and large industry development; labour-intensive manufacturing industries such as textiles, leather, agro processing (food and beverage), cement, chemical and pharmaceutical;
		Skill and capacity enhancement of the manufacturing sector through Twinning programme, benchmarking, Kaizen model;
		Financial and fiscal incentives for exporting manufacturing firms;
		Improve market integration, business environment (e.g. business registration and licensing, tax administration)

Structural transformation dimension	Sectors	Activities to contribute to the dimensions
Social inclusion	Education	Expansion of basic educational services through equitable access to quality primary education, functional adult literacy, cost-effective and participatory early childhood care and education;
		The expansion of both primary, high and preparatory schools;
		Improve access to education services of children in emerging regions; implement affirmative action for children with vulnerabilities;
		Special schools and programmes in pastoral and semi-pastoral areas such as open multi-grade classes, mobile and para-boarding schools and school feeding programmes;
		Develop and improve technical and vocational education and training;
		Reduce gender disparity and provision of education strategy for children with special needs;
		Build and enhance the capacity of technology institutes;
		Focus on science and technology; admission to higher public universities is such that 70 per cent for Natural Sciences and Technology and the rest for Social Sciences.
		Special admission criteria in higher public institutions for females and students from emerging regions;
		Scholarship opportunities and tutorial support for females;
and	Health	Expand physical health infrastructure through construction, expansion and improvement of health centres and hospitals, including expansion of specialized hospitals;
		Achieve universal coverage of primary health care;
		Expand Health Extension Programmes; deployment of health extension workers;
Social security/welfare	Other	Expand access to power (energy), water, roads, communications, labour market information, affirmative action for females in recruitment;
	Productive Safety Net Programme	Establish a standard social welfare scheme involving the Government, non-governmental agencies, elderly and people with disabilities in the preparation and delivery;
		Both cash and in-kind transfer; direct and unconditional cash transfers for elderly and disabled;
		Participation in labour-intensive public works (e.g. water and soil conservation, road construction);
	Subsidized food distribution	Distribution of subsidized commodities (e.g. wheat), especially in urban areas;
Climate change mitigation and adaptation and environmental sustainability	In all sectors	Main activities include increased use of compost on farmland; development of renewable energy; natural resources management such as afforestation/reforestation; waste management; mixed farming and forestry for biogas emission mitigation; part designation; ethanol and biodiesel production; enactment of environmental laws.

Source: Ministry of Finance and Economic Development (2010); National development strategies (various documents and Climate-Resilient Green Economy Strategy document).

manufacturing has been sluggish. The share in output and employment of the manufacturing sector has not shown a remarkable change both during Plan for Accelerated and Sustained Development to End Poverty and Growth and Transformation Plan periods (Ministry of Finance and Economic Development, 2010). The ongoing process under the Growth and Transformation Plan is largely intended to create favourable conditions

for the industrial sector. The service sector has expanded substantially, especially in the Growth and Transformation Plan period, but its employment potential is limited. The participation of the private sector, especially in the manufacturing sector has remained weak. Further investigation is required to ascertain whether this outcome is closely linked with the practical implications of the Agricultural Development Led Industrialization Strategy.

4. Analysis of inclusive green economy policies and their role and significance in fostering structural transformation

4.1 Rationale for inclusive green economy policies in Ethiopia

Ethiopia has been combating climate-related disasters for decades. Disaster risk management planning and implementation have been significant concerns for the country since the 1970s. The genesis of environmental and social protection in Ethiopia has been associated with the occurrence of natural disasters and risks, and subsequent establishment of institutions responsible for managing nature-induced disasters and risks (Abebe, 2009). In 2013, the Government of Ethiopia adopted a national policy and strategy on disaster risk management to address the root causes of the problem (Federal Democratic Republic of Ethiopia, 2013). The Environmental and Social Management Framework was among the latest country plans intended to address climate-related risks. Its objective was to strengthen institutions in terms of disaster risk reduction, improve early warning capacity and improve disaster recovery efforts. Additionally, a strategy towards climate change mitigation and adaptation has been adopted.

Key driving forces behind the transition to a green economy in Ethiopia include growing concerns about environmental degradation arising from past and current economic growth patterns, and increased awareness of potential climate change impacts that necessitate a substantial transformation of behaviour. The adoption and implementation of an inclusive green economy provides the basis for a modern and sustainable economic structure that takes into account social and environmental concerns.

Ethiopia's economy is highly vulnerable to climate change. In Ethiopia, greenhouse gases are released mainly through combustion of fossil fuels, animal husbandry, nitrogenous fertilizers, biomass burning, irrigated fields, and deforestation (Uzawa, 2003). The level of carbon emissions in Ethiopia was about 150 Mt CO₂ per annum in 2010, half of which is generated by the agricultural sector. Under a business as usual development path, greenhouse gas emissions will increase to 400 Mt CO₂ in 2030, with agriculture (including livestock), forests and industry estimated to contribute 46.3 per cent, 11.3 per cent and 17.8 per cent of the total greenhouse gas emissions, respectively (see table 11). Other sectors such as transport, buildings and power, together, would create to 24.7 per cent of the total greenhouse gas emissions by 2030. Under the business as usual scenario, the livestock and industrial sectors, together, would contribute up to 49 per cent of total greenhouse emissions by 2030. The business as usual scenario would have significant economic, environmental and social costs in the form of reduced and unsustainable economic growth, loss of biodiversity, deforestation, soil degradation, lower quality of life and health problems. Population pressure would exacerbate the situation, particularly in rural areas.

Therefore, the challenge confronting Ethiopia is not only to enhance growth along a green trajectory, but to also translate the rapid economic growth into sustained and inclusive development through economic diversification that creates jobs, reduces poverty and inequality, and enhances access to basic services. Cognizant of

these imperatives, the Government of Ethiopia adopted the Climate-Resilient Green Economy Strategy in 2011.

4.2 Evolution of green economy policies and strategies

Ethiopia has been a champion of the green economy paradigm as reflected by landmark green economy-related policies and initiatives since the early 1990s (see figure 14). The introduction of regulations to manage pollution from the palm oil industry was one of the first greening steps taken by the Government. The step-wise greening approach thus far, consisted of the formulation of supporting policies, mainly at the sectoral level, for the transition to a green economy. To date, the most comprehensive and consolidated green economy policy framework is the Climate-Resilient Green Economy Strategy, which

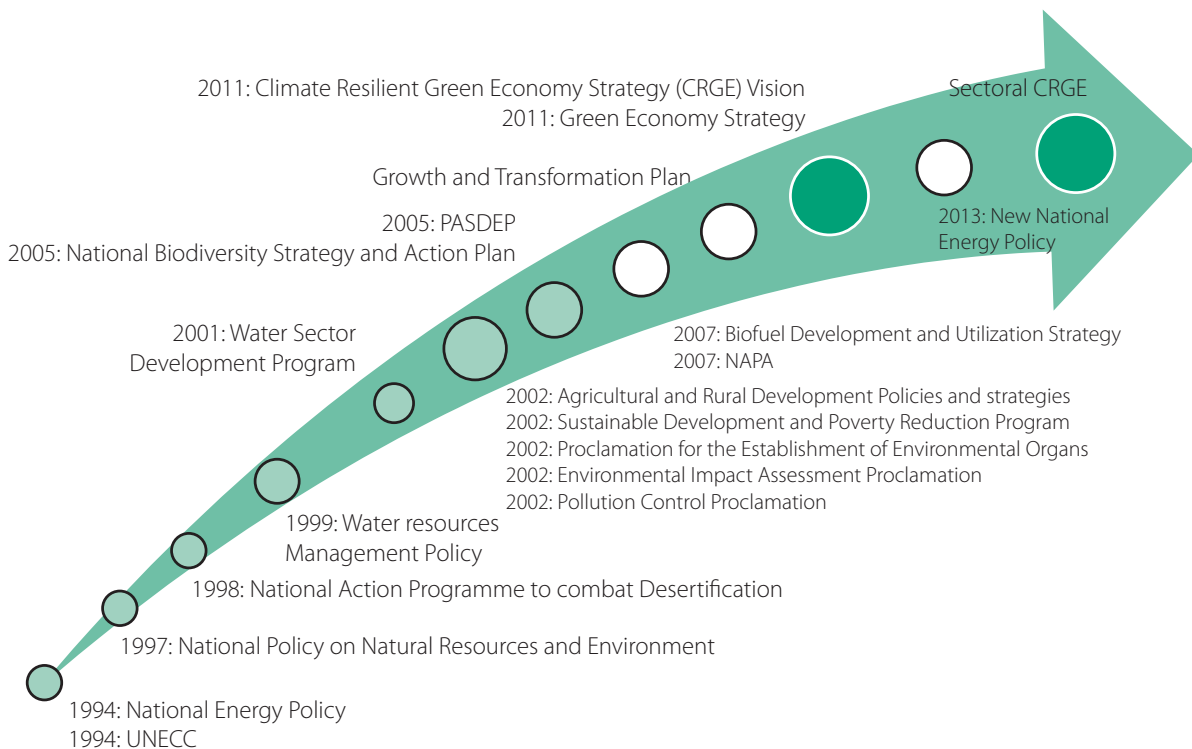
has been integrated into the Growth and Transformation Plan (Ministry of Finance and Economic Development, 2010).

4.3 Development of the Climate-Resilient Green Economy Strategy: Institutional arrangements and coordination

The Climate-Resilient Green Economy Strategy focuses on the need to secure resilience to climate change and is designed to achieve a low-carbon growth pathway through adaptation and mitigation.

The development of the Strategy received support from the highest levels of Government, which played a major role in its development and in raising awareness, and understanding of the green economy concept among the wider

Figure 14: Evolution of Ethiopia's green economy policies and strategies

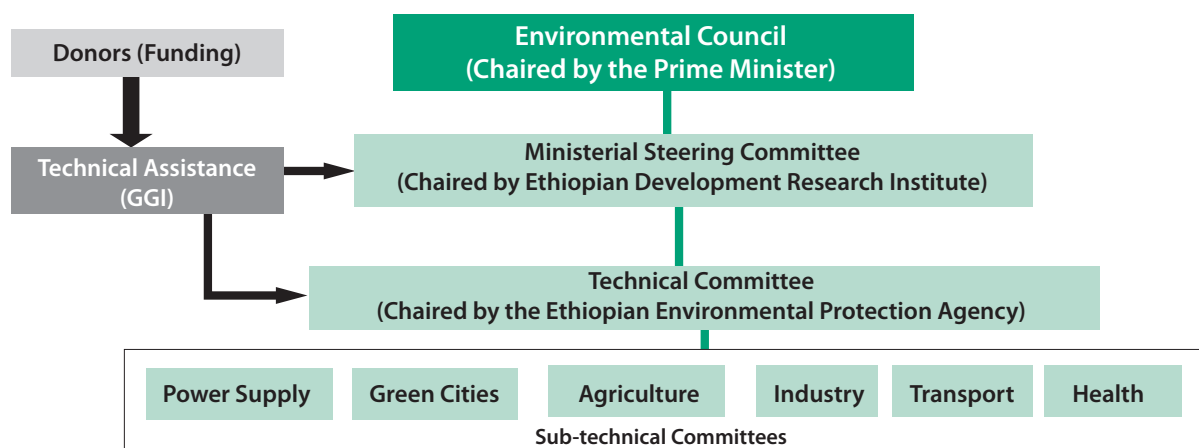


Source: Constructed (based on different policy documents)

public. The involvement of the highest body of the Federal Government in the development of the Strategy demonstrated the Government's commitment to an inclusive green economy. In particular, the Office of the Prime Minister, the Environmental Protection Authority, and the Ethiopian Development Research Institute played an instrumental role in the development of the Strategy (see figure 15). Other Ministries were also involved in the process. Although the preparation of the Strategy was guided by the Growth and Transformation Plan, its participatory nature features two dimensions: horizontally across sectors, and vertically from federal

Ethiopia has introduced the Strategy at the sectoral level and many sectors have been incorporated into the country's medium-term plan. Sector reduction mechanisms are being developed to guide the integration and implementation of climate-resilient green economy investments within federal and regional plans (Fikreyesus Szirmai and others, 2014). At the sectoral level, climate resilience strategies are being developed for the following sectors: agriculture and forestry, water and energy, transport, and urban development, housing and construction.¹³ The development of the Climate-Resilient Green Economy Strategy exhibited good practices, which are described in box 1.

Figure 15: Preparation of Climate-Resilient Green Economy Strategy



Source: Federal Democratic Republic of Ethiopia (2011).

level down to local communities and back up to the federal level (OECD, 2013). Discussions with selected stakeholders also indicate that the preparation of the Strategy was informed by consultations with representatives drawn from various public organizations and academia. Ethiopia's institutional arrangements with respect to the green economy reflect the interlinkages between a number of institutions. The preparation of the Strategy was coordinated by the then Ethiopian Environmental Protection Agency, which also led the technical committee, while the Ministry of Finance and Economic Development provided financial support.

4.4 Vision, goal and objectives of the Climate-Resilient Green Economy Strategy and its importance in structural transformation

Ethiopia is making great strides towards building a green economy. Its vision is to become a middle-income country by 2025, without increasing

¹³ In the draft climate-resilient green economy strategy for the water and energy sectors, eleven strategic priorities have been identified. The strategic priorities are clustered in five areas: power production; energy access; irrigation; access to water, sanitation and hygiene; and cross-cutting issues (e.g. data systems and delivery). Similarly, about 41 key options have been identified (from 350 distinct options) in the agriculture and forestry sector to address the negative impact of current weather variability and future climate change.

Box 1: Good practices including success factors and lessons learned in the development of the Climate-Resilient Green Economy Strategy

High level of political support in the Strategy formulation process: The preparation of Ethiopia's main inclusive green economy framework was initiated with high-level government vision and commitment. The subsequent launching of the Strategy benefited from strong leadership from the Office of the Prime Minister followed by ministerial representation on the Steering Committee of the Climate-Resilient Green Economy Strategy, signalling a strong message throughout the government offices that a green economy was a priority for the country. This strategy design processes has helped to get buy-in among stakeholders and to integrate it into the country's structural transformation plan.

Participatory process and focus on domestic priorities: Another aspect of the policy design process was its participatory nature. Although preparation of the Strategy was initiated at the top level, there were participatory processes both vertically and horizontally ensuring wider coverage and awareness (OECD, 2013). The process thus had strong leadership and support from the Federal Government, and visible representation of different sectors. This resulted into a Strategy that responds to domestic priorities such as economic growth, poverty reduction, employment, emission reductions, industrial growth, and natural resource protection, all of which are also important objectives of the Growth and Transformation Plan.

Local capacity development: In-house capacity development was also another aspect of the policy design process. Given the local capacity gap for undertaking the preparation of the Strategy, the Government of Ethiopia recruited foreign consultants and linked them with local experts drawn from different line ministries. The then Environmental Protection Authority was the overall coordinator, and local experts, particularly those within that body were heavily engaged during the preparation of the Strategy. This synergy helped local experts to gain skills for the subsequent preparation of climate-resilient green economy policies at the sectoral level. Currently, some sectoral federal Ministries, such as the Ministry of Agriculture, Ministry of Transport, Ministry of Urban Development, Housing and Construction, and Ministry of Water, Irrigation and Energy) have been able to prepare their own climate-resilient green economy documents with technical support from the Ministry of Environmental Protection and Forestry, suggesting creation of some local capacity in the Strategy preparation with minimum external support.¹

Coalition building: Although the motivation for green economy policies are inherently linked to environmental issues, the centrality of the environment in driving economic transformation, especially in Ethiopia is well recognized as it directly and indirectly affects economic and social sectors (OECD, 2012). This encompasses different socioeconomic groups and actors in the economy which means that building political and institutional coalitions within government and mobilizing mass support has also been critically important to the success of green economy policies and strategies. The development of strong and dynamic coalitions among State and non-State actors helped to ensure that high level support was maintained during political transitions, thereby cir-

¹ For instance, the Ministry of Urban Development, Housing and Construction aspires to build an urban climate-resilient green economy. In this regard, it has developed different strategies such as the Climate-Resilient Urban Greenery Development strategy, Urban Solid Waste Disposal and Management programme, and the Urban Productive Safety Net Programme. The draft Proclamation on Urban Greenery Management Initiatives will accredit green mark certification for building infrastructures which is expected to be incorporated into the next growth and transformation plan.

cumventing conflicting interests when the leadership changes. The late Prime Minister of Ethiopia played a key role in driving the formulation of the Strategy and its subsequent implementation. The building of a green economy is taking root in the country despite changes in leadership at the top, with renewed commitment and determination by government ministries.

Lessons learnt:

High-level commitment and support was instrumental in the formulation and implementation of the Strategy: The development of the Strategy was supported by strong leadership from the Office of the Prime Minister, followed by ministerial representation on the various Committees, thus sending a strong message to government offices that green economy planning and implementation was indeed the country's priority. The key areas of focus of the Strategy are investments in low carbon economic infrastructure; investments in high-potential low-carbon sectors; expanding access to services and new economic opportunities; improving social services and economic opportunities for the wider population; and investments in climate change adaptation infrastructure.

Informed by baselines, establishment of short- and long-term economic, environmental and social targets and their alignment with domestic economic, environmental, and social priorities help to advance green economy objectives. Such integration of green economy long-term objectives into the country's medium-term economic development plan helps to cascade economy-wide and sectoral targets and to monitor their progress against the set targets. The Strategy has been partially mainstreamed into the medium-term transformation plan of the country, with economic, environmental and social targets.

its greenhouse gas emissions. This commitment is expressed in the Climate-Resilient Green Economy Strategy adopted in 2011. The strategy contains two-pronged goals, including achieving high income and sustainability in powering the country to graduate to a middle-income country by 2025. It aims to reduce carbon emissions by about 62.5 per cent in 2030 compared with the business as usual development path. The Strategy is linked to the five-year Growth and Transformation Plan.

The overriding objectives of the Strategy include the following:

- (i) Fostering growth and economic development;
- (ii) Managing greenhouse gas emissions; and
- (iii) Improving resilience to climate change.

These objectives are to be achieved through two complementary strategies: the Green Economy Strategy and the Climate Resilience Strategy. While the former focuses on mitigation (e.g. greenhouse gas reduction), the latter is on adaptation (anticipating and adjusting to climate change risks). Specifically, the Climate Resilience Strategy focuses on the agriculture sector, due to its strategic importance to the national economy and livelihoods of a large segment of the society.

According to the Green Economy Strategy, GDP per capita would increase to more than US\$ 1,800 by 2030, while at the same time greenhouse gas emissions on a per capita basis would decrease to 1.1t CO₂e (Federal Democratic Republic of Ethiopia, 2011; OECD, 2013). Improving agricultural productivity and developing the industrial sector are essential to achieving this goal (see table 11). It should be noted that the Climate Resilience Strategy sup-

Table 11: Key sectors, targets, drivers and expected outcome under two development pathways

	Sector	Baseline, 2010		Business as usual development pathway, 2030	Green economy pathway, 2030
		Emission level (in CO ₂ e)		Key drivers	Expected emission level (in CO ₂ e) (target)
1	Agriculture		185		95
	Livestock	65	125	An increase of cattle population	77
	Soil	12	60	Increased use of chemical fertilizer Land expansion for agriculture	18
2	Forestry	55	90	Deforestation due to agricultural land expansion	-40
				Deforestation due to fuel wood and logging	
3	Transport	5	40	Emissions from freight transport	30
				Emissions from passenger transport	
4	Industry	4	70	Cement industry	50
				Other industries	
5	Buildings	5	10	Waste due to urbanization	5
				Off-grid energy consumption	

Source: Federal Democratic Republic of Ethiopia (2011)

plements the Green Economy Strategy by enhancing its key recommendations in terms of climate resilience. However, the transition from current agricultural practices towards green agriculture and related enterprises requires significant investments in irrigation, water and soil conservation, education, extension, together with strong commitment to promoting and implementing a green economy.

A low carbon economy is characterized by activities that emit low levels of carbon dioxide into the atmosphere and minimal levels of other greenhouse gases (Regions for Sustainable Change, 2013; Levy, 2010). In the process of preparing the Climate-Resilient Green Economy Strategy, about 150 potential green economy initiatives were identified and analysed, with 60 initiatives that support the achievement of development goals and reduce greenhouse gas emissions being prioritized. There are two ways to reduce green-

house gas emissions: substitution to a good or service whose production or consumption emits less greenhouse gases; or change of technique that involves switching to a completely new technique and/or increase efficiency of existing technique (European Commission-International Institute for Labour Studies, 2013).

There are four pillars in the green economy strategy:

- (i) Adoption of agricultural and land-use efficiency measures;
- (ii) Protecting and re-establishing forests for their economic and ecosystem services including as carbon stocks;
- (iii) Deployment of renewable and clean power generation; and
- (iv) Use of appropriate advanced technologies in industry, transport, and buildings.

Table 12: Main sectors, goals and activities/drivers in the Climate-Resilient Green Economy Strategy

	Economic Activities	Main goal	Specific activities/drivers
1	Crop	Improving crop and livestock production practices for higher food security and farmer income while reducing emissions	<ul style="list-style-type: none"> • Encourage intensive or yield enhancing technique; • Introduce improved crop residue management practices; • Expand irrigation, especially in degraded areas (small and large scale agriculture); • Introduce and promote organic fertilizers;
2	Livestock		<ul style="list-style-type: none"> • Increase animal value chain efficiency; • Enhance diversification of animal mix; • Promote mechanization; • Improve animal health services; • Improve pastureland; • Promote consumption of poultry;
3	Forestry*	Protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks;	<ul style="list-style-type: none"> • Disseminate and use fuel-efficient stoves, especially in rural areas; • Provide alternative fuel cooking and baking techniques (e.g. electric, liquid petroleum gas, or biogas stoves mainly in rural areas); • Promote afforestation, reforestation, and improve forest management; and • Promote area closure, especially in degraded areas.
4	Energy/Power	Expanding electricity generation from renewable sources of energy for domestic and regional markets	<ul style="list-style-type: none"> • Expand and exploit hydropower, geothermal, solar and wind power • Promote energy saving technology (e.g. Electric stoves, LPG stoves, and biogas stoves);
5	Transport	Leapfrogging to modern and energy-efficient technologies in transport, industrial sectors, and buildings	<ul style="list-style-type: none"> • Introduce fuel efficiency standards for passenger and cargo transportation; • Promote the purchase of hybrid and electric vehicles; • Construct an electric rail network; • Introduce urban electric rail; • Substitute imported fossil fuels with domestically produced biodiesel and bio-ethanol;

* The forestry sector contributes about a quarter of projected greenhouse gas emissions levels under a business as usual scenario and offers great abatement potential through reduced deforestation and forest degradation. In doing so, Ethiopia has adopted REDD+ as a climate change mitigation mechanism for the forest sector (Ministry of Agriculture and Environmental Protection Authority, 2013). The REDD+ interventions focus on addressing the main drivers of deforestation and degradation: conversion to agricultural land and unsustainable fuel wood consumption. This can be achieved through increasing agricultural yields, managing soils and forests better, and adopting alternative energy sources and energy efficient cooking technologies. These interventions are expected to reduce pressure of agricultural expansion on forests, reduce demand for fuel wood, and increase sequestration.

Table 12 provides main green economy drivers or activities in the Climate-Resilient Green Economy Strategy summarizing their relevant goals and specific activities.

The Green Economy Strategy follows a sectoral approach. It identifies, and prioritizes different initiatives to reduce greenhouse gas emissions. The Government of Ethiopia used policy-screening criteria to prioritize and select a small suite of priority options. These criteria were: local relevance and feasibility; alignment with Growth and Transformation Plan; and low cost abatement potential. In implementing the Climate-Resilient Green Economy strategy, four initiatives have been selected to fast-track implementation of the Strategy: hydropower development, rural cooking technologies, the livestock value chain, and forestry development (Ministry of Environmental Protection and Forestry, 2014).¹⁴ These initiatives offer the prospect of immediate economic growth, large carbon abatement potential, and have the potential to attract international climate finance (Eshetu Szirmai and others, 2014).

4.5 Inclusiveness and the Climate-Resilient Green Economy Strategy

A green economy development pathway entails substantial restructuring of the overall economy in terms of both output and employment shares. This type of structural change needs to be both green and inclusive, leading to a green economy and green society. This differs from the earlier structural transformation model, in which urbanization and industrialization was achieved through a carbon-dependent process with heavy environmental and social costs (Cook and others, 2012). During a green economy transition, jobs could be lost in certain sectors, while others can

change in nature, and yet others could be created (United Nations Research Institute for Social Development (UNRISD), 2012; ILO, 2011).¹⁵ The skill composition of workers in high and low carbon intensive sectors matter for employment transition, as some workers may need skills upgrading as sectors move to lower carbon emissions, while workers in the high carbon intensive sectors will shift to a completely new employment that might be completely unrelated to their previous employment (ILO, 2011).

The Government of Ethiopia is committed to building a green economy as a means of lowering carbon emissions and promoting social inclusion through employment opportunities. There are already various initiatives to support the green economy transition and achieve social goals. Although not clearly spelled out in the Climate-Resilient Green Economy Strategy, certain aspects of the social dimension feature in the strategy (see table 14). Some green interventions, such as the dissemination of fuel-efficient cooking stoves and use of mechanization in farming, would enhance social inclusion by benefiting the economically disadvantaged groups of society, especially rural women, by improving their health and reducing their workload. Similarly, green investments such as local production of fuel-efficient stoves and investment in infrastructure (e.g. railway and waste recycling) would also encourage creation of green jobs, which mainly benefit the unskilled young population (both women and men). However, employment generated from infrastructural investments (e.g. roads) is largely temporary in nature, and social protection and job security have remained an issue. This indicates that further efforts are required to determine the social impact of the climate-resilient green economy interventions; identify losers and winners; and identify mechanisms to compensate those adversely affected by green interventions.

¹⁴ Information obtained from the Climate-Resilient Green Economy Facility indicates that about US\$ 21 million has been allocated to fast-track investment in selected priority sectors such as agriculture, water, irrigation and energy, forests, industry, transport and urban development (Climate-Resilient Green Economy Facility Briefing, 2014).

¹⁵ Bastos (2012) indicates the adverse effect of biofuel farming in Brazil, India and Indonesia as it displaces people from their livelihood. Similarly, conservation of carbon sinks in Australia constrains the livelihood opportunities of indigenous peoples and has excluded traditional owners from participation in green economy (Winer and others, 2012).

Table 13: Social dimensions of selected activities in the Climate-Resilient Green Economy Strategy

Green economy activities	Potential impact on women	Potential impact on youth	Remark
Encourage intensive or yield enhancing techniques (e.g. use of carbon- and nitrogen-efficient crop cultivators)	Reduce workload of rural women on the farm; generate better income;	Training and employment opportunities; more time for other activities (e.g. schooling);	Enhances crop productivity. But whether or not this improves household income depends on relative prices, i.e. how the prices of food crops change compared with non-food items, especially prices of crop inputs
Expand irrigation, especially in degraded areas	Enhance food security; employment	Training and employment opportunities;	Provides stable food production enhances food security
Promote mechanization	Reduce workload of rural women	Training and employment opportunities; more time for other activities such as schooling, other business activities (e.g. maintenance services and supply of spare parts)	Encourages development of other services activities in rural areas
Dissemination and usage of fuel-efficient stoves	Improve health; save time;	Training and employment opportunities; more time for schooling;	
Physical infrastructure investments (e.g. roads, urban housing development, and railway)	Better living conditions (e.g. housing); employment; income;	Training and employment opportunities; income	Employment opportunities created in the infrastructure are mainly temporary in nature, with limited social protection. Both job security and quality of jobs have remained a concern.
Green rural electrification (e.g. hydropower, solar and geothermal)	Improve health and living conditions; reduce workload of rural women	Training and employment opportunities; more time for other activities (e.g. schooling);	

Source: Constructed from the Climate Resilient Green Economy Strategy.

The social dimensions of a green economy need to address key issues, such as impact of green economy initiatives and strategies on different social groups and patterns of inequality, mechanisms to avoid adverse effects of green economy policies and strategies, and whether or not adequate compensation mechanisms are in place.

Although the climate-resilient green economy interventions focus on sectors on which the majority of the poor depend, poverty impacts on different segments of the population, such as

women, youth, and persons with disabilities, and consequences of such interventions for those groups have not been estimated. Moreover, the Strategy does not provide any quantitative targets and indicators on key social dimensions.

Without measurable targets and indicators, it is difficult to track the social dimensions of green economy interventions. It seems that the social issues are seen as secondary to economic and environmental concerns, and that poverty reduction is often assumed to follow from employ-

ment and other aspects of well-being associated with a low-carbon development path (Cook and others, 2012; OECD, 2010). Hence, integration of social concerns into economic and environmental policy design and implementation is crucial to enhance social inclusion. Efforts are being made to integrate social and distributional issues in the project selection stage in the sectoral climate-resilient green economy strategies. For instance, in the preparation of the Climate Resilience Strategy for agriculture and forestry, equity and distributional issues have been explicitly used as one of the criteria to select climate adaptation options.¹⁶

There is still a need for social, economic and environmental policies to be more integrated, complementary and synergistic with other sectoral climate-resilient green economy strategies (UNRSID, 2012). Labour market regulation for “decent work” is another crucial area that needs close attention. From an inclusive green economy perspective, there is a need to pay attention to not only the number of jobs created but also the quality of jobs and working conditions. For instance, the country does not report green jobs separately in any of its major surveys or statistics of employment, such as National Labour Force Surveys, nor does it measure or report the size or growth of green industries. This highlights a glaring need to continuously monitor the growth of the green economy and to report green industries and jobs as part of the country’s statistics.

Many of the social dimensions that are not explicitly indicated in the Climate-Resilient Green Economy Strategy have been incorporated into the Growth and Transformation Plan (see Chapter 3). Even then, it is not clear whether or not targets, indicators and outcomes related to social dimen-

sions in the Growth and Transformation Plan are due to green economy interventions; and the impact of green economy interventions on key social dimensions has remained unclear.

4.6 Implementation of the Climate-Resilient Green Economy Strategy

Implementation of the Climate-Resilient Green Economy Strategy and sectoral environmental policy reforms that support both green industries and the greening of the economy as a whole fall under the mandate of the various sectoral institutions, such as the Ministries of Agriculture, Industry, and Water, Irrigation and Energy.

While the Ministry of Finance and Economic Development provides financial support for sectoral climate-resilient green economy activities, the Ministry of Environmental Protection and Forestry is responsible for technical coordination and provides technical support to other Ministries. However, not all Federal Ministries are currently implementing the Climate-Resilient Green Economy Strategy as a guiding framework. Stakeholder consultations indicate that the depth of information on the green economy strategy has been limited in some government offices.

The overall responsibility for and oversight of the Climate-Resilient Green Economy Strategy lies with the Environmental Council chaired by the Prime Minister and comprises members drawn from Federal Ministries, Presidents of National Regional States, and representatives of non-governmental bodies, the private sector, and trade unions.

The Climate-Resilient Green Economy Strategy is coordinated and supervised by the Climate-Resilient Green Economy Strategy Ministerial Steering Committee and units have been established in key implementing line Ministries and regions to translate the Strategy into sectoral programmes and investment plans. The Government of Ethi-

¹⁶ In the draft Climate Resilience Strategy for agriculture and forestry, about 350 adaptation options in agriculture have been identified from a long-list of 1000 potential adaptation options. Next, the 350 unique options were filtered down to 41 promising options based on feasibility, contribution to economic growth, contribution to equity and distributional issues, and the extent to which they address the current weather variability and future impacts of climate change (Federal Democratic Republic of Ethiopia, n.d.).

opia has established a national financing mechanism, the Climate-Resilient Green Economy Facility, to support the implementation of the priorities set out in the Strategy and the subsequent development and implementation of relevant investment plans. The Ministry of Finance and Economic Development together with the Ministry of Environmental Protection and Forestry has been in charge of soliciting financial support from international sources and of administering climate-resilient green economy-related funds. The Facility, where bilateral and multilateral donors channel climate funds for green activities, needs to conform to the overall goals and strategic directions set by the Environmental Council and the Climate-Resilient Green Economy Strategy Ministerial Steering Committee. Currently, the Facility is coordinated by the Ministry of Finance and Economic Development. The Ministerial Committee governs the Facility and sets criteria and scope for approving investment plans, and determines the overarching priorities for the Facility. Given that the Ministry of Finance and Economic Development is in charge of soliciting finance for development programmes and projects, the placement of the Facility within Ministry of Finance and Economic Development helps to prioritize and direct allocation of funds among different development programmes.

Awareness and implementation of the Strategy has yet to spread to the lower levels of government, NGOs and private actors. Financing the implementation schemes has to be worked out beforehand to gain momentum and enable self-reinforcement. Reports indicate the readiness of Ethiopia for climate finance. In a consultative meeting hosted by Ethiopia in Addis Ababa in February 2014 on the readiness of Ethiopia for climate finance, it was indicated that there is a high level of “readiness and understanding of climate finance in Ethiopia, strong institutional arrangements and political commitment to support Ethiopia’s aspiration to gain accreditation to the Global Adaptation Fund and consequently, the newly established Green Climate Fund (UNDP, 2014). The readiness of the government will be strengthened if a strong readiness is built across public institutions and other stakeholders. Ethiopian public enterprises and businesses have to be assessed for their awareness of global opportunities and assistance provisions or for their readiness for climate finance. It is necessary to have an institution responsible for guiding and directing inclusive green economy actors to available sources of funding, such as the Sustainable Energy Fund for Africa, the Global Environment Fund the Climate Investment Funds, and the Green Climate Fund (African Development Bank-OECD, 2013).

5. Linkages and coherence between inclusive green economy policies and those directly addressing structural transformation in Ethiopia

The transformation agenda of the Government of Ethiopia crucially depends on the development of the agricultural and industrial sectors. In the process of structural transformation, the relative importance of sectors changes in the economy, in terms of production and utilization of production factors. This would usually require shifting labour and other resources from subsistence agriculture to commercial agriculture, manufacturing and modern services. Structural transformation is a key driver for sustained growth, productive employment creation and poverty reduction. Economic and social policies have the potential to alter not just the pace of structural transformation, but also the greenness and inclusiveness of that transformation. The success of the Growth and Transformation Plan partly depends on how natural resources are managed, which requires integrated cross-sectoral solutions that promote sustainable economic, environmental and social development.

5.1 Synergies between inclusive green economy and structural transformation policies

Overall, the main inclusive green economy policy (the Climate-Resilient Green Economy Strategy) is coherent with and reinforces the country's structural transformation plan (the Growth and Transformation Plan). This has been achieved through policy integration during formulation. Integrated programme development has also been used to enhance coherence in that regard. The green economy vision, as articulated in the Climate-Resilient Green Economy Strategy, is not only con-

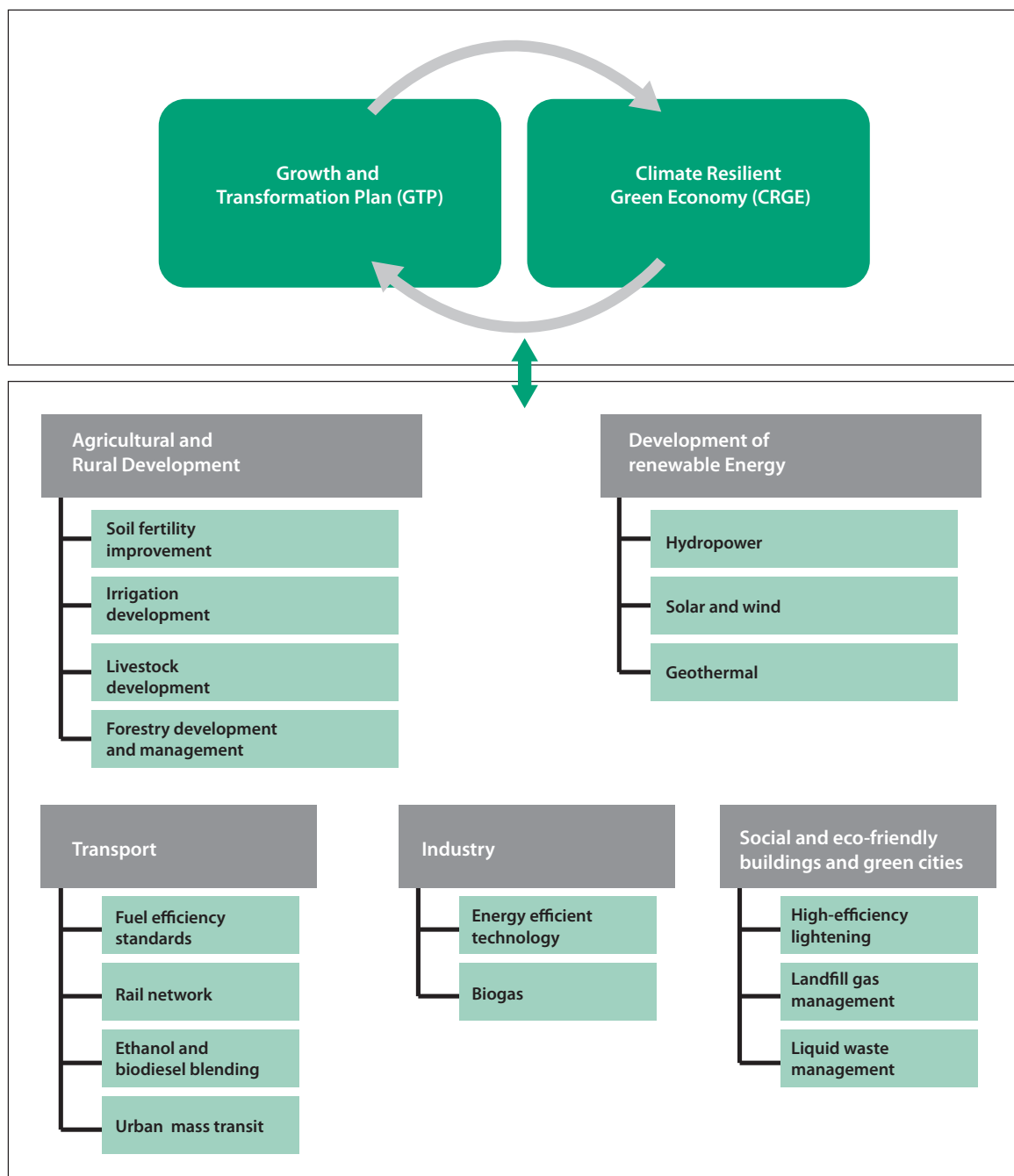
sistent with the Growth and Transformation Plan, but also reinforces the country's long-term economic vision as stated in that Plan.

"building an economy which has a modern and productive agricultural sector with enhanced technology and an industrial sector that plays a leading role in the economy, sustaining economic development and securing social justice and increasing per-capita income of the citizens so as to reach the level of those in middle-income countries" (Ministry of Finance and Economic Development, 2010:21).

5.1.1 Policy integration

There are at least two possible ways to integrate green economy targets into national transformation policies (Green Growth Best Practice Initiative (GGBPI), 2013; OECD, 2012; Energy Sector Management Assistance Programme, 2009). The first approach involves mainstreaming a green economy strategy into national transformation plans and strategies. The second approach relates to preparing a stand-alone strategy for a green economy, which focuses on key technologies and investments and develops a time-bound plan with associated targets. The Ethiopian experience illustrates a combination of the two approaches: the stand-alone Climate-Resilient Green Economy Strategy was prepared and then integrated into the existing Growth and Transformation Plan and institutions so that they work together and rein-

Figure 16: Integration between Growth and Transformation Plan and the Climate-Resilient Green Economy Strategy at the policy development stage



Source: Constructed based on FDRE data (2011).

force each other. The development of the Strategy was informed by the country's medium-term growth and transformation plan (see figure 16). The Strategy in turn needs to be aligned with domestic priorities as reflected in the Growth and Transformation Plan, since national priorities determine whether it is feasible to target all major sectors or just specific areas of interest. Next,

sectoral strategies have been adjusted accordingly to make them compatible with the goals and objectives of the Strategy. In particular, sector-specific strategies related to agriculture, forestry, water, transport, manufacturing, and energy were shaped by the Climate-Resilient Green Economy Strategy to support the transition to a green economy. For example, some agricultural

and rural development green initiatives such as soil fertility improvement, irrigation development, livestock development and forestry development and management have been integrated into the Growth and Transformation Plan. Similarly, programmes in the transport sector include railway network improvements, and ethanol and biodiesel blending, which are intended to reduce carbon emissions. Among the eight priority large- and medium-sized manufacturing subsectors identified in the Growth and Transformation Plan, the cement industry has been the main target in the Climate-Resilient Green Economy Strategy due to its high emission intensity. Green interventions in the industrial sector include biogas and fuel efficient technology development. Such policy integration helps to maximize synergies between environmental, social, and economic development outcomes and manage the costs, trade-offs, and uncertainties, thereby contributing to the country's structural transformation agenda.

At the national level, a broad range of sector-specific green activities have been launched and integrated into the Growth and Transformation Plan, consistent with the objectives of achieving a sustainable economic, environmental and social transformation in the long-term. Table 15 shows inclusive green economy indicators on the one hand and Growth and Transformation Plan-based and projected targets for these indicators on the other. For example, it appears that the Climate-Resilient Green Economy Strategy indicators for agricultural and rural development are also Growth and Transformation Plan indicators, implying coherence between the two approaches. Some of the indicators were originally selected under the Strategy and then mainstreamed into the Growth and Transformation Plan as part of policy integration. Ethanol and diesel blending and biomass stoves are examples of such integration.

A key feature of Ethiopia's green economy effort is combining a long-term target to reflect the general vision, with short- and medium-term targets to guide concrete actions. The Growth and

Transformation Plan identifies objectives, targets and implementation strategies that need to be pursued to build a climate-resilient green economy.¹⁷ Although individual targets have been established for different aspects of both the Strategy and the Plan, many of these metrics are not independent. For instance, green interventions in the forestry (e.g. afforestation and forest management) and livestock (e.g. mechanization) sectors also influence the development of the agricultural and industrial sectors. Pressure from agriculture on forests can be minimized through agricultural intensification on existing land or unlocking degraded land through investment in irrigation. This indicates many inclusive green economy interventions are mainstreamed into the structural transformation plan, thus strengthening the greenness of the transformation process.

Clear and consistent quantitative targets and indicators make it easier to identify and assess trade-offs and synergies among economic, environmental and social dimensions. This involves alignment of the Climate-Resilient Green Economy Strategy indicators and targets with those of the Growth and Transformation Plan. However, there is some disconnect between the Strategy and the Plan in terms of targets. While the Strategy targets are expressed in terms of emissions reductions in carbon dioxide equivalent (CO₂e) (see table 11), the Plan targets are expressed in different ways and do not include emissions reductions. This suggests a need to harmonize targets and indicators to effectively monitor the actual contribution of the Strategy towards the realization of the Plan. The overarching Strategy targets are expressed in terms of emissions reductions to measure and track the progress of the green economy strategy, but clear monitoring and evaluation mechanisms are lacking. This highlights an area where a lack of institutional capacity and data are likely limiting the ability to establish adequate measurement and feedback mechanisms.

¹⁷ Additional efforts are also being made to further integrate the Climate-Resilient Green Economy initiatives into the second generation of the Growth and Transformation Plan, with clear green economy targets and indicators.

Table 14: Inclusive green economy indicators compared to those of the Growth and Transformation Plan

Inclusive green economy indicators	Growth and Transformation Plan Baseline 2009/10	Growth and Transformation Plan targets (2014/15)
Agriculture and rural development		
Supply of improved seeds (mnqt)		3.6
Use of bio-fertilizers (organic fertilizer)		na
Areas under Vertisol development (mn ha)		3
Acidic land treated with lime (ha)		37850
Area of land rehabilitated (mn ha)	3.208	10.21
Land developed under community based watershed development programme (mn ha)	3.772	7.78
Total area of land subjected to soil fertility research (mn ha)	0.89	2.82
Total area of land covered with forest and forest master plan (mn ha)	0.70	2.20
Area of land covered with multi-purpose trees (mn ha)	6.06	16.21
Forest coverage (mn ha)	13.0	18.23
Increase multipurpose trees (ha)		10154
Natural resources conservation activities in pastoral areas (ha)		350,000
Area covered by major food crops (mn ha)		12.2
Cereal productivity (qt/ha)		22
Improved cattle feed production (qt)	50000	145,000
Improved cattle breeds (%)	10.37	37
Production and distribution of improved livestock gene (mn dose)		2
Proportion of livestock vaccinated (%)		65
Proportion of women and youth benefited from agricultural extension services (%)		40
Number of households participating in safety net programmes (mn)	7.1	1.3
Male/female headed farmers certified with first level land owner ship certification (in million)	8.02	Not indicated
Male headed/female headed farmers certified with second level land owner ship certification (in million)	0.99	3.69
Industry		
Upgrade priority manufacturing sectors in terms of technological capacity and industrial structure		na
Energy efficiency		na
Environmental performance/compliance		na
Development of SMEs		na
Foster diversification of strategic manufacturing sectors		na
Construction and Urban Development		
Jobs created to reduce urban unemployment rate in towns under integrated housing development (000)	176	182

Inclusive green economy indicators	Growth and Trans- formation Plan Baseline 2009/10	Growth and Trans- formation Plan targets (2014/15)
Job created through SMEs (mln)		3.0
Provision of housing and basic services (number of housing units)	213,000	370,000
Reduction of slum areas (%)	60	30
Road constructed with cobblestone (km)		3738
Development of solid waste landfills sites (no)		
Water		
Overall potable water coverage (%)	68.5	98.5
Urban population with access to potable water within 0.5km (%)	91.5	100
Rural population with access to potable water within 1.5km (%)	65.8	98
Land developed for medium & large-scale irrigation schemes (%)	2.5	15.6
Land developed under small-scale irrigation (mn ha)	0.853	1850
Energy		
Renewable energy generation (hydropower) (MW)	2,000	10,000
Total length of rehabilitated distribution lines (km)	450	8,130
Length of distribution lines construction (Km)	126,038	258,038
Reduce power wastage (%)	11.5	5.6
Number of consumers with access to electricity ('000')		4000
Coverage of electricity services (%)	41	75
Ethanol production (mn litres)*		6.54
Blended ethanol (mn litres)*		8.63
Biomass stove ('000')*		2004
Solar energy ('000')*		120.7
Waste gas management		na
Access to roads and railway		
Proportion of areas more than 2 km from all-weather roads (%)		61
Proportion of kebeles connected by all-weather roads (%)		100
Road density(km/1000km)		123
Railway network (km)		2395
Telecommunications coverage		
Fixed telephone density (per 100)		3.4
Mobile service subscribers (in million)		3.05
Internet service subscribers(in millions)		3.69

*The figures refer to 2012/13; 'na'-not available

Source: Ministry of Finance and Economic Development (2010, 2014).

5.1.2 Coherence and synergies at the implementation stage

Coherence in the implementation of the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan is summarized in table 16, which highlights ‘win-win’ situations between the two. Many of the benefits of green economy policies can occur in the short and medium term if appropriate policies and strategies are put in place and aligned with domestic priorities to achieve green transformation, since national priorities determine the drive towards green transformation.

Implementation of sector-specific green economy interventions related to land management, biodiversity, renewable energy (e.g. hydroelectric dams, solar, wind, and geothermal power), soil and water conservation, forest management, railway development, and urban renewal have been key to support the transition towards an inclusive green economy. An inclusive green economy pathway could generate a transformational shift of the economy in terms of changes in the sectoral composition of national economy, living standards of the society, and of quality of the environment. For instance, it appears that successful execution of green economy initiatives would lead to transformation of the economy where the share of natural-resource dependent sectors such as agriculture in national output would decline from 45.5 per cent in 2010 to 27 per cent by 2030 (Federal Democratic Republic of Ethiopia, 2011). Similarly, the share of industry would increase to 34 per cent.

5.1.3 Agriculture and rural development

Efforts have been made to transform the large subsistence and smallholder agriculture towards increased productivity and growth trajectory in Ethiopia. In this respect, two flagship programmes can demonstrate how climate-resilient green economy activities have been linked to the

structural transformation plan: the Sustainable Land Management Programme and the Productive Safety Net Programme. Both programmes were prepared and are being executed by the Ministry of Agriculture to achieve the objectives of the Climate-Resilient Green Economy and the Growth and Transformation Plan, with Ministry of Finance and Economic Development mobilizing and coordinating the financial aspect of the programmes. The first Sustainable Land Management Programme (2008-2013) focused on sustainable land management practices and covered 45 districts, also called *woredas*, in six regions: Tigray, Amhara, Oromia, the Southern Nations, Nationalities and Peoples’ Region, Gambella, and Benishangul-Gumuz. Based on good practices of the first phase, the second phase of the Sustainable Land Management Programme (2014-2019) integrates key climate-related issues (see table 16). It covers six regions and 135 *woredas* (90 new and 45 existing) (Ministry of Agriculture, 2013). Similar to the first Sustainable Land Management Programme, the second phase consists of four interrelated components: integrated watershed and landscape management; institutional strengthening, capacity development and knowledge management; rural land administration, certification and land use; and project management.

On social protection, the Productive Safety Net Programme is a national social safety net programme that responds to chronic food insecurity and short-term shocks and integrates climate-resilient green economy initiatives into existing institutional set-ups. The Government of Ethiopia, together with donors, established the Productive Safety Net Programme in 2005. It is a multi-year programme, focusing on households that are both chronically food insecure and poor in drought prone areas of Ethiopia (see box 2). It focuses on landscape restoration and infrastructural development in rural areas. As one of the components of the food security programme, the Programme provides support to households in the form of direct cash and food transfers to food insecure households. It provides two types of social

protection: social assistance and social insurance. While social assistance involves unconditional transfers (e.g. cash, and food for the elderly and persons with disabilities), social insurance is often tied to the labour market. It involves participation of households in public work projects such as environmental rehabilitation, water control, and road construction and maintenance. This entails benefits in either cash, in-kind or both in return for their labour contribution.

Social protection supplements economic growth by shielding people from income swings, sustaining investment in human capital, and compensating those who are placed at a disadvantage due to economic, social and environmental distress, thereby increasing the resilience of households (Coudouel and others, 2002). Natural resource management, such as soil and water conservation, works through mobilization of community participation and is a key feature of Ethiopia's climate-resilient green economy implementation. For instance, environmental conservation through community participation was undertaken in 13.7 million ha of land in the country in 2012/13 (Ministry of Finance and Economic Development, 2014). This participation was on a voluntary basis, indicating society's growing awareness of the risks of climate change. Together, these two green flagship programmes not only reinforce the structural transformation efforts of the country, but also make the transformation process both inclusive and green (Fikreyesus and others, 2014).

5.1.3.1 Energy and transport

The transportation sector is also expected to experience energy demand changes, especially mass transport in urban areas such as railways, which heavily depend on electricity, generated from renewable sources (e.g. hydropower). National railway projects covering close to 5,000 km are currently being implemented and are expected to be completed by the end of the second generation Growth and Transformation Plan. Other projects under implementation include the light railway and rapid bus transit systems, which

would replace the large number of diesel buses in Addis Ababa. Given that the transport system being established will be powered by renewable energy, it will reduce the dependence on fossil energy, increase savings from reduced expenditure on fossil energy, and reduce congestion, thereby improving environmental quality (Omilola, 2014).

There will be a major shift from fossil to renewable sources in the energy sector, as a large share of energy is expected to be generated from hydropower, wind, and geothermal energy. For example, several renewable energy projects are being implemented in the country, including ten hydropower projects (with a total capacity of close to 5,500 MW) to be completed by 2015, seven wind power projects (with a total of 764 MW) and six geothermal projects (with a total of 450 MW) to be completed by 2018 (Eshetu and others, 2014). Furthermore, the national Scaling-up Renewable Energy Programme is expected to lead to a change in the energy mix of households, as a large share of households, especially in rural areas will benefit from renewable energy and energy-efficient cooking/baking stoves. In particular, the latter will help rural households save up to 10 per cent of their income, thereby increasing domestic savings, and thus resulting in improved domestic finance for investment (Ministry of Water and Energy, 2012). The industrial sector will also experience a change in energy mix, as an increasing number of local manufacturing industries will use renewable energy sources.

Wood is the most important energy source for household cooking, particularly in rural areas where alternative fuel sources are either unavailable or unaffordable. In Ethiopia, over 90 per cent of households are estimated to cook with biomass, which has resulted in significant environmental degradation such as depletion of forests and related consequences (Beyene and others, 2013). In rural areas, cooking is done using open fires, which are inefficient and hazardous for health. Ethiopia's energy mix strategy focuses on the development of alternative energy from

Table 15: Climate-resilient green economy interventions that reinforce the Growth and Transformation Plan objectives ('win-win' interventions)

Inclusive green economy-related activities	Growth and Transformation Plan pillars positively influenced by inclusive green economy interventions	Sectoral impacts	Remark
<p>Adoption of agricultural and land-use efficiency measures:</p> <ul style="list-style-type: none"> • Encourage yield enhancing techniques (e.g. improved seeds); • Introduce improved residue management practices; • Mechanization; • Expand irrigation, especially in degraded areas (small and large scale agriculture); • Introduce and promote organic fertilizers; 	<p>Sustaining rapid and equitable economic growth;</p> <p>Maintaining agriculture as major source of economic growth;</p> <p>Creating conditions for industry to play key role in the economy;</p> <p>Promoting gender and youth empowerment and equity</p>	<p>Increase agricultural productivity;</p> <p>Improve industrial performance (e.g. of food processing industries) through stable domestic input supply and establishment of new industries;</p> <p>Other cross-cutting benefits: employment, women and youth empowerment;</p>	Enhanced inter-sectoral linkages through input and output markets;
<p>Protect and re-establish forests</p> <ul style="list-style-type: none"> • Afforestation, reforestation, improve forest management; • Promote area closure in degraded areas. • Dissemination and usage of fuel-efficient stoves, especially in rural areas; • Provide alternative-fuel cooking and baking techniques (e.g. electric, LPG, or biogas stoves mainly in rural areas); 	<p>Maintaining agriculture as major source of economic growth;</p> <p>Sustaining rapid and equitable economic growth; and</p> <p>Promote gender and youth empowerment and equity</p>	<p>Improve agricultural productivity;</p> <p>Enhance the tourism sector;</p> <p>Improve industrial performance (e.g. wood-based industries) through increased and stable supply of raw materials;</p> <p>Other cross-cutting benefits: employment, women and youth empowerment, improved health, especially in rural areas;</p>	Improved balance of payments through reduced imports of wood and wood products, as well as fossil fuel imports;
<p>Electricity generation from renewable energy sources</p> <p>Expand and exploit hydropower, geothermal, solar and wind power</p> <p>Energy saving technology (e.g. electric stoves);</p>	<p>Sustaining rapid and equitable economic growth;</p> <p>Maintaining agriculture as major source of economic growth;</p> <p>Creating conditions for the industry to play key role in the economy;</p> <p>Promote gender and youth empowerment and equity</p>	<p>The transport sector, especially electric railway;</p> <p>The forest sector;</p> <p>Enhance industrialization through dependable renewable energy supply;</p> <p>Other services sector (e.g. maintenance services);</p> <p>Other cross-cutting benefits: employment, women and youth empowerment, improved health, especially in rural areas;</p>	

Inclusive green economy-related activities	Growth and Transformation Plan pillars positively influenced by inclusive green economy interventions	Sectoral impacts	Remark
National Flagship Programmes			
<p>Sustainable Land Management Programme (e.g. REDD+ , Climate Smart Agriculture, and Great Green Wall Initiative for the Sahara and the Sahel</p> <p>mulching,</p> <p>intercropping,</p> <p>conservation agriculture,</p> <p>zero-tillage,</p> <p>crop rotation,</p> <p>cover cropping,</p> <p>integrated crop-livestock management,</p> <p>agroforestry and reforestation,</p> <p>water management, and</p> <p>skills and training</p>	<p>Sustaining rapid and equitable economic growth;</p> <p>Maintaining agriculture as major source of economic growth;</p> <p>Promote gender and youth empowerment and equity;</p> <p>Enhancing expansion and quality of infrastructure development;</p> <p>Enhancing expansion and quality of social development;</p>	<p>Increase agricultural productivity;</p> <p>Livestock sector;</p> <p>Improved road development;</p> <p>The forest sector;</p> <p>Improved water management and utilization;</p> <p>Enhanced input supply to the industrial sector;</p> <p>Other cross-cutting benefits: employment, women and youth empowerment, improved farmers' resilience to climate change, improved skill acquisition and human capital formation (e.g. improved access to education); better environment;</p>	
<p>Productive Safety Net Programme including Household Asset Building Programme</p> <p>Public works (e.g. soil and water conservation)</p> <p>Food and cash transfers to most climate-vulnerable community members</p> <p>Risk financing facility</p>	<p>Sustaining rapid and equitable economic growth;</p> <p>Maintaining agriculture as major source of economic growth;</p> <p>Promote gender and youth empowerment and equity;</p> <p>Enhancing expansion and quality of infrastructure development;</p> <p>Enhancing expansion and quality of social development;</p>	<p>Increase agricultural productivity;</p> <p>Other cross-cutting benefits: employment, women and youth empowerment, improved farmers' resilience to climate change, improved skill acquisition and human capital formation (e.g. improved access to education); better environment; improved household resilience</p>	

Inclusive green economy-related activities	Growth and Transformation Plan pillars positively influenced by inclusive green economy interventions	Sectoral impacts	Remark
Scaling-up Renewable Energy Programme (e.g. National Biogas Programme and Community and the Community Managed Renewable Energy Programme for Rural Ethiopia) Promote the production of biogas and its use for cooking and lighting in rural and peri-urban areas; Promote the use of the slurry from the digesters as fertilizer in horticulture; Improve access to solar energy services; Promote fuel- saving and fuel-efficient stoves	Sustaining rapid and equitable economic growth; Promote gender and youth empowerment and equity; Enhancing expansion and quality of social development; and Creating conditions for industry to play key role in the economy;	Increase agricultural productivity; The service sector (e.g. improved access to electricity helps to stimulate businesses); The forest sector (e.g. reduces fuel wood consumption); Other cross-cutting benefits: employment, women and youth empowerment, improved skill acquisition and human capital formation (e.g. improved access to education); better environment; improved health, especially in rural areas;	

Source: Ministry of Agriculture (2013); Ministry of Finance and Economic Development (2014); OECD (2013).

renewable sources such as wind, geothermal, solar and biomass power and on energy efficiency measures. Fuel-efficient cooking stoves, and the development of renewable energy programmes are worthy of mention. The Government of Ethiopia is promoting fuel-efficient biomass cook stoves, such as *mirtinjer a* cookstoves and *Lakech* stoves, as a key part of its effort to reduce emissions from deforestation and forest degradation and beyond (REDD+), and promote environmental and health agendas. Accordingly, the Government has planned to distribute 9.4 million stoves across the country by 2015. Studies (Gebreegziabher and others, 2014; Beyene and Koch, 2013) indicated that fuel-efficient stoves have three-fold benefits, namely saving carbon, reducing the workload of women, and improving air quality. Fuel-efficient cooking stoves reduce fuel-wood consumption substantially compared to traditional cooking stoves.

Furthermore, the Ministry of Water, Irrigation and Energy has been promoting solar panels in rural households and institutions like rural telecommunications stations, health centres, and health posts (Mohamed, 2014). Rural households and service centres are now beneficiaries of solar energy technology, which provides power for lighting, mobile phones, computers and solar fridges. The target of the solar energy expansion programme is to install solar panels in 30,000 households by the end of the Growth and Transformation Plan period.

Ethiopia's ambition is to become a powerhouse for regional green transformation, particularly in East Africa. The hydropower sub-sector is responsible for the vast majority of the multiple-fold growth of Ethiopia's energy generating capacity. The country is aggressively developing hydropower plants

Box 2: Productive Safety Net Programme and the environment

The Ethiopian government launched a Productive Safety Net Programme for vulnerable and poor households in drought-prone areas of Ethiopia in 2005. Based on previous experience of implementation of such programmes, the Government enhanced its efforts to address both relief and development between 2010 and 2014, with harmonized donor support (Environmental Science to Services Partnership (ESSP), 2014). A recent assessment by Hoddinott and Seyoum (2014) indicates that food security has improved in areas covered by that Programme. In addition, households supported by the Programme have shown improvements in durable assets, livestock, health, and investment in schooling. In particular, girls' schooling attainment has increased substantially. The Programme has also contributed to creating a local enabling environment for community development through investment in infrastructure and natural capital. Environmental conservation activities have been key in relevant public works, which include terracing, digging and maintaining irrigation canals, tree planting, establishing enclosures for pasture, and constructing soil bands. These green activities helped reverse environmental degradation in several ways, including through the creation of new surface water supplies (for drinking and irrigation), flood prevention, and the recharging of groundwater supplies.

Impact assessment studies (e.g. Hoddinott and Seyoum, 2014; ESSP, 2014) indicate that Programme beneficiaries have shown increased use of chemical fertilizers compared with non-beneficiaries. Overall, the Programme has been instrumental in improving household livelihoods, human capital and environmental assets. However, the net impact on greenhouse gas emissions depends on the relative magnitudes of greenhouse gas emission reduction due to green activities and of the rise in greenhouse emissions from increased livestock holding and chemical fertilizer use.

under the Growth and Transformation Plan¹⁸ not only to fulfil the domestic needs but also to export electricity to surrounding countries. Exports of renewable energy to neighbouring countries such as Djibouti and Sudan have already started.¹⁹ Electric power transmission lines are also being extended to Kenya. The transmission line between Ethiopia and Sudan is part of the East African Power Pool, which envisages interconnection projects between: Ethiopia and Kenya; United Republic of Tanzania, Zambia, Kenya and Uganda; and Ethiopia, Sudan and Egypt (Africa Review, 2014). In addition, Ethiopia plans to establish grid links to Rwanda, South Sudan, Uganda, United Republic of Tanzania and even to Yemen across the Red Sea, thereby making Ethiopia the

energy superpower in East Africa. Since energy is the major input for industries, the future of East Africa's industrialization is on the green trajectory, with limited greenhouse gas emissions from renewable and new energy sources.²⁰

Ethiopia could influence the transition to a green economy in Africa through its advocacy for investment in green industries on the continent. The country shares the view that for Africa to benefit from the transition to a green economy, countries should be guided by national objectives, as well as social, economic and environmental development imperatives. The establishment of appropriate institutional frameworks is essential in that regard.

¹⁸ Even before the Growth and Transformation Plan, the Government of Ethiopia built three major hydropower plants: the Tekeze, Gilgel Gibe II and Tana Belese plants.

¹⁹ Ethiopia has earned close to US\$ 33 million during the past nine months. Currently, Ethiopia provides 100 megawatts electricity to Sudan and up to 50 megawatts to Djibouti.

²⁰ The Government signed a contract to build the largest geothermal power station in Ethiopia with Reykjavik Geothermal, a European company from Iceland. Under the agreement, Reykjavik Geothermal is to build the plant in two different stages, with each part providing 500 MW, meaning an overall planned capacity of 1,000 MW (Mohamed, 2014).

5.1.3.2 Integrated Housing and Infrastructure Development Programme and green jobs

The Government of Ethiopia has been taking major steps to generate green jobs in both rural and urban areas. The Integrated Housing Development Programme and the Infrastructural Development Programme provide good examples. While the latter focuses on landscape restoration and infrastructural development, for example through productive safety net programmes in rural areas, the focus of the former is on urban renewal (see box 3). Households are benefiting from the programmes through active participation in natural resources conservation and infrastructural development, especially rural roads. The Integrated Housing Development Programme, which has been implemented across urban centres in the country to upgrade slum urban areas, generates green jobs. Between 2010/11 and 2012/13, about 481,000 jobs were created through housing and related projects (Ministry of Finance and Economic Development, 2014). Although the Programme creates green job opportunities for both

skilled and unskilled labour, it is essential to assess whether or not these jobs are decent, and benefit the poor meaningfully.

The good practices and lessons learned during implementation of the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan are summarized in box 4.

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

While in general, the transition to a green economy reinforces structural transformation, it also involves trade-offs, at least in the short-term. Despite commendable efforts accorded to green economy as part of the transformation agenda, environmental and social inclusiveness components have remained a concern. It should be noted that Ethiopia's current comparative advantage lies in its favourable agroecological conditions. Given the scarcity of land, the sustainability of an

Box 3: Integrated Housing and Infrastructure Development Programme

The Government of Ethiopia has made efforts to address key urban challenges including inadequate infrastructure (for example cobblestone roads, poor drainage networks, and landfills), housing, and quality employment opportunities through the Integrated Housing and Infrastructure Development Programme of the Growth and Transformation Plan. Both the housing and infrastructural development programmes are meant to promote domestic saving, supply low cost and affordable houses, reduce urban slums, and improve the urban environment. Between 2010/11 and 2012/13, about 95,000 houses were under construction across the country. Of those, 24,068 houses were transferred to users, of which 26 per cent were women. In 2012/13, 111,993 jobs were created through the housing arm of the Programme. The innovative Programme is designed to provide low-cost and affordable housing while also generating employment and building human capital and entrepreneurship in the construction sector.

In addition, about 502,300 skilled and unskilled employment opportunities have been created through the federal road construction and maintenance projects, and the Universal Rural Road Access Programme in 2012/13. Massive employment opportunities have also been created in the railway sector, including in the Addis Ababa Light Rail Transit and Addis Ababa-Djibouti railway.

Source: Ministry of Finance and Economic Development (2014)

Box 4: Good practices in the coherent implementation of Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan

Although good practices in the coherent and synergistic implementation of the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan are yet to fully emerge, the design and implementation of the following inclusive green economy programmes merit attention: the Sustainable Land Management Programme, Productive Safety Net Programme, wind turbine and hydropower projects, the National Biogas Programme of Ethiopia, the National Clean Cook Stove Programme, and community forest and development efforts (OECD, 2013).

The National Biogas Programme of Ethiopia focuses on spreading renewable, clean, and safe energy (biogas) for cooking and lighting, as well as providing organic fertilizer in rural Ethiopia. The National Clean Cook Stove Programme has been introducing fuel-efficient stoves in rural areas, thereby reducing the demand for fuel wood. In addition to the development of hydro dams, wind turbines projects being implemented include those in Ashegoda and Adama, which are expected to generate a total of 171 MW electric energy. The community forest and development approach can be seen in the Humbo Community-based Natural Regeneration Project, which is anchored on sustainability and inclusiveness principles. This is not only Ethiopia's first carbon trading initiative, but the first in Africa to be registered under the Clean Development Mechanism (Fikreyesus and others, 2014).

The Sustainable Land Management Programme is being implemented to reverse land degradation and improve agricultural productivity in drought prone and food insecure areas. The Programme supports investments that reduce land degradation and increase land productivity of smallholders' farms. The Programme also integrates some aspects of climate change response such as the REDD+ Readiness process, which aims to strengthen national capacity and institutional frameworks to reduce greenhouse gas emissions from deforestation and forest degradation. It also includes techniques, such as intercropping, conservation, integrated crop-livestock management, agroforestry, improved grazing, and improved water management, that enhance the productivity of agricultural land and conservation of natural resources, thereby generating 'win-win' outcomes (Fikreyesus and others, 2014). An assessment of the first phase of the Sustainable Land Management Programme indicates that improvements have been observed in terms of natural resources conservation and household income. For example, the Programme has made remarkable progress in rehabilitating degraded areas targeted for intervention by adopting physical and biological measures (Ministry of Agriculture, 2013). By the end of 2012, close to 37,000 hectares of communal lands had been put under enclosures for natural regeneration. In addition, households have benefited from various income generating activities including beekeeping and honey production using modern beehives and livestock fattening. They have also benefitted from a supply of better breeds of small ruminants and poultry. Therefore, the implementation of the Sustainable Land Management Programme demonstrates the synergies between the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan.

Lessons learned from implementation:

Some of the useful lessons that can be drawn from the different levels of implementation of the Strategy and the Plan include:

- Long-term national goals need to be linked to local development initiatives;
- Piloting green initiatives allows for the identification of appropriate interventions and adjustments that may be needed before scaling up;
- Awareness creation and mass participation is a prerequisite for the success of inclusive green economy interventions;
- Local and national green economy programmes should be linked to regional and global initiatives;
- Strong institutional arrangements are necessary to lead, coordinate and effectively implement green economy initiatives; and
- Green economy strategies and programmes need to be effectively mainstreamed into national development and sectoral plans.

agriculture-led development strategy requires a more intensive use of available land. In this regard, the Government of Ethiopia has increasingly been promoting the use of chemical fertilizers. However, chemical fertilizers can be highly detrimental to water sources and generates high levels of greenhouse gases (Resnick and others, 2012). Studies, for example, by Stern in 2006, indicated that chemical fertilizers can adversely affect the environment. First, chemical fertilizers are the largest single source of greenhouse gas emissions from the agricultural sector, and nitrous oxide possesses a global warming potential that is 300 times greater than carbon dioxide. Second, fertilized land puts significant pressure on scarce water resources, as it requires more water. Third, high levels of chemical fertilizer use can increase toxins in groundwater, which is harmful for fishery stocks and human health (Tilman and others, 2002).

The application of modern inputs in the form of fertilizers and other chemicals in greater quantity can cause environmental hazards. Given that chemical fertilizers dramatically increase crop yields, and that a reduction in food production is not an option, it is not possible to abandon the use of chemical fertilizers, at least in the short-run.

The Government of Ethiopia is exploring other options such as greater use of organic fertilizers and conservation farming techniques that aim to conserve soil and water use by employing mulch and minimum tillage to minimize run-off and erosion.²¹ Another policy option, from a long-term perspective, is to promote research and development of alternative and less harmful fertilizers.

The economic imperative of attaining agricultural output and productivity growth, which enjoys paramount importance in the Growth and Transformation Plan, comes at a cost. Area expansion and land productivity growth contribute significantly to total crop output growth (see box 5). Nevertheless, expansion into marginal land and into the remaining forest and woody land areas could be a threat to the environment. Moreover, the direction towards the establishment of large-scale agricultural development zones could have undesirable environmental impacts if proper environmental and social impact assessments are not undertaken.

²¹ The Ethiopian Agricultural Transformation Agency is developing soil mapping for different agro-ecology areas, which will be used for developing location-specific fertilizers. Soil mapping will guide fertilizer application based on soil fertility and suitability for major crop types.

Box 5: Crop productivity, farm input and natural resource management

Negative environmental impacts could occur during the process of agricultural output and productivity growth, especially in settings where agricultural practices are traditional and subsistence-oriented. These costs are reflected in terms of clearing of forests for farming, expansion to marginal areas and intensive use of chemical fertilizers. Between 2003/4 and 2011/12, area expansion and land productivity growth contributed to 43 per cent and 56 per cent of total crop output growth, respectively (Ministry of Finance and Economic Development, 2014). Crop productivity increased by about 5.9 per cent between 2011/12 and 2012/13 due to an increased utilization of high yield variety inputs (for example, chemical fertilizers and improved seeds), and area expansion. Conversion of forests, woodland and shrub land into agricultural land is by far the largest driver of deforestation in Ethiopia, causing the emission of an estimated 40 Mt of CO₂ from deforestation in 2010 (Ministry of Agriculture and Environmental Protection Authority, 2013). While land under small-scale irrigation and the use of chemical fertilizer increased in 2012/13, use of organic fertilizer, which is essential for reducing greenhouse gas emissions, declined in 2012/13. Expansion into marginal land and to the remaining forest and woody land areas could be a threat to the environment. There is a need for more clarity on operational/implementation frameworks for climate proofing in sector plans and investments and the establishment of climate-resilient institutional and regulatory frameworks.

	2011/12	2012/13
Cultivated land ('000' ha)	13,690	13,940
Improved seeds ('000' qt)	1,033	2,041
Fertilized land ('000' ha)	6,804	7,445
Chemical fertilizers ('000' ha)	4,955	5,771
Organic fertilizer ('000' ha)	1,848	1,674
Land under small-scale irrigation ('000' ha)	1,460	1,830
Crop productivity (qt/ha)	17	18
Land rehabilitated ('000' ha)	5,394	10,027.4

Source: Ministry of Finance and Economic Development (2014); Central Statistics Agency (Agricultural Sample Surveys)

Agricultural mechanization and subsequent replacement of draught oxen with farm machines are other aspects of agricultural transformation strategy as indicated in the Growth and Transformation Plan. These farm machines consume fossil fuels and release emissions into the atmosphere. The large number of smallholder farmers in Ethiopia means that the quantity of emissions generated from the use of a large number of farm machines would be substantial. Of course, keeping large number of oxen for draught power for the

agricultural sector will also entail emissions. It is thus necessary to weigh the relative benefits and costs of each of these interventions.

In addition, the country possesses agroecological conditions suitable for growing biofuel crops such as sugar cane, jatropha, castor bean and palm oil. The Ethiopian government has allocated large tracts of land for the development of different bio-fuel crops (see box 6). While bio-fuels produce less carbon dioxide than traditional

Box 6: Biofuel development in Ethiopia

Biofuels are fuels obtained from ethanol, biodiesel, vegetable oil, and biogas. Biofuels are among the options considered as renewable and relatively cleaner substitutes to conventional energy sources. Biofuels have a lower environmental footprint than fossil fuels because their use releases less greenhouse gases into the atmosphere. Besides reducing greenhouse gas emissions, the biofuels industry offers the potential to create jobs for the rural poor and offers a diversified export base for the country.

The Government of Ethiopia has developed a biofuel strategy to encourage domestic biofuel production with the objective of reducing both dependence on high-cost fossil fuels and greenhouse gas emissions (Ministry of Mines and Energy, 2007). Ethiopia has an estimated potential area of about 25 million hectares of land suitable for production of biodiesel feedstock (Gebremeskel and Tesfaye, 2008). Between 2010/11 and 2012/13, the Government identified close to 16.6 million ha of land for biofuel development and 52.88 and 40.48 million litres of ethanol were produced and blended, respectively (Ministry of Finance and Economic Development, 2014). The content of ethanol blended in gasoline will increase to 15 per cent by 2015.

While the expansion of biofuels across the world has been well documented (Oxfam, 2008; Cotula and others, 2009; von Braun and Meinzen-Dick, 2009), the environmental impacts of biofuel investment initiatives have not been explored in developing countries. A recent study indicated that among the biofuel crops, sugarcane expansion will lead to a reduction in greenhouse gas emissions in Ethiopia due to increasing availability of ethanol supply (for blending) and livestock feedstock (Ferede and others, 2014).

fossil fuels, Fargione and others (2008) found that greenhouse gas reductions from using biofuel depend on land use change. Increased biofuels production could require conversion of natural lands with resulting carbon emissions, threats to biodiversity, and likely increased use of fertilizers and pesticides (Tilman and others, 2006; Fargione and others, 2008). Clearing new land for biofuels may generate large greenhouse gas emissions due to the burning and decomposition of organic matter. This relocation of land could bring about significant new volumes of carbon in the atmosphere under more intensive agricultural management on previously uncultivated lands. A recent study by Ferede and others (2014), based on a dynamic computable general equilibrium model, indicates that the effect of biofuel expansion on greenhouse gas emissions depends on the types of biofuel crops used. For example, there would be a decline in greenhouse gas emissions in the

industry and services sectors associated with sugarcane expansion. With improved production of sugarcane locally, ethanol availability would increase, which in turn would reduce dependence of industries and services on fossil fuels. Greenhouse gas emissions by livestock would also be reduced with sugarcane expansion as this would imply increased availability of livestock feed from by-products of the sugarcane industry, and livestock dependence on crops and forests would be minimized. Less consumption of fossil fuel by key economic sectors would lead to a reduction in greenhouse gas emissions due to the replacement of fossil fuels with biofuels. Ethanol blending in the transport sector is a case in point.

In the structural transformation process, agriculture becomes less important as other sectors that yield higher returns thrive. In a labour-abundant economy like Ethiopia, industrialization needs to

be based on labour-intensive industries for poor people to benefit from that transformation. This involves the use of clean technology and investment in innovation in the manufacturing sector. There is, however, a concern that green economy policies promote capital-intensive technologies and skill-intensive employment manufacturing industries (Dercon, 2012). This will not improve poor people's livelihoods because they will not absorb unskilled labour, especially from rural areas, thereby hampering structural transformation. Efforts to green production are likely to increase short-term production costs as new production

techniques are introduced. The increase in production costs could have an impact on the overall competitiveness of local manufacturing products in international and regional markets, at least in the short term. This could weaken the country's external trade position, especially exports, and exacerbate the trade deficit. Table 17 summarizes potential trade-offs between inclusive green economy and structural transformation strategies. However, in the long run, the country will be competitive in regional and global markets by supplying low-carbon goods and services (e.g. manufactured goods, power).

Table 16: Trade-offs between inclusive green economy and structural transformation policy instruments

Sector	Current structural transformation strategy, Growth and Transformation Plan	Green economy strategy, Climate-Resilient Green Economy Strategy	Short-term costs	Potential losers (short term)
Crop	Agricultural intensification based on massive diffusion of modern inputs, largely chemical fertilizers	Shift to conservation farming, organic fertilizers, intercropping, and development of less harmful fertilizers	Falling crop production	Private sector suppliers of chemical fertilizer
			Less employment	Poor smallholders who cannot adapt
				Local fertilizer industries
	Agricultural extensification based on cultivation of feedstock crops for bio-fuels	Reduce land clearing by either shifting towards plantation-based production or promote smallholder agricultural intensification	Fewer rural employment opportunities	Poor rural households
	Increase of cultivated land	Create new agricultural land in degraded areas through small-, medium-, and large-scale irrigation if expansion of land is required	Large fixed costs;	Poor rural households

Sector	Current structural transformation strategy, Growth and Transformation Plan	Green economy strategy, Climate-Resilient Green Economy Strategy	Short-term costs	Potential losers (short term)
Livestock	Livestock fattening	Improve productivity of live-stock		
		Mechanization	Large fixed costs; fall in agricultural wage employment;	Unskilled workers; Poor rural households/ pastoralists
		Improve animal diets		
		Shift beef producers to poultry production or encourage consumers to eat less meat through moral persuasion or pricing signals	Less employment	Pastoral households
Industry	Encourage resource-intensive manufacturing industries	Shift to clean technology; technology screening;	Rising production costs;	Unskilled workers
	(e.g. Low technology processing industries such as textiles and leather.		Limited investment in the manufacturing sector; Limited employment;	

Source: Based on Ministry of Finance and Economic Development (2010).

6. Analysis of other enabling measures in place and needed to facilitate the transition to an inclusive green economy and contribute to structural transformation

In addition to the inclusive green economy strategy, there are other enabling measures at national and international levels that facilitate the transition to achieve structural transformation goals. These enabling measures reinforce processes already set in motion. The national level enabling measures take precedence over those at the international level. This is because the former has more influence on access to, or the readiness to use the processes, compared with the international level enabling measures.

6.1 Enabling measures at the national level

In order to build an inclusive green economy, communities and stakeholders across the country need to take full ownership and responsibility for the attainment of economic, social and environmental sustainability. Pertinent to this is consensus building, cooperation and collaboration, a favourable macroeconomic environment and other policy frameworks, and organizational and human resource capacity. Science, technology and innovation and financial resources are equally important. The following sections provide a brief review of enabling measures that have facilitated the greening of Ethiopia's economy.

6.1.1 High-level commitment and leadership

Discussions with stakeholders consulted during the preparation of this report indicate that strong commitment and high-level political leadership during the development of the Climate-Resilient Green Economy Strategy, and subsequent formulation of regulatory frameworks were the key enablers that laid the foundation for building a green economy in Ethiopia. Strong commitment has been demonstrated through investments in agriculture and industrial sectors with greening at the core of activities (see chapter 2 of this report).

6.1.2 Appropriate policy and institutional frameworks and effective implementation mechanisms at national level

6.1.2.1 A favourable macroeconomic framework

Ethiopia's macroeconomic framework has been crucial in advancing inclusive green economy objectives in the country. As discussed elsewhere in this report, economic growth has been robust in the last decade and was pegged at more than 10 per cent. Inflation has shown a declining trend recently. Export diversification has eased the risk of reliance on few commodities. The Government's fiscal and monetary policies support green activities in agriculture, natural resources, energy, and

other infrastructure. Domestic revenue has shown an increasing trend although it has remained low as a share of GDP. These are favourable conditions for advancing inclusive green economy policies.

6.1.2.2 Supportive green economy-related policy instruments

A mix of policy instruments has also been important in the greening of Ethiopia's economy. These instruments include the following:

- (i) Economic instruments for incentivizing green or sustainable practices;
- (ii) Measures to enhance institutional capacity and regulatory capabilities;
- (iii) Green, information-based investment across key sectors;
- (iv) Voluntary measures and complementary social policies to drive inclusion;
- (v) Investment in infrastructure, in particular in the energy and transport sectors; and
- (vi) Regulations such as technical and performance standards, environmental regulations, and mandatory targets.

As an example, the Government of Ethiopia provides fiscal incentives in the form of duty free privileges for importing wood products, particularly raw wood and logs, in order to protect the forest sector in the country.²² While firewood consumption contributes to about 46 per cent of total greenhouse gas emissions, both formal and informal wood logging contributes to about 4 per cent. Allowing duty free importation of wood and related products into the country could benefit wood industries that use wood and wood products as key inputs for the manufacture of furniture. Although this would minimize deforestation due to reduced demand pressures from wood indus-

tries, the impact of duty free incentives on household firewood consumption is not immediately clear as the majority of firewood users are located in rural areas, with limited access to alternative sources of energy (see Chapter 2). Similarly, rural land registration and certification were launched in the early 2000s to increase security of tenure among farmers. Land tenure rights, especially in rural areas are meant to provide incentives for investment, remove uncertainty, and assure the holder that rights will not be arbitrarily taken away.²³ Studies indicate that Ethiopia's land certification encourages long-term investment in land, thereby improving land productivity (Deininger and others, 2009; Hagos and Holden, 2014).

However, policy instruments do not incorporate measures for investment in innovation, including research and development, instead measuring progress through targets and indicators and establishing institutional arrangements to monitor progress and coordinate follow up actions as required.

This clearly highlights potential gaps associated with institutional capacities.

6.1.2.3 Institutional architecture for an inclusive green economy and structural transformation

In the aftermath of the Copenhagen Climate Change Conference, the Environmental Protection Authority was designated to lead and oversee the development of the Climate-Resilient Green Economy Strategy, which has shaped Ethiopia's approach to climate change. In 2014, the Government moved the Environmental Protection Authority to the Ministry of Environmental Protection and Forestry, indicating its determination to consider climate change as one of the priority areas in dealing with the country's structural transformation needs. Together with

²² Unless exempted by law, items imported into Ethiopia are subject to a number of taxes. The Government levies five types of taxes on import items: customs duty, excise tax, VAT, surtax and withholding tax. The term customs duty denotes taxes imposed on goods entering or leaving the country. While the Ethiopian Revenue and Customs Authority is in charge of collecting customs duty from international trade, the Ministry of Finance and Economic Development designs and introduces taxes including foreign trade taxes. Although there are no taxes on exports, there is a 150 per cent export tax particularly on certain hides and skins of animals to encourage value addition.

²³ The land reform proclamation of 1975 nationalized all land, abolished landlordism, and tenancy and redistributed land to peasants in proportion to household size (Demeke and others, 2006). Since then all land is owned by the Government and individuals are given only use rights.

Ministry of Finance and Economic Development, which mobilizes and coordinates local and international funds, the new Ministry has enhanced powers to play a leading role in matters relating to climate-resilient green economy issues both nationally and internationally. Such marriage of institutional arrangement is helpful in terms of synchronizing activities across sectors and maintaining links with sources of financing for climate-resilient green economy programmes.

Ethiopian laws on environmental impact assessments²⁴ state that documents should be accessible to the public and that such perpetual act of disclosure serves as instrument of maintaining transparency and building trust and confidence, which are necessary ingredients of consensus building

Consensus building, cooperation and collaboration are facilitated through information sharing that engender understanding, ownership, conviction and collective action for the common good. However, discussions with stakeholders revealed that a low level of awareness, particularly at the grass-roots level, and an absence of regular and coordinated follow-up action have affected the implementation of inclusive green economy programmes. In this regard, it is important to map stakeholders and ensure their participation at every planning phase of project implementation in order to assess and factor in issues related to consensus building and cooperation (World Bank, 2011). Organizational capacity and human resource development are long-term processes with long-term returns and should be complemented with capacity retention for continuity and sustainability.

Table 17: Analysis of policy instruments used in promoting a green economy in Ethiopia

	Broad policy packages	Policy instruments	Examples of applications
1a	Incentives: Fiscal	Import duty exemptions	Imports of wood and logs; import of capital goods for investment, especially in priority areas.
		Tax holidays	Tax holidays for investment in priority areas such as manufacturing industries (e.g. textiles, leather, electronics, railway locomotives), agriculture (crop production and animal farming), and renewable energy (e.g. generation, transmission and distribution) (see Proclamation No. 768/2012)
1b	Incentives: Financial	Preferential access to credit	Investment in priority sectors, especially export-oriented manufacturing industries
		Preferential access to foreign exchange	
2	Internalizing (externalities)	Fines	Penalties on polluting factories (See Environmental Impact Assessment Proclamation No. 299/2002; Environmental Pollution Control Proclamation No. 300/2002; and Solid Waste Management Proclamation No. 513/2007);
		Prohibitions	License suspension or cancellation for polluting manufacturing industries

²⁴ Environmental impact assessment incorporates social and economics dimensions.

	Broad policy packages	Policy instruments	Examples of applications
3	Institutions	Regulations (e.g. standards, mandatory targets)	Environmental Standards and Industrial pollution control (see Proclamation No. 300/2002, and Prevention of Industrial Pollution Council of Ministers Regulation No.159/2008); Environmental and social compliance of the floriculture sector as stipulated in the Code of Practice of the Floriculture Sector Council of Ministers Regulation No.207/2011)
		Information disclosure	Information on pollution management (e.g. keeping records of equipment, inputs in use, products, and other environmental indicators)
		Governance (e.g. accountability, enforcement capabilities, anti-corruption)	
		Property right (e.g. IPR, land certification)	Land registration and certification
		Environmental impact assessment	Mine exploration that is subject to Federal Government Permit; Dam and reservoir construction (Dam height 15 meter or more, or Reservoir storage capacity 3 million m3 or more, or power generation capacity 10 MW or more); Irrigation development (Irrigated area of 3000 ha or more); Construction of roads (Design Standard DS1, DS2 and DS3) with a traffic flow of 1000 or more; Railway construction Fishing from lakes for commercial purposes; Horticulture and floriculture development for export; Manufacturing industries (e.g. textiles, leather, cement); Others (see Directive No. 2/ 2008).
		Disaster risk reduction, prevention and preparedness	Agriculture and pastoral

	Broad policy packages	Policy instruments	Examples of applications
4	Investment	Investment in natural capital	Soil and water conservation, investment in protected areas, and rehabilitation
		Investment in human capital	Capacity-building, skill formation, and awareness creation.
		Investment in infrastructure	Energy, transport, water, and waste management
5	Social inclusion	Insurance	Health care
		Direct cash transfer	Productive Safety Net Programme for the elderly and persons with disabilities
		Support for price increase	Subsidized distribution of commodities in urban areas
		Labour market policies: skills (re-) training, job search assistance	Expansion of technical and vocational education and training centres; recruitment of university graduates through small and micro enterprises;

6.1.2.4 Science and technological advancement

Technological advancement and innovation are important aspects of structural transformation and diversification as they facilitate a shift from an agriculture-based economy towards manufacturing and modern services sectors. The manner in which the pool of scientific and traditional knowledge and practices are employed in a given country can constitute an inclusive green economy enabler. Knowledge of science to understand and interpret observed changes, scientific approaches in addressing problems, and explorative, discovery-oriented and inventive approaches are characteristics to be fostered for promoting an inclusive green economy. Scientific knowledge and approaches provide an enabling environment for research and development.

The Government has introduced a new rule for public university entrants to address the skill needs of the economy: 70 per cent of all new entrants to public universities will be allocated to engineering and natural science programmes, while 30 per cent will be placed in social science and business programmes. The number of graduates from engineering and science spheres has increased since the adoption of the 70:30 rule.

This will go a long way in developing technological capability in the country. However, the overall approach to science and technology needs to be supported by availing practical technical facilities to design, construct, and test new ideas and initiatives on the ground.

In order to support the transfer and diffusion of clean technology, Ethiopia has established a new Climate Innovation Centre with support from the World Bank. The Centre is expected to support pioneering clean technology enterprises that address climate change while creating jobs and improving livelihoods, thereby contributing to the country's effort to build an inclusive green economy. In this regard, the Centre provides financial support and mentoring and advisory services to the growing number of local clean-technology entrepreneurs working in agribusiness, energy efficiency, renewable energy and biofuels.

Given that green economy sectors will require new skills, there is a need for renewed efforts to invest and attract trained personnel in these areas. In this regard, active involvement of academia, business partners Government and NGOs is necessary (African Development Bank – OECD, 2013).

Wide-scale acquisition of hands-on based technical skills (skill to imitate, reverse engineer, maintain and invent) should focus on capacity development to cope with the technological needs of an inclusive green economy and to reduce dependence on outside support. Technological capability development requires fast learning and the leapfrogging of existing technology. In light of this, Ethiopia in 2010 adopted a science, technology and innovation policy to support technology adoption (e.g. leveraging technology transfer through public procurement, foreign direct investment inflows, and intellectual property protection). Implementation of the policy framework is overseen by the Science, Technology and Innovation Council, which is headed by the Prime Minister. The Council evaluates annual progress in the area of technology and innovation and provides awards and recognition certificates. The science, technology and innovation policy considers universities, government research institutes, and industries as major actors in the national innovation system. Mapping of green technologies at the national level is required to support the development and diffusion of existing green technologies.

6.1.2.5 Access to financial support

Credit infrastructure for the creation of broad-based credit facilities, and easing credit access for those who genuinely require credit is of paramount importance in supporting green initiatives. In this regard, budget allocation and policy design have been closely linked in order to provide the necessary resources, incentives, and enabling conditions to achieve the targets set out in the Climate-Resilient Green Economy Strategy. Additionally, Ethiopia has designed an innovative national funding mechanism, the Climate-Resilient Green Economy Facility, within the Ministry of Finance and Economic Development, to support the implementation of green initiatives in the country. The Facility is intended not only to make the administration of climate-resilient green economy-related funds easier, but also to help coordinate donor funds,

international climate funds within the framework of the United Nations Framework Convention on Climate Change, local and international bonds for renewable energy (dams), and other domestic funds (Eshetu and others, 2014). Given that many sectors are involved in green activities, inter-ministerial collaboration between Ministry of Finance and Economic Development and the Ministry of Environmental Protection and Forestry in managing the Facility is an important institutional arrangement that helps maintain close links between the implementation and financing of green programmes. The housing of the Facility within the Ministry of Finance and Economic Development also creates an opportunity to integrate both the green programmes and climate-resilient green economy-related finance into the national development plan of the country. Discussions between relevant actors and the Facility also indicate that the second generation Growth and Transformation Plan envisages full integration of both climate-resilient green economy activities and finance, and this will help monitor and evaluate performance across sectors.

Ethiopia has gathered invaluable experience in microfinance services. This needs to be further developed to enhance financial inclusion and meet the financing requirements for building an inclusive green economy. However, the issue of financial inclusion and mechanisms of addressing it have not been covered in the Climate-Resilient Green Economy Strategy.²⁵ Given that technology and innovation are key instruments in triggering green transformation, a special financing mechanism is required to support technology development and innovation.

With regard to access to international financing opportunities, Ethiopia has started interacting with the World Bank, United Kingdom Depart-

²⁵ Although the Climate-Resilient Green Economy Facility under the Ministry of Finance and Economic Development provides financial support for green projects, especially those projects from line ministries, inadequate funding has remained a problem in financing green projects (Eshetu and others, 2014).

ment for International Development, Climate and Development Knowledge Network and with UNDP at high levels of the Government to identify the country's needs, priorities and progress made on climate financing. While this is quite encouraging, it is important to carry out similar consultations with lower government structures, and at the grass-roots level to enable them to understand the costs and benefits of their actions or inaction, and available opportunities. This will create awareness of inclusive green economy issues, engender buy-in and meaningful involvement and ensure the effective implementation of inclusive green economy policies.

6.2 Institutional and strategic frameworks for sustainable transformation and development at the regional and subregional levels

Outcomes and decisions reached at the regional level in preparation for, and as follow up to Rio+20 provide an enabling environment to promote the adoption and implementation of inclusive green economy policies in Africa.

During the Africa Regional Implementation Meeting for the Post-Rio+20 follow-up processes held in 2012, African countries committed to putting in place an enabling environment that would strengthen partnerships with civil society, the private sector and other stakeholders, and enable business and industry to ensure that green growth contributes to the overarching goal of poverty eradication. They also called upon the international community "to mobilize additional financial resources to support African countries that so decide to develop and implement inclusive green economy strategies and plans." In addition, African countries called on ECA, the African Union Commission, the African Development Bank, UNEP, UNDP and other regional partners to support Africa's sustainable development efforts, including through supporting the development

of inclusive green economy policies and strategies in the context of sustainable development and poverty eradication.

The African Union Assembly, at its Nineteenth Ordinary Session, adopted a decision on Rio+20, which calls for the development of a roadmap for the effective implementation of the outcomes in the region. In response to this decision, the Fourteenth Regular Session of African Ministerial Conference on the Environment adopted a decision to develop and implement Regional Flagship Programmes. The Fifth Special Session of the African Ministerial Conference on the Environment launched the African Green Economy Partnership, as part of the five Regional Flagship Programmes to be developed for the implementation of Rio+20 outcomes in the Region, and with the purpose of providing a more coordinated support for green economy activities in the region.

Moreover, Africa countries have also adopted Agenda 2063, which provides a strategic framework for the pursuit of structural transformation that promotes inclusiveness and the sustainable management of natural resources. The main elements of Agenda 2063 are:

- (i) Promoting science, technology and innovation in the areas of education, health, biosciences, agriculture, and clean energy;
- (ii) Investing in human capital;
- (iii) Managing natural resource endowment;
- (iv) Pursuing climate-conscious development requires pursuing a green path to industrialization based on low energy intensity, low carbon, and clean technology;
- (v) Good governance that ensures participatory and accountable governance institutions; and
- (vi) Harnessing regional integration to enhance development cooperation, and to ensure peace and security.

Agenda 2063 is based on existing strategic frameworks, including the Abuja Treaty, the Plan of Action for Accelerated Industrial Development in Africa (AIDA), and Africa's (Accelerated) Agribusiness and Agro-Industries Development Initiative (3ADI). It provides favourable conditions for advancing inclusive green economy and structural transformation in the region.

6.3 Enabling measures at the international level

Existence of regional and subregional institutional and strategic frameworks for sustainable development, regional sustainable development indicator frameworks, regional and subregional review mechanisms on progress towards sustainable development, international conventions and protocols on global issues and awareness of global conventions and opportunities, as well as access to global funds and technology will facilitate the transition to an inclusive green economy that fosters structural transformation.

6.3.1 Existence and adoption of international agreements and conventions at the global level

Among the international enabling measures are the conventions and protocols that embody the aspirations of the global village. They serve as guides and in some cases mandatory requirements for actions affecting current and future well-being. Ethiopia has signed a number of international conventions and protocols on environment, social and economic development matters. Being a party to a convention requires States to meet their obligations and, as necessary and applicable, support other parties through international cooperation to do the same. Ethiopia, like most developing countries, requires capacity strengthening in all areas to effectively implement its obligations under various Conventions. The list of existing conventions and protocols, which

Ethiopia has signed, can inform the selection of instruments that are relevant to building a green economy in Ethiopia.

The United Nations Conference on Sustainable Development, referred to as Rio+20, which was held in 2012, undertook to secure renewed political commitment to sustainable development, assess the progress and implementation gaps, and address new and emerging challenges. The conference agreed:

- (i) That a green economy in the context of sustainable development and poverty eradication is one of the important tools available for achieving sustainable development, and that there is a need for specific actions to support countries in developing and implementing green economy policies;
- (ii) To develop sustainable development goals to be integrated into the post-2015 development agenda;
- (iii) To establish an intergovernmental process under the auspices of the United Nations General Assembly to propose options on an effective sustainable development financing strategy;
- (iv) To establish a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies;
- (v) To launch a programme of work on broader measures of progress to complement the GDP measure;
- (vi) To adopt the global 10-year framework of programmes on sustainable consumption and production; and
- (vii) To make voluntary commitments to implement concrete policies, plans, programmes, projects and actions to promote sustainable development and eradicate poverty.

The implementation of these measures will go a long way in facilitating the building of green economies and achieving sustainable development.

6.3.2 Communication and awareness of the public on processes, conventions and opportunities related to an inclusive green economy at the international level

Citizens' access to information on inclusive green economy processes and opportunities at the international level will inspire them and enable them to be part of, and benefit from such processes and opportunities. An environmental education programme for the public is necessary to enhance citizens' awareness on the environmental and climate issues, and the associated global conventions and provisions. Access to environmental information as a right of citizens and trans-

parent and timely disclosure by public authorities enhances participation in the environmental protection effort. With environmental information at hand and with the inalienable right to participate, citizens can make informed decisions on environmentally sensitive issues and they can legally and administratively react to violations (GGBPI, 2014). The same works for social conventions. This is an important enabling measure for long-term effects on the green and inclusiveness aspects of inclusive green economy policies and strategies. Consultations with selected public and private stakeholders suggest that there is lot to be done in this respect to enhance the awareness of global processes and local responsibilities.

7. Existing analytical tools for integrated assessment of inclusive green economy policies and strategies

Development activities could generate unintended repercussions for the economy, society and environment, which were not the target of policies, plans, or programmes. Private or public undertakings in economic and social sectors have to be vetted for their desirable and undesirable impacts. This is necessary for the development and implementation of mechanisms that offset undesirable and unintended impacts. This requires analytical frameworks, including tools and methodologies that allow for integrated assessments of the economic, social and environmental aspects inclusive green economy. Table 18 provides a summary of selected integrated assessment tools and their applications in Ethiopia.

7.1 Analytical tools for environment and social assessment

The two most used environmental and social assessment tools to guide national decision-making in Ethiopia are the environmental impact assessment and the integrated environmental and social assessment tools.

7.1.1 Environmental Impact Assessment

This obtained a legal foundation with the Environmental Impact Assessment Proclamation No. 299/2002. The proclamation stipulates that without authorization from the Environmental Protection Authority or from the relevant regional en-

vironmental agency, no person may commence implementation of any project that requires environmental impact assessment. The environmental impact assessment process allows project developers to have sufficient information regarding environmental impact so that they can make sound development choices. However, the Environmental Protection Authority (now a Ministry) no longer retains power to exercise this mandate at the inception of investment projects. Investment Proclamation No. 280/2002 and, after its repeal, Investment Proclamation No. 769/2012, do not require environmental impact assessment reports or environmental clearance certificates to review applications for investment permits or for renewals. Investment Proclamation No. 769/2012 alludes to environmental impact assessments as the obligation of investors to observe the environmental protection laws of the country in which they plan to carry out investment activities. As in the previous proclamation, it does not make environmental impact assessments a requirement for an investment permit. Discussions with stakeholders showed that investors who need loans from banks, such as the Development Bank of Ethiopia, are required to present an environmental impact assessment study. However, the Development Bank of Ethiopia does not require a social impact assessment study when assessing projects for consideration of loans.

Furthermore, since May 2010, conducting environmental impact assessments has been delegated to six government Ministries (Addis Fortune, 2010). This seems to have continued even after the Environmental Protection Authority was

upgraded to the Ministry of Environmental Protection and Forestry with higher capacity and responsibility.²⁶ The delegation of authority to bodies that have interests in realizing their own projects and who may succumb to self-excuse creates a legitimate concern about the reliability of an environmental impact assessment performed by such bodies. However, many public institutions lack the required resources, including human and other resources and skills to evaluate and assess the environmental and social impacts of investment projects or programmes. Thus, the environmental impact assessment process in Ethiopia is constrained by weak enforcement capacity emanating from lack of trained human resources and an absence of scientifically founded standards to measure compliance. Stakeholders consulted during the preparation of this report indicated the absence of procedures to address non-compliance, appeals and grievances are among the weaknesses. For these and many other reasons, effective implementation of environmental impact assessment has remained limited. The weaknesses are reported in various contexts, including the assessment of floriculture industry (Getu, 2013).²⁷

7.1.2 Integrated Environmental and Social Assessment

This is often applied to both private and government projects. The Ministry of Finance and Economic Development has guidelines to appraise development projects; the criteria to evaluate projects include:

- Policy alignment: whether or not the proposed project is in line with the Government's priority activities; reference has often

been made to the Government's development strategies;

- Economic viability: this indicator provides information about the proposed project in terms of its contribution to the economy; whether or not it is economically feasible to implement the project (e.g. economic rate of return; cost-benefit analysis); and
- Environmental and social impacts: whether or not the intended project has adverse environmental and social consequences, and whether mechanisms are put in place to address both environmental and social issues.

Apart from the abovementioned tools, it appears that the application of analytical tools, such as the Strategic Environmental Assessment and the Poverty and Social Impact Assessment, has remained limited. These analytical tools are mainly used by international organizations such as the World Bank and African Development Bank for assessing environmental and social impacts of inclusive green economy policies and strategies.

7.1.3 Strategic Environmental Assessment

This can be considered as a second generation environmental impact assessment and is one of the main tools available to achieve environmental sustainability by integrating the principles of sustainable development into country policies and programmes (OECD, 2006; DEAT and Council for Scientific and Industrial Research, 2000). It is a proactive instrument for addressing environmental consequences before practical action is taken. The World Bank often uses this method in its lending operations to member countries. By so doing, it aims to include economic, environmental, and social objectives in policies, plans and programmes, and includes the identification of macro-level development outcomes (Fischer, 2002). It considers a broad range of alternative scenarios, and focuses on policy, plan and programme implications for future lower-level de-

²⁶ The Ministry of Agriculture requires environmental impact assessment reports after implementation of projects has been started. This is a kind of ex post environmental impact assessment of agriculture-related projects.

²⁷ Malefia (2009) indicates that the Ethiopian floriculture sector features some aspects that do not go follow an inclusive green economy development path, such as unregulated and high consumption of pesticide, fungicides, insecticides, and of chemical fertilizers as well as unsafe waste disposal and unsafe working conditions.

cisions. According to UNEP (2002), a strategic environmental assessment involves a systematic analysis of the environmental effects of development policies, plans, programmes and other proposed strategic actions. Unlike the environmental impact assessment, it extends the aims and principles of that tool beyond the project level and creates a framework against which impacts and benefits can be measured.

7.1.4 Poverty and Social Impact Assessment

This helps to analyze the link between policy reforms and their distributional impacts. It helps to identify alternative reforms to address the issues of concern, considers trade-offs among reforms on the basis of their distributional impacts, enhances the positive impacts of reforms and minimizes their adverse impacts, and helps to design mitigating measures and risk management systems (OECD, 2006). It also assesses policy reforms and implementation risks. In particular, it examines the distributional impact of policy reforms on the well-being or welfare of different stakeholder groups, and has an important role in the elaboration and implementation of poverty reduction strategies in developing countries. It has evolved out of awareness of the need to have better understanding of the implications of the policies recommended by and the conditions required by the International Monetary Fund and World Bank in their lending programmes (see www.worldbank.org/psia). The tool focuses on economic, social, political and institutional analysis, thereby providing useful information for inclusive policymaking.

7.2 Integrated development planning and policy analysis models

An integrated assessment involves consideration of the full range of impacts, both direct and indirect, that policy reforms may have on the en-

vironment, the economy and society. Integrated development planning and policy analysis models serve this purpose. A mix of models can be applied, depending on the type of policy being analysed and the impacts being measured (Abaiza, 2003). Model choice depends on, among others, technical capacity, availability of model types, adaptability to country circumstances, and data availability (GGBP, 2013). In settings with limited capacity and inadequate data, simple tools can be employed.

Available and commonly used modelling tools in Ethiopia include simple projections based on emission factors; sector-specific models and macroeconomic models based on key macroeconomic variables, such as GDP; and population projections. In light of this, a cost-benefit analysis of different green policy options and a simple Excel-based analysis have been employed in Ethiopia to assess sector specific benefits. However, application of other modelling tools, such as system-wide and general equilibrium models has not been commonly used in key public institutions due to lack of capacity and skills. The application of these modelling techniques are common in research institutes and academia, where there is better capacity in terms of executing these models for different green policy interventions (Ferede and others, 2013).

7.2.1 System-wide modelling tools

These are dynamic simulation tools used for long-term development policy analysis and planning purposes. The Threshold 21 (T21) is an example of such a model. It was developed by the Millennium Institute for an integrated assessment of economic, environment and social dimensions, thereby providing foresight about potential impacts of development programmes and policies across sectors. This model not only captures the interactions of economic, environmental, and social attributes of sustainable development into a single framework, but also generates scenarios for

long-term analysis. Another feature of the model is that it integrates the analysis of the risks and impacts of climate change across sectors, and allows quantification of adaptation costs.²⁸

7.2.2 Computable general equilibrium model

This is also another economy-wide model, which can be used to integrate economic, environment and social factors in the analysis, and help to simulate both the static and dynamic effects of inclusive green economy policies and strategies. Unlike T21, computable general equilibrium models are based on a consistent benchmark database for calibration. This model requires a social accounting matrix or an extended social accounting matrix that includes environmental indicators, and presents socioeconomic and environmental information in a consistent and coherent way for a given period. Construction of an extended social accounting matrix requires detailed socioeconomic and environmental data, which is lacking in many developing countries, including Ethiopia.

7.2.3 Sector or partial equilibrium models

These models can also be used to quantify the effects of inclusive green economy policy changes on a sector or ecosystem, while ignoring the effects on other sectors, on the assumption that the sector being examined is too small to have any significant impact on the rest of the econo-

my. Since these models focus on individual markets or sectors, this makes their predictions easy to verify. In addition, data constraints are also less significant at this level of analysis. However, given that everything depends on everything else, the results of a partial equilibrium analysis may be of limited use. For instance, sector-based or partial equilibrium models do not take into account the full range of policy effects, resulting in over- or under-estimation of policy changes.

7.3 Methodologies for governance analysis

Although there are different tools for governance analysis, such as the System of Environmental and Economic Accounting, life cycle analysis, and sustainable development indicators, these are rarely used in key public institutions in Ethiopia as part of assessing economic, environmental and social aspects of inclusive green economy policies and strategies. Nevertheless, the development of key sustainable development indicators and application of the system of environmental and economic accounting are of paramount importance for tracking progress towards an inclusive green economy.

7.3.1 System of Environmental-Economic Accounting

The System applies the accounting concepts, structures and rules of the System of National Accounts and allows the organization of environmental and economic information that covers the stocks and flows that are relevant to the analysis of environmental and economic resources. Natural resource accounts and environmental indicators are widely recognized as providing a framework for the information and analysis needed to support macroeconomic policy analysis for sustainable economic development. The System is a multipurpose conceptual framework that describes the interactions

²⁸ Some African countries (e.g. Ghana, Kenya, Malawi, and Mozambique) have already developed the T21 model to guide their long-term visions and medium-term development plans. In 2014, the Ministry of Finance and Economic Development of Ethiopia, in collaboration with the Millennium Institute, provided sensitization workshop and training on the T21 model. Subsequently, a group of experts drawn from Ministry of Finance and Economic Development and the National Planning Commission attended a month-long training on T21 model in Norway in 2014. As of writing this report, the development of the T21 model is in progress, with experts from the National Planning Commission are actively involved in the development of the model. However, it is not clear whether or not the National Planning Commission is using this model in designing the second-generation Growth and Transformation Plan, in assessing policies and strategies.

between the economy and the environment, and the stocks and changes in stocks of environmental assets. As additional accounts in the System of National Accounts, the System of Environmental-Economic Accounting helps to adjust the existing System of National Accounts by including the following accounts: physical data relating to flows of materials and energy (e.g. emissions); environment-related transactions (e.g. expenditures made by government, businesses, and households to protect the environment); and environmental assets expressed in both physical and monetary terms (e.g. timber stocks and changes over a fiscal year) (United Nations and others, 2003). Hence, the System of Environmental-Economic Accounting adjusts the System of National Accounts by taking into account the interaction of the economy and environment. It does so by explicitly including depletion, defensive expenditures and degradation in the existing System of National Accounts. It enables the development of aggregates, indicators and trends across a broad spectrum of environmental and economic issues such as the assessment of trends in the use and availability of natural resources, the extent of emissions and discharges into the environment resulting from economic activity, and the amount of economic activity undertaken for environmental purposes (UNSTATS, 2012). It should be noted that the System of Environmental-Economic Accounting is the basis for statistical standards for collecting and integrating economic and environmental data for analysis of the green economy and sustainability (UNEP, 2012).

7.3.2 Sustainable development indicators

ECA has identified a list of sustainable development themes and indicators (ECA, 2015b). The framework contains fourteen priority themes, namely governance, poverty, demographic change, state of the economy, sustainable consumption and production, social equity and op-

portunities, education, health, agriculture and food security and nutrition, the natural resources base, energy, climate change and natural disasters, and financing sustainable development. Corresponding to the priority themes, ECA has also identified 43 core indicators and 23 other indicators. These indicators help to track the progress towards an inclusive green economy. The large number of indicators suggests that the data requirements are huge, and some indicators may demand new surveys. However, the sustainable development indicator set has been reviewed regularly since its adoption in 2011. Since the indicator set embodies the three dimensions of sustainable development, and governance aspects, it could form the basis for developing an inclusive green economy indicator set for Africa.

7.4 Conclusion

Overall, inadequate resources and expertise in key government institutions to conduct integrated assessments has remained a challenge. Green economy initiatives and strategies impact social groups differently and can generate both direct and indirect effects. Current efforts are limited to assessing the direct environmental and social impacts of projects, but the indirect impacts of projects have not been assessed. Lack of application of integrated assessment tools in Ethiopia indicates a huge capacity gap in public institutions, suggesting a need for a comprehensive capacity development programme. Consultations with selected stakeholders indicate that although environmental and social impact assessment tools have been used, especially in donor-financed projects, these tools have not been systematically integrated into the overall assessment framework. For example, establishing monitoring and evaluation indicators requires an institutional framework and the technical capacity to manage the monitoring and evaluation programme and collect the information required to analyse results and provide policy recommendations.

International organizations can play an important role in supporting capacity development efforts through country projects and the provision of technical assistance and support. Efforts by both national Governments and international organi-

zations need to focus on identifying the capacity-building needs at each stage of the assessment process, and designing long-term strategies to build competence in the use of integrated assessment tools.

Table 18: Summary of tools used for integrated assessment of inclusive green economy policies

Tools	Applicability	Examples
Environmental and Social Assessment tools		
Environmental Impact Assessment	Commonly used by government institutions to appraise the environmental impacts of investment/development projects.	For example, the Project Planning Directorate of Ministry of Finance and Economic Development uses this tool to evaluate different public investment projects.
Strategic Environmental Assessment	Mainly used by international institutions such as the World Bank; it is rarely used by government institutions.	Road Sector Development Programme 1997-2007 financed by the World Bank.
Environmental and Social Assessment;	International institutions such as the World Bank and African Development Bank; often used by government or private institutions for investment projects;	Ethiopian Railway Project (Credit Succi, 2014); In particular, the environmental and social impacts of the Awash-Weldia railway project has been assessed.
Poverty and Social Impact Analysis (World Bank)	This is often used by international institutions such as the World Bank and International Monetary Fund to assess economic reforms.	Recent application to the Promoting Basic Services Programme by the World Bank (e.g. Khan (2014); International Monetary Fund on VAT (e.g. Muñoz and Cho, 2003);
Integrated Environmental and Social Impact Assessment	Commonly used by government institutions to appraise large projects; Private investment projects are also subject to this tool;	Irrigation and Drainage Schemes at Megech Pump and Ribb and Anger Dam (Ministry of Water Resources) GIBE III Hydroelectric power project (Project No.P-ET-FAB-005) Water Supply, Sanitation and Hygiene project financed by the World Bank
Modelling tools		
Threshold 21 model	This system-wide modelling tool is not even known by many government institutions in Ethiopia. Very recently, the National Planning Commission and the Ministry of Finance and Economic Development with support from the Millennium Development Institute have started to develop a T21 model for Ethiopia.	

Tools	Applicability	Examples
Other economy-wide models (e.g. computable general equilibrium model)	Computable general equilibrium models are largely used by research institutes, such as the Ethiopian Development Research Institute, and academia to assess the direct and indirect effects of alternative green economy policies; these models are not used by government institutions as they require strong technical capacity and skills.	A computable general equilibrium analysis of biofuels, economic growth and the external sector in Ethiopia (Ferede and others, 2013) The distributive effect and food security implications of biofuels investment in Ethiopia: A computable general equilibrium analysis (Gebreegziabher and others, 2013)
Econometric tools	These are mainly used by research institutes and academia for evaluating alternative green economy policy interventions.	
Methodologies for governance analysis		
Sustainable development indicator framework	Not used in a systematic manner	
System of Environmental and Economic Accounting	The national income accounts of Ethiopia generate economic accounts only; Environmental accounts have not been included in the existing economic accounts	

Source: Compiled from consultations with selected stakeholders during the study.

8. Challenges and opportunities in adopting inclusive green economy policies that contribute to sustainable structural transformation

8.1 Challenges

The main challenges confronting Ethiopia in the development and implementation of inclusive green economy policies to reinforce structural transformation include the following:

8.1.1 Lack of coherent monitoring indicators

Indicators for both horizontal coherence and vertical consistency across sectoral inclusive green economy and Growth and Transformation Plan policies and strategies are important in tracking the synergies and trade-offs between an inclusive green economy and structural transformation in the country. However, there is a mismatch between the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan in terms of targets. For example, the Strategy targets are expressed in terms of emission reductions, while the targets in the Growth and Transformation Plan vary greatly. The Strategy also lacks indicators to be used across sectors for monitoring and evaluation. Together, these pose challenges in fostering the synergies between the Climate-Resilient Green Economy Strategy and structural transformation, suggesting that there is a need to harmonize targets and indicators to monitor the progress towards an inclusive green economy. This highlights an area where a lack of institutional capacity and data are likely limiting the ability to establish adequate measurement and feedback mechanisms.

8.1.2 Lack of timely and adequate data and information

Lack of adequate data and information for the development of indicators to monitor inclusive green economy policies at both the national and regional levels remains a challenge. In the absence of relevant inclusive green economy indicators and monitoring and evaluation mechanisms, it is difficult to track progress, thus hampering subsequent plan formulation and implementation. This can be considered as another capacity problem in data development and management. However, the current initiatives undertaken by the Ministry of Environmental Protection and Forestry and other Ministries in terms of developing their respective monitoring, reporting and verification systems with support from Climate-Resilient Green Economy Facility are expected to reduce the data and information problem both at macro and sectoral levels.

8.1.3 Inadequate funding and investment

Ethiopia has embarked on a plan of rapid growth with structural transformation, which requires huge resources. Ethiopia foresees an average expenditure of about US\$ 7.5 billion per year to implement its Climate-Resilient Green Economy Strategy. Recent studies have shown that there are finance challenges in implementing the Strategy (Eshetu and others, 2014).²⁹ The

²⁹ Between 2008/09 and 2011/12, Federal Government expenditure on climate-related activities has been low: at approximately US\$ 440 million per year, representing about 5.8 per cent of the required

savings-investment gap has shown a large resource deficit; the difference between domestic savings and domestic investment was about 15.3 per cent of GDP in 2012/13. As a result, the country has been heavily dependent on international assistance to support its fiscal and external positions. Ethiopia's overall revenue generation performance has remained low, though improving over time. In particular, tax revenue has remained low, and the pace of tax revenue growth has been only moderately elastic with respect to GDP (Derk and others, 2014). In addition, other sources of revenue have shown a declining trend as a share of GDP. Aid flows have declined as a share of GDP and are likely to remain low due to spending cuts by donors in the face of the severe budget deficits. Unlocking and attracting the foreign financing required to transition to an inclusive green development pathway are crucial.³⁰ However, consultations with stakeholders indicate that limited access to funds, the complexity of procedures, and delays in releasing funds have remained a challenge in implementing inclusive green economy policies and strategies. Donor-supported expenditure on climate change-related development activities accounted for only 20 per cent of total climate-related expenditure in 2011/12 (Eshetu and others, 2014). At the microenterprise level, financial inclusion has remained a concern in Ethiopia, as firms do not have access to adequate credit to support their business, which hinders efforts aimed at fostering an inclusive green economy and structural transformation.

budget (Eshetu and others, 2014). However, this expenditure does not include sub-national government expenditures on climate-related activities financed from extra budgetary sources.

³⁰ Close to US\$ 21 million has been allocated to fast-track investment for six priority sectors: agriculture (e.g. climate smart agriculture and landscape restoration), water, irrigation and energy (e.g., fuel testing, solar lighting, biogas and rainfall data), forests (e.g. bamboo production, wood fuel microenterprise, watershed rehabilitation, urban parks, and research), industry (e.g. greening industrial zones), transport (e.g. pedestrian infrastructure and off-street parking), and urban development (e.g. solid waste management and urban greenery) (Climate-Resilient Green Economy Facility Briefing, 2014). Piloting of systems is underway: US\$ 21 million has been allocated for disbursement through fast track investments across the economy.

Consultations with stakeholders indicate a lack of finance as one of the key constraints for implementing green projects. Although the bank branches to population ratio has shown improvement, it remains low: the population per commercial bank branch was 49,819 in 2012/13. Ethiopia has shown improvements in the World Bank's Ease of Doing Business rank, rising from 152 in 2012 to 104 in 2013 out of 185 countries. However, both access to and the cost of finance have remained critical problems for firms (see box 7). This is not only limited to inadequate availability of finance, but also the provision of services to the right activity in the right quantity and at the right time. This indicates that financial inclusion has remained a concern in Ethiopia, as reflected by credit-starved firms.

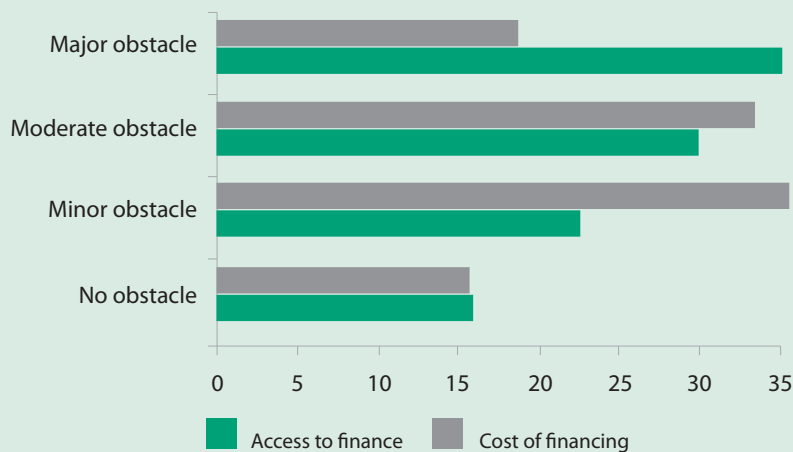
8.1.4 Lack of adequate capacity

Lack of adequate local capacity adversely affects the ability of green policies to achieve short-term development and longer-term green growth transformation goals. There is limited capacity for the use of analytical tools to assess the synergies and trade-offs of inclusive green economy policies, representing a challenge for informed decision-making in the country. Although the necessary institutions are in place and climate-resilient green economy units have been established in key government sectoral institutions, such as the Ministry of Transport, an inadequate number of human resources and a frequent turnover of technical staff have remained a daunting challenge for both the continuity of inclusive green economy policies and the subsequent development of inclusive green economy-related plans. Moreover, a lack of coordination and integration between sectoral ministries and overlapping powers and responsibilities among institutions pose other challenges for the effective implementation of the Climate-Resilient Green Economy Strategy.

Box 7: Access to and cost of finance

Despite the expansion of bank branches and proliferation of microfinance institutions in Ethiopia, firms face credit problems. A recent study (Ferede and Belew, 2014) on exporting firms in Addis Ababa, showed that both access to and the cost of finance are critical problems affecting export performance. More than 60 per cent of respondents reported that limited access to finance and the high cost of finance were moderate and major obstacles to running their businesses. Given their limited internal financial capacity, a working capital shortage is also a serious challenge for firms. Another recent study by Amha and others (2013) also indicated that a lack of finance or limited access to credit have been identified as one of the most binding constraints for the expansion and growth of processors and traders in Ethiopia.

Given the importance of technology development and innovation in green transformation, its financing requires special skills and a very different orientation from normal banking. This necessitates establishing technology and innovation “windows” in existing financial institutions.



Source: Ferede and Belew (2014).

8.1.5 Stability and predictability of policies and regulations

The country has experienced inflationary pressures since 2005/06, which caused appreciation of the real exchange rate and hampers competitiveness of export commodities (BKP, 2013). In addition, real interest rates have been generally negative, creating a challenge for domestic resource mobilization. Although inflation has fallen recently, there are signs of resurging price escalations in some commodities, threatening the stability of the mac-

roeconomy.³¹ A coherent and consistent macroeconomic environment is key for stimulating investment in green activities by building investors' confidence (The Global Commission on the Economy and Climate, 2014). In addition, frequent changes in government proclamations and regulations re-

³¹ For instance, following the Government's announcement of a general increase in the salary of civil servants in 2014, prices of goods and services have increased, questioning the stability of the macroeconomy. Although the pay rise is lower than expected, it may trigger inflation as suppliers of goods and services tend to revise their prices upwards in anticipation of the increase in disposable income of public workers (see www.allafrica.com/stories/201408060369.html). Following the pay rise of civil servants, price hikes have been observed in many commodities including edible oil, vegetables, beer, and bottled water.

Box 8: Changes in government rules and regulations

Stability and predictability of government policies and regulations can promote or retard green transformation. In particular, frequent changes in policy and regulations discourage businesses from undertaking profitable economic activities. Recent studies (Ferede and Belew, 2014; Amha and others, 2012) indicated that the lack of predictability of and frequent changes in policies and regulations are problems affecting businesses. For instance, close to 60 per cent of respondents reported that government regulations are unpredictable. Without predictable government policies and regulations, it is very difficult for firms to undertake investment activities and expand their businesses. A priority for the Government should therefore be to reduce instability through better economic management and governance.

Source: Ferede and Belew (2014).

sult in unproductive speculations and unpredictable behaviour of the private sector, both of which trigger instability of the economy (see box 8).³² According to the World Justice Project (Agrast, Botero and Ponce, 2010, 2011; Ponce, 2014), the state of rule of law in Ethiopia requires attention to make it satisfactory and to bring it up to a level that would create the right environment for an inclusive green economy and for structural transformation.

8.1.6 High population growth

Population pressure, especially in rural areas is a significant challenge as it puts pressure on natural resources. In particular, rapid growth of the labour force means that the need to generate more green jobs will be a challenge for the country. The economically active population increased from 32.4 million in 2005 to 44.4 million in 2013, representing an increase of 1.5 million persons per year. This rate of growth poses a challenge in terms of creating more productive employment opportunities in green activities.

³² For example, the Ministry of Mines officially banned the export of rough precious stones to encourage value addition in late 2012. However, around mid-2013, the Ministry retracted the decision and allowed the export of the raw precious stones (gemstones) (Ethiopian Inclusive Finance Training and Research Institute, 2014). Similarly, the Investment Proclamation No. 769/2012, which has been in place since 2012, is being revised.

8.1.7 Technological inadequacy

Accessing green technology presents another challenge for framing green economy policies as part of the overall transformation plan. There is a growing concern that green economy policies favour capital-intensive technologies and skill-intensive employment in selected sectors such as the manufacturing sector. This not only limits employment generation, but also stops sectoral labour mobility and promotes social exclusion, thereby retarding the pace of structural transformation.

8.1.8 Inadequate knowledge and awareness of the Climate-Resilient Green Economy Strategy

Although high-level government officials are aware of inclusive green economy/climate-resilient green economy, discussions with selected stakeholders demonstrate a seemingly inadequate awareness of the issues among middle and lower level government officials and at the regional government level. This is another important challenge that needs to be tackled given the critical role of middle and lower level government and grass-roots levels in the design and implementation, including the scaling up and out scaling of relevant programmes and activities.

8.2 Opportunities

Despite the number of challenges faced by the country in advancing inclusive green transformation, there are also quite a number of opportunities that can be capitalized on to develop and implement inclusive green economy policies to foster inclusive green transformation in Ethiopia.

8.2.1 Commitment and long-term vision

The development of the framework for a green economy in the country was overseen and supported by top government officials, led by the Office of the Prime Minister. This has helped to bring together not only the various government offices, but also selected non-State actors. In addition, driven by support from high-level political leadership, the inclusive green economy vision, goals and objectives have also been integrated into the country's transformation plan and sectoral strategies, which give additional impetus to ownership, implementation, and monitoring. This is an opportunity to push the inclusive green economy agenda forward with a view to attaining inclusive green structural transformation.

8.2.2 Agriculture and rural development

The Government of Ethiopia is strongly committed to pro-poor development policies, as laid out in its national development plan. In particular, agriculture is one of the main drivers of the economy with a huge potential, but at the same time, it is the least developed sector. This opens an opportunity to transform the old and traditional agricultural sector and to reduce poverty through improved and environmentally friendly and inclusive technologies.

8.2.3 Early stage of industrial development

Given the low levels of industrialization and infrastructure, Ethiopia is positioning itself to leapfrog environmentally detrimental processes and promote green investment in the manufacturing industries through deployment of clean and resource efficient technologies. This can be considered as the advantage of late industrialization in the era of climate change. The country can seize this opportunity by quickly designing the necessary incentives to encourage green industrialization.

8.2.4 Huge renewable energy potential

Ethiopia has a huge potential for renewable energy, especially hydropower, which has an exploitable potential of about 45,000 MW. Currently, massive investment endeavour is taking place in the development of hydropower and other renewable energy sources. The majority of Ethiopian households, especially in rural areas do not have access to modern energy, indicating an opportunity to expand renewable and affordable energy sources in rural areas. Studies indicate that the lowest income quintiles spend the most on energy in Africa, highlighting the opportunity to attract profitable ventures in the sector (Bacon and others, 2010). In addition, the improved availability of power and the lower cost of energy compared with other countries makes the country an attractive place for investment.³³

8.2.5 Low urbanization

Currently, only 18 per cent of the population of Ethiopia lives in cities and towns. However, with transformation, more people will move to cities

³³ Ethiopia supplies renewable energy at US\$0.05 per kilowatt hour, compared with \$0.24 cents in neighbouring Kenya (see <http://www.africacapitalmarketsnews.com/2420>).

and towns. This provides an opportunity for Ethiopia to craft a roadmap to invest in green urbanization, including energy-efficient buildings, mass transport, and green parks.

8.2.6 Trainable workforce, training opportunities and low labour cost

The rapidly growing young population can also be an opportunity for the country to attract and encourage labour-intensive green activities, especially in the manufacturing sector. The quality of human development is improving in Ethiopia owing to improved access to education and to health services. Ethiopia is experiencing rising skill intensity, especially in the skilled and semi-skilled labour force, due to expanding technical and vocational education and training and tertiary education across the country. There are ongoing long-term collaborative training programmes and other initiatives between some government institutions and local universities, which need to be strengthened and expanded. Examples include the graduate training programme in railway engineering at the Addis Ababa Science and Technology University, and other similar initiatives in sectors such as the leather industry.

Wages are also relatively lower compared to other neighbouring countries such as Kenya and Uganda; wages in Ethiopia are about 60 per cent lower than the regional average (Maasho, 2014). Given that wages are increasing in Asia and the so-called BRICS countries (Brazil, Russia, India, China and South Africa) owing to robust economic growth, this opens an opportunity for foreign investors in selected labour-intensive and green activities. There are ongoing examples of green activities already taking place in Ethiopia such as production of improved cooking stoves, land and soil conservation, integrated housing and urban development, afforestation, and land and environmental management practices.

8.2.7 Access to global finance and technology

Availability of assistance and access to environmental funds are opportunities for the country in building an inclusive green economy. Development assistance as a catalysing factor, or as a factor necessary for big push, or as a necessary factor for reaching the ladder of development has been upheld (Easterly and Pfutze, 2007; Sachs, 2005). A report by the African Development Bank and OECD (2013) identifies three ways in which countries can be supported in transitioning towards a green economy: development assistance, technology transfer, and research and development. If wisely and transparently used, Official Development Assistance (ODA) can play a substantive role in supporting a transition towards a green economy. Countries with low capacity in research and development can benefit from ODA targeting green economy best practices (GGBPI, 2014). Adoption and development of green technologies and the production of green technologies could be facilitated with international assistance.

The actual flow of funds and technologies to public bodies, communities and businesses has to be ensured for inclusive green economy policies and strategies to take root and be sustained. By maintaining the effective flow of funds and assistance, stakeholder confidence and actual participation can be enhanced. Ethiopia has to review its success in ensuring access to global funds and technology to the public, community and business stakeholders to further the implementation of inclusive green economy policies and strategies. Following the launching of the Climate-Resilient Green Economy Strategy and the subsequent establishment of the Climate-Resilient Green Economy Facility, reports indicate that Ethiopia has received external assistance, such as financial and technical assistance for promoting and implementing inclusive green economy policies and strategies.³⁴ For instance, Ethiopia received over

³⁴ For example, the Global Green Growth Institute, based in the Ethiopian Environmental Protection Authority, has been operating in

US\$ 3.5 billion from the ODA and other financial flows in 2011/12. Financial support from donors for climate-related activities include US\$ 393 million for ongoing projects, US\$ 19 million for pipeline (agreed but not commenced) projects and an additional US\$ 20 million pledged in forthcoming projects (Eshetu and others, 2014).³⁵ It appears that donor support for inclusive green economy-related activities could complement the government budget in terms of fostering the synergies between an inclusive green economy and structural transformation.³⁶ Funds For NGOs (2012) indicate that corporate social responsibility could be considered as a source of funding for inclusive green economy projects. Big businesses want to redeem their public relations profile by caring for the environment that has been affected by the uncontrolled profit-driven actions of

corporate agencies. Tax benefits are other incentives to encourage investments in social welfare and environmental projects.³⁷

UNDP facilitates and uses its position as a 'knowledge broker' to promote cooperation, enable exchange visits between China and Ethiopia, and support interventions targeted at capacity development collaboration (UNDP, 2014). The aim of such collaboration is to assess new technologies to enhance soil testing for dry lands management, introduce innovative agricultural technologies, including farmland management, introduce solar and wind energy-based solutions, test new information and communication technology tools for disaster assessment and prediction and foster technology transfer between the two countries.

Ethiopia and providing technical support to that body and other relevant institutions in Ethiopia.

³⁵ Following a series of conferences in Copenhagen in 2009, Cancun in 2010, and Durban 2011, it has been agreed that developed countries will provide climate finance to developing countries in the amount of US\$30 billion between 2010 and 2012 and US\$100 billion per annum by 2020 (Ministry of Environmental Protection and Forestry, 2014).

³⁶ Donors channel funds through the Climate-Resilient Green Economy Facility for pilot projects: Secured Grant un earmarked finance from the Department for International Development (US\$ 25 million); Secured earmarked finance from Austria (US\$800,000); Secured finance from Norway in the form of result based payment (US\$ 10 million); and others (Climate-Resilient Green Economy Facility Briefing, 2014).

³⁷ International corporations and their international grant support programmes, often channelled through NGOs, include: Cisco's Cash Grants, Social Investments and Support for Nonprofits; IBM's Smarter Cities Challenge; Intel Foundation's International Grants; Microsoft Grants, Donations and Training to NGOs; Nestlé's Creating Shared Value to address Social and Environmental Issues; Nike, Inc.'s Foundation focuses on improving the lives of Adolescent Girls; Swiss Re's Corporate Responsibility and Resource Award; Starbucks Coffee Company's Starbucks Foundation; Toyota Motor Corporation's Grants; and ViiV Healthcare's Positive Action Grants.

9. Conclusions and recommendations

9.1 Conclusions

Ethiopia has experienced solid progress in key economic, social and environmental indicators. Ethiopia's economic growth has been the result of an expansion of the services and agricultural sectors. The services sector has become a key driver of growth and accounts for a large share of GDP. Social indicators have also improved, as evidenced by achievements in enrolment at all levels, improved gender parity in education, falling maternal and infant mortality rate, and improving access to health services. On environmental performance, interventions by the Government and other stakeholders have helped reverse the degraded environment through terracing, digging and maintaining irrigation canals, tree planting, establishing enclosures for pasture, and constructing a soil band. As a result, forest and vegetation cover improved, the area of rehabilitated land increased, new surface water supplies (for drinking and irrigation) were created, flood prevention measures were taken, and groundwater supplies were recharged. In addition, slum areas were reduced and urban waste management improved.

Despite changes in the sectoral composition of the national economy in favour of the services sector, indicators suggest that there is a need to transform the economy to ensure that growth is sustained and inclusive. This could be attained through economic diversification that creates productive jobs with decent pay and working conditions, reduces poverty and inequality, and enhances access to basic services. Accordingly, the Government of Ethiopia has embarked on structural transformation agenda through its Growth and Transformation Plan. The Plan places emphasis on promoting the agricultural and manufacturing sectors. While maintaining the emphasis accorded to the agroprocessing and construction industries, the Plan also gives priority

to the chemical and metallurgical industries with the aim of enabling the industrial sector to play a leading role in the economy. It also recognizes the importance of environmental issues and of the conservation and management of natural resources for sustainable structural transformation.

The Government of Ethiopia recognizes the significance of both structural transformation and an inclusive green economy in achieving its long-term vision. In this regard, it has also embarked on building a green economy through the adoption of the Climate-Resilient Green Economy Strategy. This Strategy represents a critical juncture in the country's development trajectory, given the emphasis placed on achieving a transformation path that embodies the three dimensions of sustainable development: economic, environmental and social development. The Strategy serves as a comprehensive framework to help the country accelerate its transition, in a coordinated manner, towards a green, competitive and inclusive economy. The Strategy development processes and subsequent implementation have been driven by high-level government leadership, which together with the policy design process, has been instrumental in garnering support and buy-in from various stakeholders. The Strategy, which has already been integrated into the Growth and Transformation Plan, seeks to limit emissions, improve resource efficiency, increase productivity, and achieve the Millennium Development Goals, thereby lifting the country to climate-resilient middle-income status by 2025. A key feature of Ethiopia's inclusive green economy effort is combining a long-term target to reflect the general vision, with short-and medium-term transformation targets to guide concrete actions and reforms to live up to the visions of a green economy.

Alignment of the Strategy targets and indicators with those of the Growth and Transformation Plan is important to enable the identification and assessment of synergies and trade-offs among the economic, environmental and social dimensions. For example, despite the fact that there are social elements in the Strategy, this has not been clearly spelled out in terms of targets and indicators. In addition, clear monitoring and evaluation mechanisms are lacking in the Strategy. This highlights an area where a lack of data is likely limiting the ability to establish adequate measurement and feedback mechanisms. Without monitoring and evaluation systems in place, it would be difficult to conduct credible analysis to build a strong case for promoting an inclusive green economy and communicate the results to the wider public.

Despite some progress in mainstreaming the inclusive green economy policies and strategies of selected sectors into the Growth and Transformation Plan, integrating inclusive green economy indicators into the existing System of National Accounts is yet to be realized. The focus of policy design towards an inclusive green economy means that there is a need to go beyond the conventional measurement of economic performance by expanding economic development indicators to account for environmental goods and services and value natural capital. Currently, the national accounts do not factor in environmental services and costs, thus resulting in an under- or overestimation of overall economic, environmental and social progress. This necessitates the establishment of effective mechanisms to measure inclusive green economy policies in order to integrate them into the national accounts so as to better inform economic and environmental management decisions.

Besides inclusive green economy strategies, policies and instruments and institutional frameworks, there are other enabling measures both at national and international levels that can reinforce processes already set in motion towards an inclusive green economy. These include high-level

commitment and leadership, appropriate policy frameworks and effective implementation mechanisms at the national level, emerging institutional and strategic frameworks for sustainable transformation and development at the regional and subregional levels; and international agreements and conventions at the global level..

Integrated assessment tools and methodologies relevant to an inclusive green economy in Ethiopia include environmental impact assessment and the integrated environmental and social assessment. However, their practical application has been hampered by weak enforcement capacity arising from inadequate human resource capacity. Similarly, the use of quantitative modelling tools such as econometrics, and partial and general equilibrium models are limited in key public institutions due to capacity constraints. Current efforts are limited to direct environmental and social impacts of projects, but the indirect impacts of projects are yet to be fully assessed.

Although inclusive green economy policies and strategies have the potential to reinforce structural transformation, there are significant challenges confronting the country in promoting and building an inclusive green economy. These include inadequate financing, limited capacity, lack of coherent monitoring indicators and lack of timely and adequate data and information. These limit the country's capability to harness the current economic momentum and comparative advantage to build an inclusive green economy that supports structural transformation. Despite the challenges in advancing an inclusive green transformation in the country, there are quite a number of positive factors that could be harnessed to foster this form of transformation. They include strong commitment at the highest level of leadership, low level of industrialization, low urbanization, huge renewable energy potential, low labour costs, and international cooperation and support.

9.2 Recommendations

In light of the findings of the report, the following general and specific recommendations are made for the further development and implementation of inclusive green economy strategies that are coherent with and reinforce structural transformation in Ethiopia. The specific recommendations focus on policy coherence and the regulatory environment; inclusive green economy incentive systems; metrics for measuring and monitoring inclusive green economy progress; capacity development; financing; and coordination, networking and information sharing.

9.2.1 General

In order to ensure that the Climate-Resilient Green Economy Strategy further accelerates the pace, and influences the character, of structural transformation, there is a need to conduct a thorough integrated assessment of the range of economic, environmental and social benefits and costs of an inclusive green economy development pathway.

From an inclusive green economy perspective, there is a need to continuously assess and track performance towards realizing an inclusive green economy; and indicators relevant to green industries and jobs should be reported on as part of the country's statistics. Efforts to regularly monitor progress in the implementation of the Climate-Resilient Green Economy Strategy and the Growth and Transformation Plan in a coordinated manner should be mainstreamed into the country's monitoring and evaluation system to maximize their positive synergies.

The Strategy should be revised and expanded to explicitly incorporate targets and indicators for the social dimension. Integration of social concerns into the Strategy will ensure its comprehensiveness. As part of the social indicators, the number of green jobs created, the quality of the jobs and working conditions in green activities should be

considered. This requires better alignment of the social dimension of the Strategy with the country's structural transformation plan to identify potential 'winners' and possible 'losers' as well as necessary compensation mechanisms. Therefore, the Strategy should go beyond emissions reduction targets to include relevant economic, social and environmental targets that can indicate progress towards an inclusive green economy. The next generation of Strategy and Plan should be fully harmonized in terms of targets and indicators.

9.2.2 Specific recommendations

Policy coherence and the regulatory environment

Coherent sectoral inclusive green economy-related policies and strategies need to be developed to complement the Climate-Resilient Green Economy Strategy and engender concerted actions towards building an inclusive green economy that supports structural transformation in Ethiopia. In this regard, it is particularly important to develop an inclusive green economy strategy for the industrial sector to include the strategic subsectors identified in the Government's transformation plan. To this end, a detailed inclusive green economy roadmap should be developed for each priority manufacturing sub-sector, taking into account the country's static and dynamic comparative advantage in the international and regional markets.

The Climate-Resilient Green Economy Strategy targets and indicators should be aligned with those of Growth and Transformation Plan to foster linkages between them and also identify and assess synergies and trade-offs not only among the economic, environmental and social dimensions, but also across sectors and Strategy priorities. Thus, the Strategy should expand its objectives and targets to cover relevant economic, social and environmental variables, following which, these could be factored into the country's subsequent medium-term plans such as the second generation Growth and Transformation Plan. Furthermore, there is a need to

ensure that policy instruments are selected based on their dynamic net benefits to society and their capacity to trigger inclusive green structural transformation and transparent and robust mechanisms and methodologies for monitoring and evaluating inclusive green economy policies and interventions should be established.

The design of regulations and related interventions on an inclusive green economy should be informed by relevant studies prior to their adoption. The implementation of such studies should be monitored and evaluated to assess their effectiveness and make necessary adjustments.

Inclusive green economy incentive schemes

A thorough assessment of the various inclusive green economy incentive schemes across sectors needs to be carried out to establish whether these are compatible with Ethiopia's structural transformation objectives. Such incentives should vary across sectors and be based on the agreed terms of reference (between the incentive provider and recipient), with associated targets and indicators that are clear and transparent. Thus, effective inclusive green economy-related incentives are essential, and it should be ensured that public and private actors are adequately informed.

Making structural transformation compatible with inclusive green economy objectives requires improving resource productivity, and reducing the environmental impact and enhancing the inclusiveness of industrialization. In this respect, the Government should provide incentives such as subsidies for the adoption of clean or environmentally sound technologies, promoting green foreign direct investment and providing the labour force with the requisite skills for newly introduced technologies.

Metrics for measuring inclusive green economy progress

Clear, simple and measurable inclusive green economy indicators across sectors should be developed. It is also crucial to design and implement com-

prehensive and clear monitoring and evaluation mechanisms for adequate measurement, reporting and feedback. New and broad metrics that track economic, social and environmental progress and well-being should be developed for measuring an inclusive green economy.

There is a need to go beyond the current measurement of economic performance, which focuses on economic accounting. Integrated economic and environmental accounting represents one of the emerging tools and approaches to generate additional relevant inclusive green economy indicators that could be integrated into the standard national accounting system in Ethiopia. In particular, integrated economic and environmental accounting framework is used to account for both stocks and flows of natural resources relevant to environmental and economic issues. Therefore such a framework would enhance the capacity of policymakers and development planners to properly evaluate the synergies and trade-offs between the various inclusive green economy and structural transformation policies and assess progress towards an inclusive green economy.

Capacity development

A comprehensive capacity development programme should be developed and implemented to strengthen the capability of key government, non-governmental and private sector institutions for inclusive green economy policy design and implementation. The capacity of government institutions to develop and use analytical tools for integrated assessment of inclusive green economy policies and strategies should also be strengthened. Examples of these tools and methodologies include the integrated indicator framework, the environmental and social assessment, development planning and policy analysis models, and governance analysis tools.

Capacity development measures such as on-the-job training and short-and long-term training, which can be implemented in collaboration with (local) universities and research institutes, should

be promoted. In addition, continuous capacity development programmes need to be designed to enhance awareness and knowledge of inclusive green economy/climate-resilient green economy concepts for middle and lower level government officials.

Extensive awareness creation activities regarding inclusive green economy/climate-resilient green economy programmes for the general public and grass-roots level communities should be implemented. These programmes can be integrated into the ongoing mass mobilization and training efforts, which can be organized and delivered through Farmer Training Centres in rural areas.

The capacity of the Central Statistical Agency should be strengthened to enable it to design and implement a system to collect, manage and disseminate inclusive green economy-related data and information covering a wide range of economic, environmental and social issues taking into consideration synergies and trade-offs among the various dimensions.

Finance

Access to inclusive green economy financing should be enhanced through, among other measures, establishing a special window for private firms engaged in green initiatives. Loans or credit facilities need to be used not only for investments, but also for working capital for green initiatives.

The cost of inclusive green economy financing should be reduced through the promotion of financial inclusion mechanisms. Direct funds at

reduced interest rates should be extended to firms engaged in green programmes that use domestic resources, to encourage inter-sectoral linkages.

This involves preferential treatment of firms that use local resources as inputs in their manufacturing processes.

The development of green financing should be supported and promoted. Given the weak domestic revenue sources, financing should have a particular strategic focus on supporting the development of science, technology and innovation-based firms.

Coordination, networking and information sharing

Platforms and networks for the management and sharing of knowledge, including good practices and lessons learned in inclusive green economy and structural transformation policy formulation and implementation, should be strengthened and expanded. Such platforms and networks could, for example entail online accessibility of relevant information on inclusive green economy programmes, and indicators, and targets for economic agents. This will minimize transaction costs and enhance competitiveness.

Inclusive green economy champions should be identified and supported; and their knowledge and experience shared with other actors to attract and influence other actors and stakeholders to enhance green investment.

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Annexes

Annex 1: List of stakeholders consulted

Name	Institution/Organization
Ato Temesgen Walleigne	National Planning Commission
Mr. Berhanu Assefa	Ministry of Agriculture
Dr. Yegremachew Seyoum	Ministry of Environmental Protection and Forestry
W/t Selam Kidane	Acting Director, Law and Standards, Ministry of Environmental Protection and Forestry
Ms. Selamawit Desta	Ministry of Environmental Protection and Forestry
Ato Mezgebu Amha	Ministry of Finance and Economic Development
Mr. Zerihun Getu	CRGE Facility Assistant Coordinator, Ministry of Finance and Economic Development
Mr. Admassu Gedamu	Director, United Nations Agencies and Regional Economic Cooperation, Ministry of Finance and Economic Development
Mr. Mulay Woldu	Expert, Ministry of Finance and Economic Development
Mr. Solomon Tesfaselassie	Expert, National Planning Commission
Ato Desta Lambebo	Ministry of Finance and Economic Development
Ato Ahmed Nuru	Ministry of Industry
Mr. Mulugeta Wube	Ministry of Science and Technology
Mr. Assefa Mulugeta	Ministry of Trade
Mr. Yetsedaw Emagne	Ministry of Trade
Mr. Mekonnen Assega	Ministry of Transport
Mr. Robel Meseret	Ministry of Transport
Mr. Fekadu Sahle	Ministry of Urban Development and Housing Construction
Mr. Eyob Amerga	Ministry of Urban Development and Housing Construction
Mr. Teshome Atnafie	Ministry of Water, Irrigation and Energy
Mr. Messeret Mengestu	Addis Ababa Environmental Protection Agency
Mr. Habtu Mamo	Ethiopia Investment Agency
Dr. Abebe Damte	Ethiopian Development Research Institute
Mr. Dereje Awugachew	Manager, Credit Process, Development Bank of Ethiopia
Mr. Gedion Mekonnen	Team Leader, Development Bank of Ethiopia
Ato Twedros Sintayehu	Orbit Ethiopia
Mr. Belete Beyene	Hilina Enriched Foods Processing Center P.L.C.
Mr. Tesfahun	Manager, NM Plc
Mr. Oumer Ali	Manager, Saygendima Garment
Mr. Abebe Tafa	Ethiopian Sugar Corporation
Ato Tamiru Wubbie	Ethiopian Chamber of Commerce & Sectoral Associations
Mr. Hailegabriel Fekadu	Addis Ababa Chamber of Commerce and Sectoral Associations
Mr. Yidenkachew Taye	Manager, Sonay Garment
Mr. Dawit Nerea	Ethiopian Chamber of Commerce and Sectoral Associations
Mr. Atlaw Alemu	Department of Economics, Addis Ababa University
Mr. Demirew Getachew	Ethiopian Economics Association
Mr. Admit Zerihun	African Development Bank
Mr. Bernau Lakew	United Kingdom Department for International Development
Mr. Haile Kibret	UNDP

