United Nations
Economic Commission for Africa

No. ECA/22/024

ECA POLICY BRIEF

Unleashing the potential of the private sector to drive green growth and job creation in Zambia

Key action areas

Cross-sectoral actions

a. Develop and implement an integrated programme to mobilize and enhance access to affordable and adequate financing for green and sustainable private sector enterprises, including micro-, small and medium-sized enterprises;
b. Develop and implement a plan with well-defined channels of engagement and opportunities for investment by the private sector to implement the updated nationally determined contribution of Zambia on climate action;
c. Establish green business platforms or strengthen existing coalitions with associations, chambers of commerce, forums, private sector platforms and green business stakeholders to facilitate innovation and knowledge transfer to boost green business;
d. Explore the feasibility of developing and implementing an appropriate bioenergy buttressed green growth investment model to maximize green business in the energy, agriculture, manufacturing and waste management sectors;
e. Strengthen selected regulatory frameworks and incentive systems for green or sustainable investment and business, including policy frameworks for green and circular economy;
f. Develop and implement a programme to support existing green enterprises in reviewing and strengthening their business policies, practices and value chains to provide opportunities for the empowerment and employment of young people, women and local communities;
g. Strengthen collaboration among development partners, including organizations of the United Nations system, to facilitate and enable strong, streamlined and synergistic support for green enterprises in scaling up private sector investment, including addressing climate change.

Sectoral action areas

Agriculture

a. Capitalize on the African Continental Free Trade Area by providing government assistance to the private sector to strengthen and expand cross-border trade, in particular of green commodities for which markets already exist;
b. Strengthen water resources governance and institutional arrangements by decentralizing to the district level to reduce the irrigation costs of doing green business in water;
c. Promote climate-smart agricultural practices, such as mulching and rotation.

Energy

Promote rural, decentralized, micro-, low- and renewable energy systems to alleviate the shortfalls in electricity supply, generate income and increase green job creation.

Manufacturing

Design and implement a programme to facilitate the transition of existing industrial parks into green or eco-industrial parks or the development of such parks to enable manufacturers to strengthen the green profiles of their operations, goods and services.

Waste management

a. Develop and implement an action plan to manage plastic waste, e-waste and other major waste streams;
b. Capitalize on and strengthen cross-border green trade to facilitate the flow (export or import) of adequate volumes of waste that can be recycled and upcycled, and marketed for green recycled or upcycled products;
c. Promote the use of financial incentives to boost recycling and upcycling;
d. Support change in consumer behaviour in handling waste.

1. Introduction

The growing private sector in Africa, including micro-, small and medium-sized enterprises, is well positioned to boost green growth and associated job creation. In that regard, the private sector needs to reorient its investment to green and sustainable businesses and practices. Such a reorientation would enable the private sector to support countries in their efforts to combat the continuous threat and risks posed by high levels of poverty, the acceleration of climate change, and the degradation and loss of natural capital, including biodiversity loss and resource scarcity.

The present policy brief is aimed at strengthening the knowledge base relating to green and sustainable businesses, including their role in green growth and job creation. It is also intended to provide information to guide private sector decision-making and investment, as well as the design and implementation of public policies, programmes and other interventions, to scale up green investment in the private sector. It sets out the case for policy interventions and other measures aimed at unlocking green growth and job creation led by the private sector in Zambia.

The information in the policy brief is drawn from a case study in Zambia, conducted jointly by the Economic Commission for Africa and the Ministry of Lands and Natural Resources of Zambia from December 2019 to October 2020. The focus of the study was on the potential to scale up green business investment in four sectors: energy, agriculture, manufacturing and waste management. Most of the sectors underpin or make immense contributions to economic growth in many African countries and offer substantial opportunities for private sector investment. The lack of private sector green investment in these sectors, however, has always led to a high environmental footprint. Accordingly, steering private sector investment in these sectors towards green and sustainable businesses can pave the way to advancing green growth and improving employment outcomes.

The policy brief contains an overview of existing green businesses and investment in Zambia, including measures, incentives and conditions needed to spur green investment, green growth and job creation, and to ensure the country's resilience to shocks, in particular those relating to climate change and the degradation of natural capital, including biodiversity loss and resource scarcity and depletion.

It is organized into five Section. Section I contains and introduction, while Section II provides context and an explanation of the compelling need for green growth and job creation to address the sustainable development challenges in Zambia. Section III contains a discussion on the potential role of the private sector in green growth and job creation. Section IV contains an examination of existing green businesses in the private sector and their contribution to green growth and job creation. as well as an exploration of the potential, challenges and opportunities for scaling up green businesses in the four selected sectors. Section V contains the main conclusions and key action areas in which action is needed to unlock the potential of the private sector to drive green growth and job creation in Zambia.

2. Setting the context: green growth and job creation to address the sustainable development challenges in Zambia

The rationale for unlocking the potential of the private sector to drive green growth and job creation in Zambia is compelled by several development priorities and challenges in the country, including increasing its economic growth rate and eradicating poverty among its rapidly growing population. Zambia is also grappling with climate change and growing levels of degradation and depletion of its

natural resources, which must be addressed if the country is to pursue a path towards inclusive and sustainable development.

Growth in Zambia slowed between 2015 and 2018, as the country experienced worsening macroeconomic conditions characterized by high fiscal deficits, unstable exchange rates and a decline in copper prices. Inflation rose from 2.9 per cent in 2015 to 4.8 per cent in 2018. Production also decreased as a result of persistent droughts and power generation deficits. The percentage of people living below the national poverty line stood at a high rate of 54 per cent in 2018, even though it had dropped from 62 per cent in 2010. Income and non-income inequalities have continued to grow. While the country recorded a noticeable improvement in formal employment in 2019, it fell far short of the targets contained in Sustainable Development Goal 8.

The productivity of the agricultural sector has been threatened by an overreliance on traditional farming methods and the increasing impact of climate change and variability. Extreme weather conditions, such as droughts, rising temperatures and the unpredictable rainfall patterns associated with climate change have also negatively affected hydropower generation and other sectors of the economy in the country. Degradation of the environment and natural capital is a threat to economic growth and sustainable development. Land degradation caused by agriculture use was estimated to have cost the country 1.57 per cent of its gross domestic product in 2010. In addition, from the first quarter of 2020, the emergence and build-up of the coronavirus disease (COVID-19) pandemic began affecting Zambia, as it did the rest of the world, with unprecedented and unpredictable economic pressure.

To realize the country's development priorities, Zambia developed its Seventh National Development Plan (2017–2021), which is based on the principle of leaving no one behind and is intended to harmonize and align development interventions with regional and global development agendas. Transitioning to green growth can help Zambia in its efforts to attain inclusive growth, create employment, reduce poverty and meet its other sustainable development priorities. In addition, a transition to green growth would allow the country to fulfil its commitments on climate change, disaster risk reduction, biodiversity and environmental sustainability, as set out in the 2030 Agenda for Sustainable Development and Agenda 2063: The Africa We Want, of the African Union, and other development frameworks.

There are no universally adopted definitions of the term "green growth". However, it can be understood to refer to a development approach that is aimed at delivering economic growth that is both environmentally sustainable and socially inclusive (Acosta and others, 2019). In Zambia, green growth is defined as inclusive development that makes sustainable and equitable use of the country's natural resources within ecological limits (Banda and Bass, 2014). A working definition of green growth that has been used by the Economic Commission for Africa is economic growth that entails increased and efficient production and competitiveness, while at the same time ensuring climate resilience and maintenance, as well as an increase in the quality, quantity and productivity of natural assets.

3. Critical role of the private sector in fostering green growth and job creation

In the context of competing and urgent priorities, as well as limited resources and comparative advantages, governments alone cannot adequately tackle the daunting challenges of creating jobs and reducing poverty, while combating climate change and the degradation of natural capital and biodiversity. The most effective strategy for addressing such challenges is to ensure the active and meaningful engagement of all stakeholders. The key to implementing this strategy is to mainstream green growth into economic development, public and private sector investment and civil society interventions.

Studies show that the private sector,[1] including both large and micro-, small and medium-sized enterprises, have a crucial role to play in the transition to green growth and, ultimately, in job creation. Throughout Africa, the private sector is growing rapidly and is responsible for significant economic output and employment. Private sector investment, however, has been associated with a large environmental footprint, in particular in the context of weak safeguards systems and environmental governance, and poor incentive schemes. The private sector in Zambia

1 For the purposes of the present study, the private sector refers to organizations or firms that engage in profit-seeking activities and have a majority of private ownership (i.e., not owned or operated by government entities). It includes financial institutions and intermediaries, multinational companies, small and medium-sized enterprises, cooperatives, individual entrepreneurs and farmers who work in the formal and informal sectors. The definition excludes entities that have a non-profit focus, such as private foundations. This adaptation was taken from Morgado and Lasfargues (2017).

is composed mostly of micro-, small and medium-sized enterprises that play an important role in production, employment and income generation (International Trade Centre, 2019).

Some 85.0 per cent of the labour force works in the informal sector, which is understood to include micro-, small and medium-sized enterprises and which represents 97 per cent of all businesses in Zambia, while only 16.4 per cent of the labour force is employed in the formal sector, which accounts for 66 per cent of gross domestic product (Ministry of National Development Planning, 2020). The dominance of micro-, small and medium-sized enterprises in the country suggests that they have enormous potential to contribute to future inclusive green growth and job creation. In that context, the country needs to tackle the challenges faced by businesses, including micro-, small and medium-sized enterprises, and to encourage them to reorient their enterprises to green businesses. Such actions will create a crucial opportunity for those businesses to maximize their contribution to the country's inclusive green growth and job creation efforts, and to its efforts during and beyond the COVID-19 crisis to rebuild its economy and become more resilient.

4. Key findings on the status and potential of green businesses in the private sector and their contribution to green growth and job creation

A. Status of green businesses

In the agricultural sector, more than 20 examples of companies and institutions undertaking green growth-related activities were identified. Their work related to diverse commodities, including cassava, sweet potatoes, bamboo, herbs, spices, biofertilizers, avocados, jatropha and Pongamia. Some examples include Albida Agriculture Ltd., Mahur Environmental Investments, Thomro Investments, City Waste Solutions, GroAfrica Ltd., Moriah Gardens and the Golden Valley Agricultural Research Trust.

Key message
Green enterprises are viable and are directly engaged in or supporting green business development across the four selected sectors. Most of these firms are micro-, small and medium-sized enterprises.

Most private green enterprises in the energy sector are engaged in hydro and solar power generation. The most recent private sector installations are Itezhi Tezhi at 120.0 megawatts (MW) (hydro), Bangweulu at 54.3 MW (solar) and Ngonye at 34.0 MW (solar). In total, three companies have invested in biofuels at a small scale, one in bioelectricity from cow dung at a small scale, four in solar and six (including Zesco) in hydropower plants.

Several private enterprises are engaged in green business in the manufacturing sector in Zambia, but data on their performance are scant. Such enterprises include: Nemchem International, Lusaka (cleaning, sanitizing and maintenance products and services); Hongsen Investment Ltd. (producing Lusaka cups, brooms and buckets, among other things, from recycled bottles – plastic collectors receive approximately $2 for each bundle and $1 for each sack of plastic bottles); Good Time Steel (steel products from scrap metal using 180 tons of scrap per day); Nampak Zambia (packaging material); and Copperbelt Energy Corporation (biodiesel from soy). Other industries are: Mahur Environmental Investments (sweet potato crisps); GroAfrica Ltd. (cassava milling); Tapera Industries (soap, mainly from jatropha); Sich Enviro-energy Engineering Solutions (diesel from plastic waste); Zhongkai International (ethanol from cassava and maize); Zambian Breweries (Eagle beer from cassava); Banda Furniture (furniture and artefacts from bamboo); Umoyo (wellness foods and non-food products); and Moriah Gardens (Hass avocado oil, and chilli and groundnut pastes).

Waste management activities in Zambia are carried out predominantly in urban centres and mainly involve the collecting and disposing of waste from domestic, market, commercial and industrial sources. There are also individual sorters linked with companies that recycle plastics and scrap metal. Mwanza and Mbohwa (2019), in their study on technology and plastic recycling, identified around 30 such companies. Some of the waste management enterprises based in Lusaka include Nemchem International, Clemack Cleaning Services, City Waste Solutions, Tandem, Thomro Investments, Mahur Environmental Investments, Kapiri Mposhi, GL Carriers Ltd., Waste Management Specialists, Eco Hazmat Solutions, Alpha Polyplast Ltd. and Twin Care Commercial Services. Northwood Environmental Ltd. is based in Kitwe.

B. Job creation and contribution to green growth by green enterprises

1. *Job creation*

Key message

Green businesses in Zambia can create jobs and generate positive environmental outcomes that are central to green growth.

Agricultural operations in Zambia are largely labour-intensive and offer massive employment opportunities. This is illustrated by the following two examples:

a. Estimates are that more than 300 jobs can be created to produce biofertilizer from soil biomicrobes to supply 130,000 thousand hectares of bioenergy crops. Jobs could also be created for those supplying grass and leaves that work with soil biomicrobes. For this hectarage, these biomass aggregators can earn approximately $50–$70 per hectare, resulting in a business generating $9.1 million;

b. In the case of feedstock production for ethanol – with each five-member household estimated to handle between 2 and 4 hectares, producing 8 dry tons of cassava per hectare each year and 350 litres of ethanol per dry ton – some 235,896 households would be engaged each year for feedstock production to produce 97 million litres of ethanol annually for E10[2] transport and charcoal fuel needs, and 200 MW of bioelectricity.

In 2014, a total of 16,175 people were employed in the energy sector, in electricity, gas, steam and air-conditioning supply (International Labour Organization, 2017). In the solar energy area, around 200 people are employed by Bangweulu Solar (54.3 MW) and 120 people by Ngonye Solar (34.0 MW). For hydropower, 550 people are employed by Itezhi Tezhi Hydro (see table). Jobs were created in the production of modern bioenergy by companies including Sunbird Bioenergy, with a planned 100 million-litre distillery plant that employs an estimated 500 people at the biorefinery (administration, operations and engineering) and engages 20,000 cassava outgrowers; and Thomro Investments, the only company presently licensed in Zambia, to produce 15 million litres of ethanol and 15 million litres of biodiesel, employs an estimated 250 people in production and engages some 2,680 smallholder cassava growers and 7,500 smallholder oil crop growers. There is evidence that more people are employed in biomass-based energy production than in the petroleum industry. In the United States of America, for example, an average of only 0.45 jobs were created for every 1 million litres of petroleum fuels used, compared with 1.74 jobs created for every 1 million litres of biofuels used (United States, Department of Energy, 2017; Energy Information Energy, 2021). This shows that biofuels can create nearly four times more jobs than petroleum fuels.

Job creation by green enterprises in the energy sector

Company	Jobs created
Bangweulu Solar (20: IDC & 80: Neoen S.A.S. France), with a bid of 6.015 cents/kWh over 25 years (World Bank, 2017).	200 jobs created (145 local) 44 local jobs during operations
Ngonye (20: IDC & 80: Enel Green Power SPA of Italy) bids 7.839 cents/kWh over 25 years (World Bank, 2017).	120 jobs created (87 local)
Itezhi Tezhi Power Corporation (owned by Tata)	500 in construction, 50 during operation

Many manufacturing companies undertaking green growth-related work in Zambia work with such commodities as chemicals, beverages, biofuels, furniture, steel products, foods, recycled plastic products and soap. Recycling of scrap metal by Good Time Steel in Lusaka, stands out as a good practice.

It is estimated that 15,000 people are engaged in waste collection and management in Zambia (International Labour Organization, 2017). The recycling industry contributes approximately 9 per cent to job creation. This includes skilled, semi-skilled and unskilled workers in such jobs as recycling machine operators, sorters, refuse collectors, waste management officers, waste engineers, environmental engineers and plant maintenance engineers. Scrap metal recycling contributes 13.0 per cent (1,950 jobs) to job creation in the recycling industry and is second only to plastic recycling, which contributes 80.7 per cent (12,105 jobs). In comparison, paper recycling contributes 2.9 per cent (435 jobs) and sack recycling contributes 3.4 per cent (510 jobs). Good Time Steel manufactures steel products from scrap metal with a daily demand of 180 tons and has created around 1,000 jobs in the recycling plant and 500 jobs in the supply of scrap metal.

2 E10 is a low-level blend of fuel composed of 10 per cent ethanol and 90 per cent gasoline.

Experts and practitioners who attended the workshop to validate the present study argued that the above-mentioned job statistics had been underestimated. In their assessment, the waste management sector had created up to 10,000 new jobs in 2020 in Lusaka alone and could create double that number by 2030. Approximately 99 per cent of the businesses operating in the waste management sector are owned by Zambians and require capacity-building and new equipment. In noting that 70 per cent of waste is generated in urban areas, participants acknowledged the need to incorporate peri-urban areas into the bioenergy buttressed green growth investment model as transfer stations will be required in these areas.

2. Green growth

Key message

Green businesses that are in operation are already contributing to the reduction of degradation and loss of natural capital and to the restoration of nature, including biodiversity, clean air and, ultimately, climate-resilient growth. Enhanced efforts are needed to better quantify and aggregate these contributions.

The contribution of green businesses to the quality and productivity of the environment and to the country's natural capital was used as a proxy indicator of green growth in the absence of data on economic growth and was adjusted for changes in natural resources and the emission of pollutants.

Bangweulu Solar is expected to save 97,000 tons of carbon dioxide (CO2) per year; GroAfrica cassava milling reduces destitution and charcoal production by providing an alternative income to smallholder farmers. Biofertilizers (Thomro Investments) and soil biomicrobes (Mulembo Farms), among other benefits, reduce the input costs of crop production, improve soils, increase crop productivity and reduce bush burning, which can help to reduce climate change. There are also environmental benefits to recycling metals, including 90 per cent savings in virgin materials use, 86 per cent reduction in air pollution, 40 per cent reduction in water use, 97 per cent reduction in mining wastes and 105 per cent reduction in consumer wastes. Furthermore, it is estimated that, in Zambia, approximately 6 tons of plastic waste are discharged into the environment every day in landfills or incinerated, releasing toxic fumes into the atmosphere. Sich Enviro-energy Engineering Solutions is a Zambian company engaged in solving this environmental problem by converting plastic waste into fuel.

C. Enablers of green growth and private sector investment

Key message

The country has taken wide-ranging positive steps that favour the transition to green growth and has propelled the development of the private sector and green enterprises forward.

Several measures have been taken by the Government, the private sector and their partners to facilitate private sector development and, in many cases, to encourage green businesses. Examples of such measures are given below.

1. Nationally determined contribution

The Government of Zambia developed and submitted its updated nationally determined contribution to the United Nations Framework Convention on Climate Change in December 2020 (Zambia, 2020). The updated document establishes the country's commitment to climate action and provides a framework for climate change mitigation and adaptation in energy, including improved fuel efficiency; industrial processes and product use; agriculture (conservation and sustainable agriculture); waste management (improved solid waste handling and disposal practices); and forestry and land use.

2. Private sector development reform programme

Zambia has been implementing the Private Sector Development Reform Programme, which is aimed at improving the investment environment in the country.

3. National agricultural policy

The Government has put in place a national agricultural policy, the main objectives of which include the liberalization and commercialization of public-private partnerships and the provision of effective agricultural services to ensure sustainable agricultural growth.

4. Farmer Input Support Programme

Since 2002, the Government has been implementing its Farmer Input Support Programme in an effort to stimulate growth and improve the performance of farmers, especially of smallholders.

Key message

At present, there are other mechanisms that function in Zambia, such as business associations, forums, and support organizations and programmes. They present entry points that support and strengthen the country's private sector and green enterprise development.

In addition to such measures, the Government has also implemented the Zambia Green Jobs Programme and the GET FiT Zambia Programme, and has established industrial parks. A wide range of partners, including organizations and entities of the United Nations system[3] are providing support to Zambia in their efforts towards realizing green investment.

In addition to the policy and strategic frameworks put in place, the Government, along with the private sector and civil society (working either collaboratively or individually), have established associations, forums and programmes that support private sector-led green businesses. They include: Zambia Chamber of Commerce and Industry; Zambia Association of Manufacturers; Zambia National Farmers Union; Zambia Chamber of Small and Medium Business Associations; Community Markets for Conservation; Lloyds Financials; Zambia National Farmers Union; and Zambia Renewable Energy Association. These mechanisms contribute to raising awareness of government policies; lobbying governments for favourable policy and legislative reforms; enhancing the bargaining power of green businesses; peer learning, including exchanging good practices; and identifying and strengthening linkages among green enterprises to drive efficiency and scalability.

D. Scalability of green businesses

The results of the survey conducted for the present study reveal that 43.8 per cent of the respondents were in green businesses, in general, and that 50.7 per cent of those in the agricultural sector, 30 per cent in the energy sector, 47.5 per cent in the manufacturing industry, and 42.4 per cent in the waste management sector were all willing to invest in green businesses, on condition that gaps in investment enablers were addressed.

Key message

With a strong enabling environment, there is wide scope for scalability of green businesses across the selected sectors.

There are many opportunities for private sector green businesses in agriculture, including investment opportunities in farming feedstocks to produce biofuels and bioenergy. The production of biodiesel and ethanol combined provides farmers with a feedstock business volume of $45.26 million annually, while bridging the 200 MW power deficit in the country provides farmers and other biomass (e.g., urban biomass waste) suppliers with a business volume of $113.32 million annually, or a total of $158.58 million from feedstock delivery alone. Other investment opportunities exist in the production of herbs, spices, teas and wellness foods, and in water resource development, including irrigation for agriculture and other socioeconomic uses.

There is potential for green businesses to meet the annual rise in demand for energy of around 200 MW, a deficit of 600 MW, and demand for power in neighbouring countries. There is also scope for scaling up green investment in renewable energy businesses by micro-, small and medium-sized enterprises and start-ups, given their comparative advantage in distribution, installation, operations and maintenance of technology applications. With regard to basic cooking needs, there are opportunities for green businesses to invest in pellets, biogas, and hydrous ethanol. In addition, the Government announced that there are the untapped ethanol (E10) and biodiesel (B5) blending targets to be met.

As most commodities are still imported into Zambia, investment opportunities abound in many areas, including localizing and ensuring resource-efficient and clean manufacturing in several product areas, including the manufacturing of food and beverages, textiles and leather, wood and wood products, paper and paper products, chemicals, rubber and plastic products; non-metallic mineral products, basic metal products and fabricated metal products (Ministry of National Development Planning, 2020).

3 Such entities include the International Labour Organization, the United Nations Environment Programme, the United Nations Conference on Trade and Development, the Food and Agriculture Organization of the United Nations and the International Trade Centre.

In 2014, 76,470 people were employed in the manufacturing sector (International Labour Organization, 2017). During the undertaking of the present study, data were scant on the actual jobs that private green businesses created in manufacturing in the various products areas.

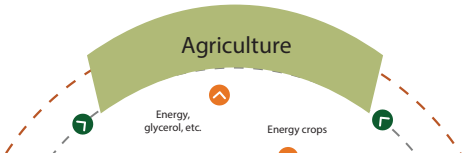
Clean technology in the developing world, for the decade ending in 2023, has the potential to create a $1.2 trillion market for micro-, small and medium-sized enterprises in such sectors as waste management, small-scale hydropower, water treatment and renewable energy. These are sectors of advantage for the enterprises as they are already engaged in construction, installation, operations and maintenance, and they have a connection to local markets.

Key message

There is great potential for green investment in the manufacturing sector, based on recycling and upcycling waste, to scale up circular economy practices in the country.

Green businesses also provide a great opportunity for the country to harness the linkages among the four sectors (agriculture, energy, manufacturing and waste management) to implement a bioenergy buttressed green growth investment model, which could generate an estimated $6.41 billion annually in bioenergy alone (see figure).

Bioenergy buttressed green growth investment model



Key message

Even though the country has taken steps in the right direction, several factors remain that hinders progress towards green growth transition and, specifically, the scaling up of private-led green investments, which are undermining job creation opportunities and the potential of green investments.

Scaling up green businesses, however, will require action to tackle a myriad of barriers and challenges faced by private sector enterprises, in general, which are more pronounced in the case of green enterprises. One such challenge is the lack of adequate, accessible and long-term financing for green growth interventions and green businesses. When financing is available, however, the cost of borrowing is too high, or some green companies, such as those in the biofuels industry, are not accommodated. Small and medium-sized enterprises and women-led businesses are the most affected. This is consistent with an article from Care International (2019), which reveals that, in low-income communities, “80 per cent of women-owned businesses with credit needs are either unserved or underserved”. The case in Zambia is similar to that in other developing countries – an estimated 40 per cent of formal micro-, small and medium-sized enterprises have an unmet financing need of $5.2 trillion every year (World Bank, 2022). The lack of capacity among private stakeholders to develop bankable projects compounds the