

JUNE 2024

KEY FINDINGS / METHODOLOGY / TRENDS

GOOD

GREEN JOBS

in

AFRICAN CITIES

**C40
CITIES**

**CIRCLE
ECONOMY**



Introduction

In October 2022 at the C40 World's Mayor Summit, C40 mayors pledged to stand together to drive the creation of **50 million green jobs by 2030**¹ in partnership with national governments, businesses, and other organisations. Since then, cities have continued to **implement actions that drive green job creation** and equitable workforce development across sectors, towards a future where everyone can thrive.

C40 Cities and Circle Economy Foundation have developed a methodology to measure green jobs globally across C40 cities. This briefing focuses on the first baseline results and findings for the African cities in the C40 network.²

Key findings

- **Within the C40 African cities analysed, 12% of the jobs can be considered green, or 2.3 million. This is out of the approximate 19 million jobs³ that exist within the 12 cities analysed.** About 1.4 million (7.5%) are considered direct green jobs, meaning they operate in a green sector such as renewable energy, waste collection, or repair, while around 830,000 (4.4%) are considered indirectly green, providing the goods and services required for green sectors to operate.
- Green employment varies across C40 cities in Africa, ranging from **3 to 29% total green employment**. There is still great potential to further green all urban sectors and services despite each city having a unique sector, labour profile and capacity for public action in the field of labour policy.
- **Sectors with the highest green employment share** (above 20% of total employment in the sector) are **water supply, sewerage waste management and remediation activities; transportation and storage; construction and electricity, steam, and air conditioning supply**, which are strongly influenced by local climate public policy measures.
- **The service sector (transport, food, retail, etc.) is the top employer in African C40 cities, accounting for 11.6 million jobs.** However, only over 13% of these jobs are currently green, showing great potential for green job creation through more energy-efficient practices, procurement from green sources, and engagement with municipal governments to support green policy and labour-force development.

Distribution of Green Jobs in 12 African C40 Member Cities

Total Number of Jobs 19 million	Total Number of Green Jobs 2.3 million (12% of all jobs)	Direct Green Jobs: 1.4 million
		Indirect Green Jobs: 830,000



- **More disaggregated demographic data (gender, race, age, etc.) throughout all cities is critical for cities to address equity and make good, green jobs available for all.** For example, in countries like Ethiopia or Kenya, where data was available, less than 20% of the jobs in the construction and transportation sectors, both with a large green job potential, are occupied by women. Similarly, youth employment in these countries represents around 15% in the construction sector and 15-29% in the transportation sector. Cities should ensure that, within the sectors where they have influence over employment, workforce development is diverse and conducted in a way that ensures equitable access and addresses pay and leadership disparities for vulnerable and historically marginalised groups, such as women, youth, indigenous communities, people with disabilities, etc. Disaggregated data at national and local urban levels can support this.

These results showcase how cities are hubs for green jobs, with significant potential that can be leveraged for further sector growth. Climate investments not only create more jobs,⁴ but they can also drive transformative change way beyond city limits across the city's supply chains, both creating green jobs and accelerating the transition away from fossil fuels. For example, globally, building efficiency can create 2.8 times as many jobs as fossil fuels per US\$1 million invested.⁵

While jobs can and will be created as a result of greening key sectors and moving away from fossil fuels, it is imperative that cities also ensure a just transition for those affected by the phase out.⁶ [Ensuring a just transition](#)⁷ that is fair to workers is an opportunity to achieve decarbonisation at the rapid pace needed. **It must be deliberate and well planned through policies and participatory governance to ensure that those most impacted – workers, unions, and communities – have access to good, green jobs and skills, and can actively shape the decision-making process.** Investments in training will be critical to prevent job displacement and ensure workers are equipped with the transferrable skills needed for green jobs. These actions must also be complemented with social protection measures to safeguard people from adverse impacts of the transition. Cities should also support communities and individuals in navigating their changing careers and cultures, acknowledging the importance of industrial heritage.⁸

You can find easily accessible guidance on the key components of urban just transition pathways, showcasing the actions many cities are already taking to prepare for and deliver a just transition for workers and communities in current and upcoming C40 resources [here](#).



Methodology & key definitions

This analysis assessed the number of direct and indirect green jobs across C40 member cities.⁹ The [methodology](#)¹⁰ was adapted from a methodology previously developed by Circle Economy using International Labour Organization (ILO) definitions and in partnership with the United Nations Environment Programme (UNEP) to measure circular jobs.

↓ **Direct green jobs**, which produce the goods and services needed for the green economy: for example, in renewable energy or building retrofits.

↪ **Indirect green jobs**, which produce all other goods and services needed by the workers with direct green jobs, and therefore are required for the proper functioning of the green economy: for example in supply chains or through education.

With the exception of Nairobi, where city-level data was available, the data sourced for this analysis comes from the **ILO's federal employment data** available at the sub-sectoral level at the time of analysis. The sectoral classifications used are based on **ISIC**. In general, this analysis aimed to cover the metropolitan areas of cities, a common data scale to capture the economic hub that exists in and around the cities, but in some instances only city data is covered due to data availability.

This analysis mostly covers formal employment as data is sourced from official employment data sources. It is often difficult to gather disaggregated data on informal workers, but for countries where ILO data was used, part of the informal employment is covered.¹² Informal green jobs can be particularly high in sectors like waste, agriculture, or transportation. According to the ILO, **83% of employment in Africa is informal**.¹³ This can present challenges for low-income communities who are disproportionately burdened by low paying wages, unsafe working conditions, and

WHAT ARE good green jobs?¹¹

Drawing from the definitions from the UNEP and ILO, C40 Cities defines green jobs as:

- New green jobs or existing jobs transformed into green ones, **sustained by transformative climate action**;
- Jobs that **enhance health and well-being, preserve or restore the environment, and help to limit greenhouse gas (GHG) emissions**;
- Jobs that occur across a **range of urban sectors**, including construction, transport, energy, resilience, health care and more;
- Good quality jobs for sustainable economies, aiming to **provide living wages and safe and stable working conditions**.

No universally accepted definition of green jobs exists, with descriptions varying widely in scope, industry focus, skill sets included and/or based on local and regional context. While it is not the aim of our analysis, this analysis can help to build consensus on how to define green jobs.

inaccessible healthcare, reducing their ability to be resilient to climate change, as well as for policy-makers seeking to ensure inclusive climate action. It is essential for policymakers to **include both formal and informal workers into the green transition** to ensure it is environmentally sustainable and socially equitable (good working conditions, liveable wages, social benefits).

Please note that this methodology is first-of-its-kind and may evolve overtime. The analysis will continue to be refined in future iterations of this exercise.

Regional trends snapshot

Cities are emerging as critical catalysts for Africa's green transition, serving as points of concentrated local economic activity where investment will be especially impactful, even amid challenges in the green transition.

Due to the continent's potential to leapfrog to clean energy solutions, urban-led¹⁴ opportunities have been gaining attention. For example, solar and wind energy investments are primarily directed towards meeting the escalating urban energy demands, and it is estimated that the New Africa Renewable Energy Manufacturing Initiative could help create up to 14 Million Jobs by 2050.¹⁵ Simultaneously, sustainable agricultural practices are being endorsed to combat desertification and ensure food security, catering to the rapidly increasing urban populations. This transition is motivated by the necessity to tackle socio-economic challenges such as poverty and unemployment, alongside the effects of the environmental and climate crises. These socioeconomic challenges provide a unique opportunity to develop inclusive economic strategies to promote local good green jobs. The protection and opportunities to include social dialogue with workers and their representatives must be at the heart of policy action.

Nearly all C40 member cities in the region have published a Climate Action Plan that is aligned with the Paris Agreement,¹⁶ and regional leaders are advocating for climate action, resilience, and the realisation of the African Union's Agenda 2063.¹⁷ Solidifying their commitment to green jobs, in September 2023, African mayors united and announced a call for action and investment on climate and green jobs.¹⁸ However, a significant financing gap¹⁹ looms due to restricted access to global climate funds.²⁰ Despite contributing to only 4% of global GHG, Africa significantly suffers from climate change impacts,²¹ which is emphasised by international attention to the need for adaptation and 'loss and damage' funding in recent climate summits.





The green transition must centre on environmental sustainability, encapsulate local development and social equity, and address the region’s development needs. Investing in green sectors can potentially create approximately 75 million green jobs by 2050 in Africa,²² and C40 research²³ in 2021 estimated that South African metros and cities could create around 1.8 million green jobs by 2030 from mitigation and adaptation actions.²⁴ Yet it requires a concerted effort from various stakeholders to respond to the needs of the large youth demographic, unemployment challenges, and the already severe impacts of climate change. Internationally, the Global Energy Alliance for People and Planet stands out, launching initiatives like the ‘Women for Green Jobs’ programme and partnering on the Youth Energy Summit to enhance green skills and business acumen among African energy leaders.²⁵ To learn more on city initiatives advancing the just transition, please see the Call to action section or visit C40’s [good green jobs dashboard](#).

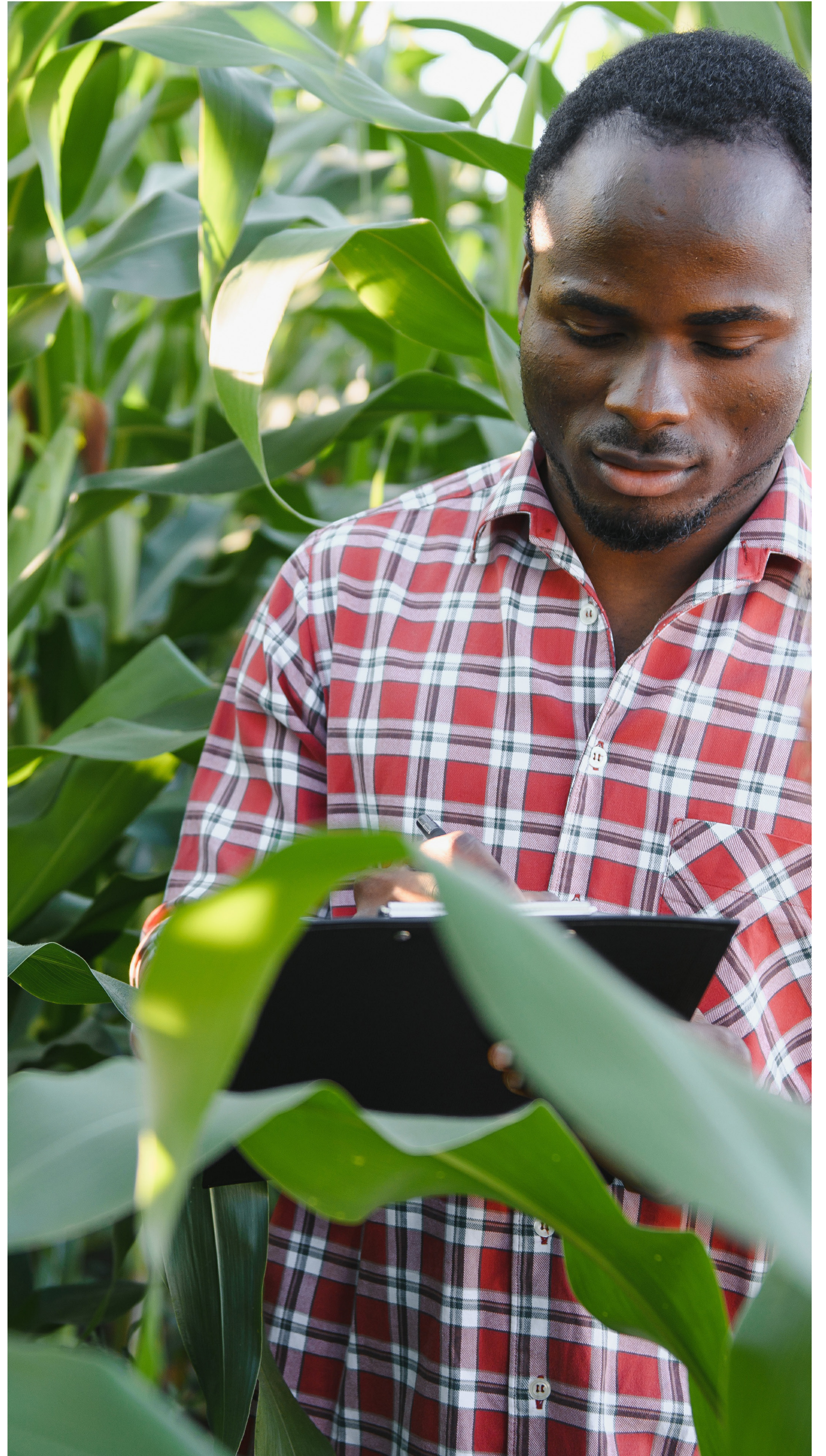
A successful green transition for Africa also lies in tapping into abundant mineral resources, while ensuring local ownership. The region’s richness in critical minerals and metals essential for green technologies—like cobalt for electric vehicle (EV) batteries—positions it as a pivotal player in the global green energy landscape. As global demand for these minerals surges²⁶ in new green sectors such as battery manufacturing, it is key to ensure that these growing industries are managed in a just way and lead to the creation of decent and safe employment for local communities, while meeting local energy demands and protecting local environments.

Bridging gaps in green investment and infrastructure will be a crucial next step. Africa holds tremendous renewable energy potential, boasting 60% of the world’s prime solar resources, yet has attracted a mere 0.5% of global renewable energy investment.²⁷ This underinvestment is a significant hurdle, especially when 43% of Africans lack electricity access.²⁸ Strategies such as subsidising banks and private sector developers, alongside implementing feed-in tariffs, are proposed to bolster renewable energy infrastructure and accessibility, particularly in urban areas where over 1.3 billion people are projected to live by 2050.²⁹



African cities should work to strengthen and green urban planning and mobility, such as the development of robust and affordable public transportation systems. As African cities grow, sustainable urban planning and mobility become increasingly important. This will include the development of robust and affordable public transportation systems, promoting non-motorised transport (as done in Cape Town),³⁰ and implementing smart city technologies to enhance urban resilience and reduce carbon emissions. Some schemes such as the Africa Climate Mobility Initiative address climate-induced migration and displacement by empowering African practitioners to contribute to policy recommendations on climate mobility, reflecting a holistic approach to urban sustainability amidst the green transition.³¹ Finally, as e-mobility garners interest across urban areas in the region, establishing infrastructure support for EVs, like charging stations, will be essential. Government incentives, such as tax breaks or subsidies, can further stimulate consumers and manufacturers to embrace EVs. African cities are well-poised to develop local EV manufacturing³² industries, due to the presence of numerous startups, increasing governmental support for e-mobility and the continent's rich deposits of critical materials for EV batteries.³³

Deliberate efforts to engage youth could supply the workforce with capacity for significant growth in clean construction, EVs, and other growing sustainable fields. Youth data from eight³⁴ African countries revealed that the average youth employment rate in the region represents only 5%, exhibiting untapped opportunities for youth employment and empowerment, which could be realised by strengthening connections between youth skills and data science applications. For instance, linking green tech and youth employment in manufacturing and Information and Communications Technology could allow for sustainable youth employment growth for major funded green technology programmes.³⁵



Overview of green jobs distribution and leading green sectors

This analysis captured 19 million jobs overall in the African regional analysis across 12 cities. Of the total jobs analysed, 2.3 million can be considered green jobs. This accounts for 12% of overall employment analysed.

Of these, 1.4 million (7.5%) are considered directly green, meaning they operate in a green sector such as recycling, and 830,000 (4.4%) are considered indirectly green, providing the goods and services required for green sectors to operate.

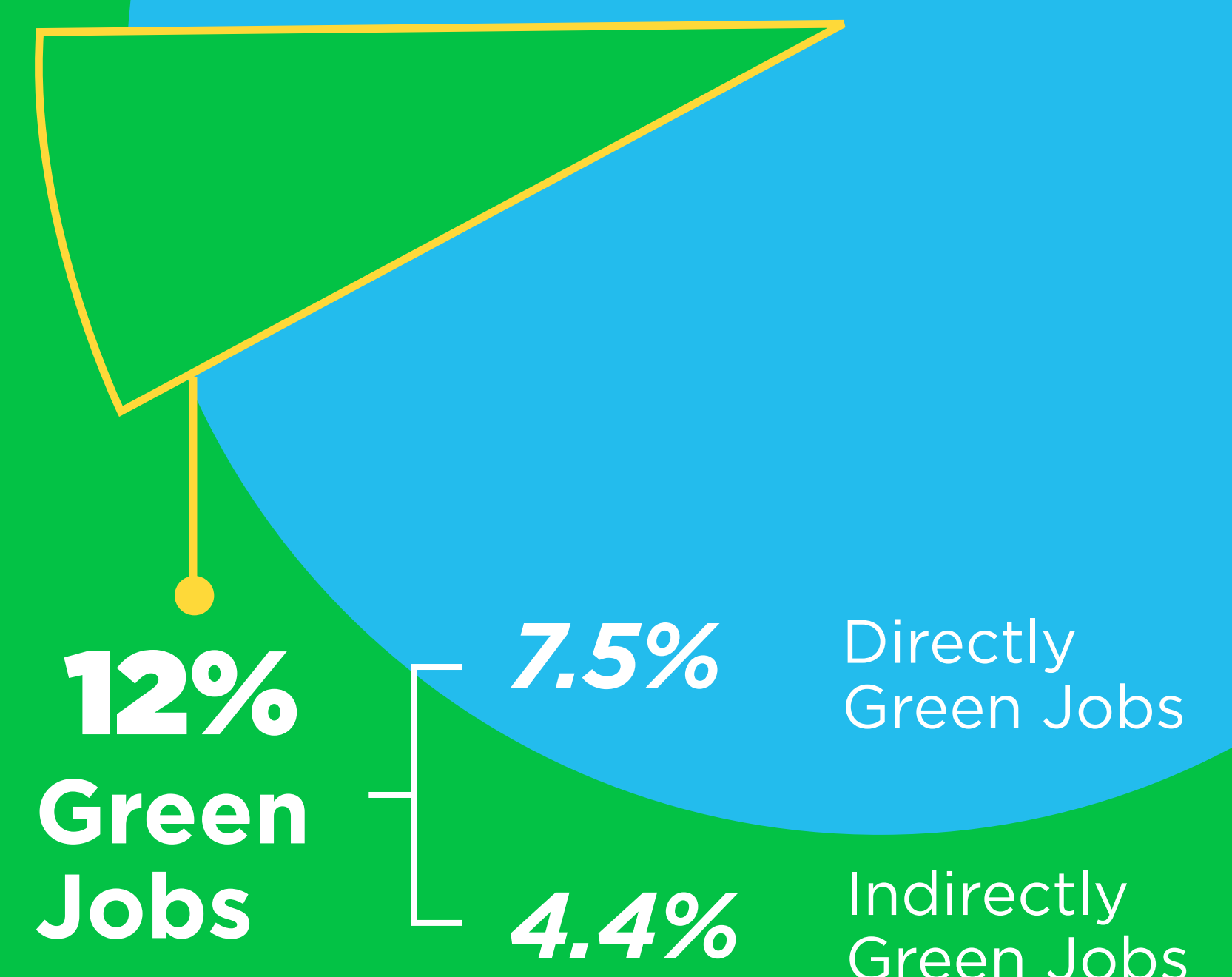
The distribution of green jobs varies across sectors. **The service sector (which includes food, transportation, accommodation or retail, among others) is the largest sector in the region, generating 11.6 million jobs (13.3% classified as green),** and includes major employers like 'Wholesale and retail trade' with 4 million jobs and 'Education' with 1 million jobs. **Sectors that process materials into finished goods, such as manufacturing and construction,** have a slightly higher proportion of jobs (around 18% on average, or nearly 500,000 jobs) are considered green jobs).

This highlights the **service sector's untapped potential in adopting green practices and contributing more significantly to green employment.** Wider energy-efficient practices across the industry, adopting more sustainable business models, and sourcing more local and green products and services can all contribute to greening in these key urban employment sectors. A green service sector job could include preparing locally-sourced vegan or vegetarian meals or selling items that have been sourced from recycled textiles, for example.

In the **'Wholesale and retail trade'** sector, there are 589,060 green jobs. **Activities relating to the repair services of vehicles, consumer goods, and larger machinery and equipment are substantial,³⁶** where 12% of jobs (158,000 jobs) are green. Of these green jobs, over 30% (56,800 jobs) are considered indirect green jobs.



African C40 Member Cities Job Distribution



Total Green Jobs = 2.3 million

Sectors driving green jobs in the region

Four sectors with high total number of green jobs
(direct and indirect)

Sectors	Total employment	Total green jobs	%	Direct green jobs	%	Indirect green jobs	%
Wholesale and retail trade; repair of motor vehicles and motorcycles	3,944,710	589,060	14.9%	314,590	8%	274,470	7%
Transportation and storage	940,430	397,380	42.3%	354,160	37.7%	43,220	4.6%
Construction	1,003,640	321,680	32.1%	249,870	25%	71,810	7.2%
Agriculture and forestry	4,312,390	174,630	4%	96,060	2.2%	78,570	1.8%

They provide repair services to various critical sectors: renewable energy infrastructure, public transport or waste collection. This sector is potentially larger than accounted for as it's well-known that repair services³⁷ are predominantly carried out by the informal sector.³⁸ Repair activities play a key role in supporting livelihoods in urban areas. For C40 mayors, the challenge lies in leveraging these conditions to accelerate the green transition while ensuring that these green activities are associated with good green jobs.³⁹ Committed leadership and governance from mayors and city staff in moving away from fossil fuels and towards a just transition can be extremely impactful in achieving a green economy.

The 'Transportation and storage' sector accounts for nearly 400,000 green jobs in C40 African cities (over 40% of total jobs). Of these transportation and storage jobs, 75% are related to **green urban mobility and transport systems**,⁴⁰ highlighting the critical role that public transport plays both in providing sustainable mobility solutions and contributing to the green job market.⁴¹ Considering that there are nearly 1 million people formally employed in 'Transportation and Storage' activities in the region's cities, **the shift towards greener and more accessible transportation practices could be boosted even further, increasing the numbers of green jobs, aside from bringing many other key benefits such as cleaner air and health benefits.** For example, other transport sub-sectors that have a very large number of jobs in the region, such as non-passenger land transport (which employ around 375,000 people), have less than 5% of green employment. This shows that **a shift towards more environmentally friendly**

and people-focused transportation practices has the potential of driving the creation of green jobs, showcasing a need to examine transformation and transition options for these important employment sectors. Practices such as implementing low emission zones and/or increasing the number of public transit routes available could decrease emissions and result in the transformation and/or creation of green jobs in the sector.

Within the **Water supply, sewage, waste management and remediation sector**, there are nearly 65,000 direct green jobs, and around half of these are concentrated in waste management and recycling activities. These jobs cover various functions, including waste collection, material recovery, recycling, and treatment and disposal of waste. Despite complete employment data not being available for



these activities in all cities, the results still suggest that green jobs within the sector for African cities are noteworthy. As cities continue to expand essential waste management and recycling stations, there is great potential for the creation of local green employment.

It is also worth highlighting the sectors with the higher rates of green jobs (over 20% of total employment), which are not always the largest sectors of the economy:

- Water supply; sewerage, waste management and remediation activities, where 85% of employment are green jobs
- Transportation and storage, where over 40% of employment are green jobs
- Electricity, steam and air conditioning supply, where over 30% of employment are green jobs
- Construction, where over 30% of employment are green jobs

Potential growth areas for green jobs

Several sectors demonstrate a high concentration of green jobs, which align with regional policy objectives for a green transition, such as renewable energy and green mobility systems.

Findings from the analysis show strong **green employment in the electricity and energy supply sector in Africa**. The **‘Electricity, steam and air conditioning supply’ sector** in the region’s cities have 31.7% green jobs (23,200 jobs). The increasing availability of renewable energy in Africa could be leveraged to power other sectors. This highlights the need for increased sector-specific investment and development of infrastructure and manufacturing capabilities to fully support the goals of renewable energy security and affordability in the region, including within cities.

The **Construction sector** is among the top five employment sectors in the region’s cities. In this sector, 32% of jobs (321,680) are categorised as green, with 25% of the total jobs considered direct green, with particularly high rates of green activity observed in the ‘construction of buildings’ workforce covering residential, non-residential, and commercial buildings.⁴² **As one of the biggest city employers, the**



sector has significant potential for creating green jobs, especially as urban populations grow. This increase in urbanisation presents opportunities not only for sustainable urban development but also for upgrading or retrofitting existing buildings to enhance energy efficiency. Moreover, providing green and future-proof public infrastructure will be critical as urbanisation increases.⁴³

By **prioritising greening large employing sectors like ‘Wholesale and Retail’, ‘Manufacturing’ or ‘Construction’, cities can also leverage existing local economic dynamics to capitalise on their workforce skills while boosting green job creation.** For example, incentivising sectors like ‘Wholesale and retail trade’ to adopt more energy-efficient practices will increase their demand for direct green materials and services and boost the need for green skills and training across various sectors. This includes everything from logistics to repair services, creating a widespread green ripple effect throughout the urban economy.

Other sectors

The 'Manufacturing' sector, despite being one of the top three employers in the region, has a relatively low green job representation at just 5.3%. This low percentage is attributed to a range of factors but notably the fact that many green practices such as repair, recycling and small-scale manufacturing in cities are often unrecorded and carried out in the informal labour market not captured here. These green job figures illustrate the important potential for **sectors like manufacturing** in urban green economic strategies in African cities, where a process to ensure social equity and a **just transition⁴⁴ will also be essential**. These elements should be at the heart of the complex network of green policies and initiatives, environmental commitments, and active labour market policies accessible to C40 mayors.

Agriculture, a pivotal sector in many African countries, holds substantial potential for green transformation, especially as the region's urban populations grow. Urban agricultural practices are primarily motivated by the need to ensure food security⁴⁵ and to provide primary or supplementary income for many poor or informal residents.⁴⁶ Despite accounting for only 4% of green jobs, Agriculture is a major employer. In Sub-Saharan Africa, agricultural jobs comprise 52% of total employment.⁴⁷ **Given the number of workers it employs, even small sustainable changes can have a**

considerable impact. Furthermore, the interplay between urban demand and agricultural supply, especially in cities, could foster greener production methods regionwide. Cities can support local, organic agricultural farming in manifold ways to ensure that urban residents are [accessing healthy, sustainable and affordable food](#) while boosting green jobs in agriculture: developing education and outreach programmes for urban residents to improve their awareness of sustainable agriculture, supporting farmers' markets and food hubs that prioritise local organic food, embracing sustainable practices in their supply chain by operating on renewable energy, or helping the establishment of community gardens and allotment programs to grow their own organic produce and create local green jobs. **Some of**

Job distribution and equity

the sectors with the highest number of green jobs show existing inequalities in the demographic distribution of jobs. For example, in countries like Ethiopia or Kenya, where data was available, less than 20% of the jobs in the construction and transportation sectors, both with a large green job potential, are occupied by women. Similarly, youth employment in these countries represents around 15% in the construction sector and 15-29% in the transportation sector.

Deliberate efforts to engage both youth and women could supply the workforce with capacity for significant growth in clean construction, electric vehicles, and other growing sustainable fields. For example, Johannesburg hosted a [Green Jobs Youth Expo](#) in February 2024 which included dynamic workshops and engaging discussions and networking with industry professionals. It also showcased environmentally focused job opportunities in renewable energy, sustainable agriculture, eco-tourism, and more, equipping youth with the tools to enter the green job market.



Call to action and investment

Cities are crucial in leading the transition to a green economy. To realise C40 mayors' ambition to drive the creation of 50 million jobs this decade, **African cities need to continue investing in the green workforce and supporting local investment from the private sector and other levels of government.** To boost green jobs and ensure a sustainable future, cities, businesses and investors can:

- **Invest in key sectors.** Major employment sectors like agriculture, manufacturing, construction, and services contribute significantly to employment, yet their green job potential remains largely untapped. These sectors offer both significant opportunities for urban employment and greening industry practices from urban centres and through supply chains. With strong demand within cities and city-led policy in areas such as sustainable urban development, housing policy, etc., cities are key to transformative, inclusive green employment.
- **Enhance access to education and reskilling to equip the workforce and make green jobs accessible to a wider population.** This can include establishing paid or supported training programmes that prepare vulnerable groups for opportunities in emerging fields, or investing in wrap-around supports to ensure worker stability (e.g., transportation, childcare, housing). Developing career pathways and financial incentives for green professions, especially for workers transitioning from non-green sectors is pivotal.

Spotlight:



In [Johannesburg, a green jobs analysis](#) was conducted to estimate the number of green jobs that could potentially be created from implementing mitigation and adaptation actions from the city's climate action plan by 2030. The city conducted a workforce equity assessment to understand the quality of these jobs and how they will be distributed across population groups and sectors, and looked into the number of jobs at risk due to the transition.

Spotlight:



The **City of Cape Town** has invested in capacity building by training building examiners and building control officers on the [Net Zero Carbon Building Policy](#), which commits the city to net zero carbon new buildings by 2030. These skill trainings help ensure a stronger understanding of the importance of enforcing robust compliance towards net zero goals at the planning application stage. All building control officers across all eight city districts were trained in 2023. This training, alongside a compliance study, is a key part of the capacity building required to support the city's net zero carbon building goals.

- **Support small and medium-sized enterprises (SMEs) and inclusive employment.** SMEs are estimated to comprise 80% of Africa's economy,⁴⁸ so it is important to encourage small and medium-sized enterprises to create quality green jobs and improve access for vulnerable groups, such as women, youth, and the unemployed. Cities could provide training opportunities for SMEs on how to facilitate inclusive employment, such as through the implementation of incentives (e.g. tax deductions) for training or wage subsidies for green sector employment. Improving access for underserved communities could also include establishing paid training programmes or wrap-around support to ensure worker stability, such as free or discounted transportation. The experiences of black entrepreneurs and executives are critical in overcoming barriers and ensuring that support programmes resonate with the diverse entrepreneurial landscape.

Spotlight:

The City of [**Tshwane's Urban Agriculture Incubator**](#) provided youth with various training programmes to incubate their ideas and launch them into potentially becoming 'agripreneurs.' The city provided needed support for the cohort of entrepreneurs, with the goal of mitigating the high failure rates common to new businesses in the food and agricultural sector. The cohort participants were also introduced to future employment opportunities to address food security. The programme led to the development of a new partnership between the agricultural function and management teams within the city, resulting in the identification of new innovative farming concepts.

- **Foster innovation in green industries.** Leverage the service sector to support green manufacturing and prioritise investments in public transport infrastructure for reduced emissions and better air quality.

Spotlight:

[**Nairobi's CHOICE Innovation Hub**](#) provides youth employment and entrepreneurship opportunities for migrants, refugees, and internally displaced individuals. Backed by the Mayors Migration Council's Global Cities Fund for Migrants and Refugees, the centre is set to train over 100 young people to enter the green jobs market and help to incubate ten green startups in its first few months of operation.

- **Collaborate on policy.** Work with stakeholders at all levels to create an environment conducive to green jobs. Integrate formal and informal workers in policy design, especially in waste management and recycling sectors.

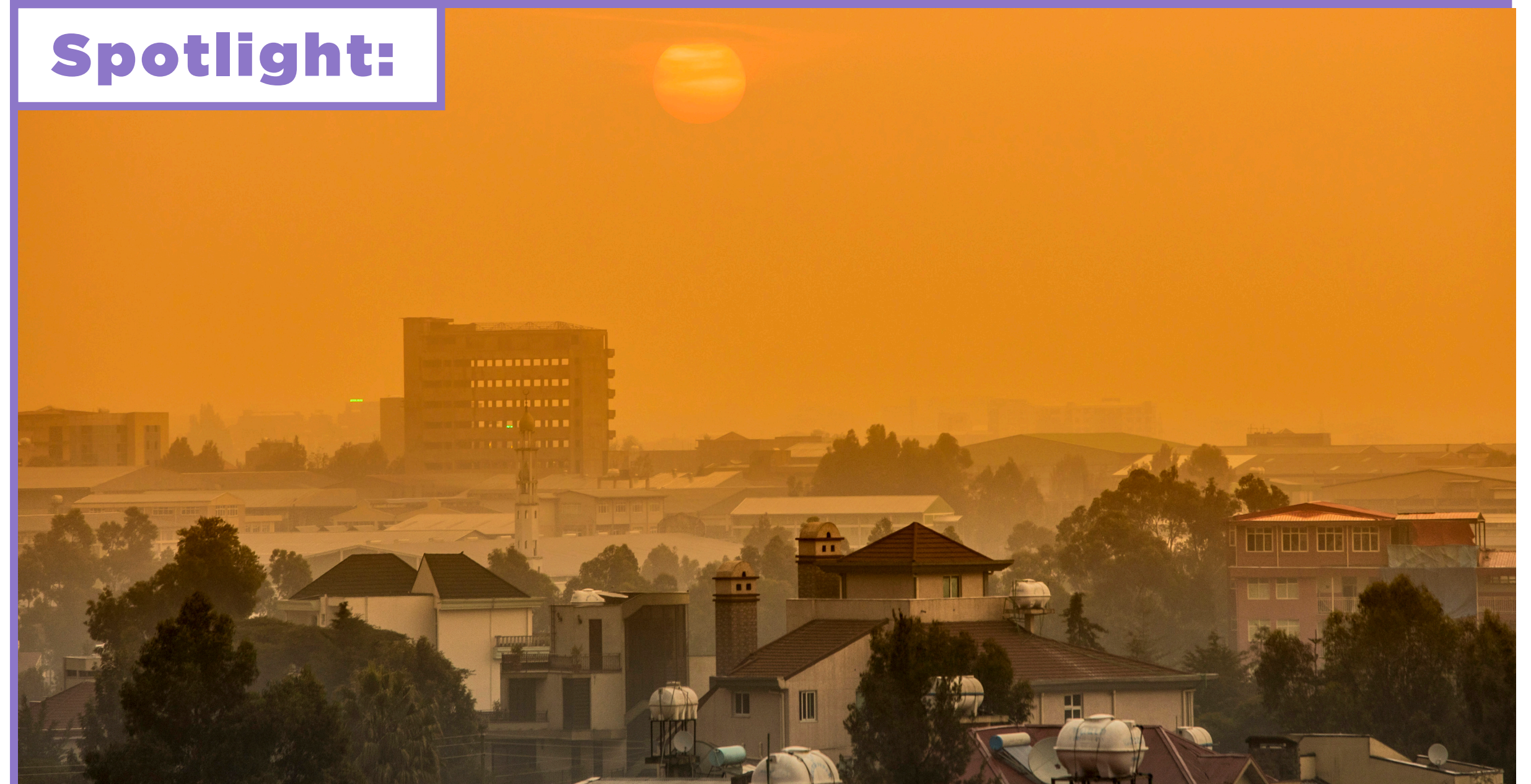
Spotlight:



Since 2018, the [#FreetownTheTreeTown initiative](#) has planted more than 600,000 trees across 300+ communities to tackle flooding and mudslides that resulted from deforestation in and around the city. The goal is to reach 1 million trees in 2024. These measures have improved water security and reduced flash flooding and landslides. The programme has developed a system for businesses to invest in these trees as part of their net-zero strategies, achieving longer-term private investment. The campaign has directly or indirectly created over 1,000 green jobs along the value chain, from workers in tree nurseries to community growers – of whom 80% are youth and 48% are women.

- **Update public procurement standards and use public procurement to drive green market transformation.** Develop and update public procurement standards to support green purchasing decisions. This could be achieved by cities actively leveraging their procurement power to include renewable energy and green standards in public investments, thereby encouraging suppliers and manufacturers to innovate and adopt sustainable practices. These efforts require city capacity and could entail developing and updating standards to support green public purchasing decisions, stimulating the scaling up of green practices in manufacturing, and providing incentives to adopt competitive green practices. Furthermore, ongoing training for public procurers at the city level is critical to ensure they are well-equipped with the latest knowledge and tools to assess and effectively implement green procurement policies. Procurement standards also present an opportunity to increase job quality and create more entry points for small, minority- and women-owned firms so that they gain access to contract opportunities.

Spotlight:



[Livelihoods Improvement for Women and Youth \(LIWAY\)](#)

has worked with the **Addis Ababa** Cleaning Management Agency and disadvantaged women and youth to start waste-collection micro-enterprises, which gather solid waste from across the city and sell it to larger recycling firms. The project provides training on waste management and business skills to women and helps them form recycling cooperatives. The micro-enterprises have connected with recycling companies, schools, and public institutions to source waste in an organised way, buying from individual collectors, and supporting these individuals' livelihoods. TechnoServe's support is also providing equipment and containers for storage. The LIWAY project, has created employment and income for more than 51,500 women and youth in 2022, reaching close to 80,000 people as of 2023.

- **Recognise and integrate the informal green economy.** Acknowledge the substantial role of the informal economy in green activities, especially in sectors like agriculture and waste management. Develop strategies to measure green jobs within these sectors, improve the working conditions of these informal green workers, providing them with skills and legal recognition, social protection, and collectivisation (if wanted) to improve their working conditions, building resilience and enabling a just transition.

Spotlight:



Accra Metropolitan Assembly (AMA) implemented a municipal solid waste source separation and compost project that adopts the participatory action learning approach to mobilise the community and other stakeholders, in this case, the informal waste sector. The goal of the project is to reduce the emissions of GHGs by diverting organic waste from landfills through composting and increasing waste collection coverage. Community composts have been set up in each of the selected communities to produce compost for use within the community (such as greening public spaces, home gardening, etc.). Informal waste collectors from low-income communities and difficult-to-reach areas are engaged to collect separated waste.

Currently, over 850 informal waste collectors are working within the jurisdiction of the AMA without a contract with the city. As part of the programme, the city facilitates the formation of cooperatives among informal sector operations, and implements a social insurance scheme, which includes a child care centre that provides safe, non-hazardous spaces for informal waste workers' children. The city has offered capacity-building programmes in health and safety, financial literacy, road safety, and traffic regulation, which help to improve the quality of life and jobs for informal waste workers while deepening collaboration and partnership between the city and the informal sector to support a just transition. Migrant workers have also been supported with access to childcare, healthcare, social and financial inclusion services.

Examples of **cities** **snapshots**⁴⁹

For the below city employment breakdowns, we have **classified the sectors of the economy** as either:

Green:

Includes sub-sectors that are considered 100% green, (e.g., repair or waste collection and recycling sectors⁵⁰), and sub-sectors that are partially green (e.g., energy generation, manufacturing, construction, etc.), where the share of green activity has been estimated through various methods, which can be found in detail in the methodology [here](#).

Non-green:

Includes sub-sectors that are not contributing to the green transition (such as jobs in fossil fuel industries), and sub-sectors whose green activity has not been calculated in this analysis to date (e.g. fishing) until a sector-specific method for them can be developed - see [methodology](#) for more details.

Other:

Refers to sub-sectors that are neither explicitly green nor non-green by definition. These sectors may have the potential to transform into majority green jobs.



ACCRA

Total employment	1,987,750
Total green jobs	454,440 (22.9% ⁵¹)
Total direct green jobs ⁵²	326,270 (16.4% ⁵³)
Total indirect green jobs	128,170 (6.4% ⁵⁴)
Other jobs	1,172,500 (59% ⁵⁵)
Total non-green jobs	360,810 (18.2% ⁵⁶)

Top 3 green job sectors in overall numbers

Wholesale and Retail trade, Repair of motor vehicles and motorcycles (202,660 green jobs, 28.7%⁵⁷), Transportation and storage (103,790 green jobs, 82%), Construction (34,000 green jobs, 23.8%)

JOHANNESBURG

Total employment	1,845,000
Total green jobs	124,430 (6.7%)
Total direct green jobs	61,460 (3.3%)
Total indirect green jobs	62,970 (3.4%)
Other jobs	1,675,140 (90.8%)
Total non-green jobs	45,430 (2.5%)

Top 3 green job sectors in overall numbers

Construction (55,220 green jobs, 47.2%), Wholesale and Retail trade, Repair of motor vehicles and motorcycles (12,820 green jobs, 4.8%), Agriculture, forestry and fishing (10,620 green jobs, 3%)

The data for Accra covers the Accra Metropolitan Area.⁵⁸



NAIROBI

Total employment	2,267,000
Total green jobs	640,220 (28.2%)
Total direct green jobs	384,950 (17%)
Total indirect green jobs	255,270 (11.3%)
Other jobs	1,487,190 (65.6%)
Total non-green jobs	140,310 (6.2%)
Top 3 green job sectors in overall numbers	Wholesale and Retail trade, Repair of motor vehicles and motorcycles (200,090 green jobs, 31.7%), Education (108,430 green jobs, 52.1%), Transportation and storage (101,160 green jobs, 79.6%)



Endnotes

¹ C40 Cities. (2022). [C40 cities to drive the creation of 50 million good, green jobs by 2030](#). As of 2023, C40 cities have reached nearly 16 million green jobs towards the 50 million target. Find the latest information and data on [C40's Good Green Jobs webpage](#).

² 12 out of 13 C40 African cities provided data, including: Accra, Addis Ababa, Cape Town, Dakar, Dar es Salaam, Durban, Ekurhuleni, Freetown, Johannesburg, Lagos, Nairobi, and Tshwane.

³ These total jobs cover the employment that is registered in the datasets used for this analysis. See note in methodology section.

^{4,5} World Resources Institute. (2021). [The Green Jobs Advantage: How Climate-friendly Investments Are Better Job Creators](#).

⁶ C40 Cities. (2022). [The Cost Of Fossil Gas: The Health, Economic And Environmental Implications For Cities](#).

⁷ C40 Cities. (2023). [Achieving the just transition: A toolkit for city leaders across the globe](#).

⁸ Industrial heritage, in this context, could include historical, technological, social, architectural or scientific remains of traditionally non-green jobs.

⁹ 74 cities across five continents were analyzed in this first analysis. Overall, green jobs are high in sectors that are strongly influenced by local public policy measures, including transport, energy, construction, and waste management. See [here](#) for global results.

¹⁰ Note: these results are based on the methodology developed for this research, and can differ from other green jobs analyses carried out by cities or other organisations. Whilst they all aim to measure existing green jobs in cities across sectors of the economy, the definition used for green jobs, the employment classifications, scope and methods often vary leading to differences in the results. The estimation of green jobs is still a novel area of research and different methods and definitions are valid.

¹¹ C40 Cities. (n.d.). [Good Green Jobs](#).

¹² ILO's federal employment data collects data from national household labour force surveys (LFS). This means that some informal employment may be captured to the extent that it is reported in this collection.

¹³ International Labour Organization. (2022). [Informal Economy in Africa: Which Way Forward? Making Policy Responsive, Inclusive and Sustainable](#).

¹⁴ Bloomberg. (2023). [New Africa Renewable Energy Manufacturing Initiative Will Help Unleash 1.2 Terawatts of Renewable Energy, Create up to 14 Million Jobs, and Increase GDP by Over Six Percent by 2050](#). Bloomberg Philanthropies.

¹⁵ International Labour Organization. (2022). [Informal Economy in Africa: Which Way Forward? Making Policy Responsive, Inclusive and Sustainable](#).

¹⁶ C40 Cities. (n.d.). C40 Knowledge Hub.

¹⁷ ECA. (2023). [African leaders call for more investments in green energy and water infrastructure to accelerate sustainable development](#). United Nations Economic Commission for Africa.

¹⁸ C40 Cities. (2023). [At the Africa Climate Summit, city leaders call for action and investment on climate and green jobs](#).

¹⁹ Dickie, G. and Wardell, J. (2023). [Africa presents challenges, solutions in clean energy transition](#). Reuters.

²⁰ ECA. (2023). [Financing climate resilience and a just transition in Africa](#). United Nations Economic Commission for Africa.

²¹ IEA. (2022). [Key findings – Africa Energy Outlook 2022 – Analysis](#).

²² Africa.com editors. (2023). [Unlocking The Green Jobs Opportunity For African Youth In The Green Transition](#).

²³ C40 Cities. (2021). [Creating local green jobs: the United States, Italy and South Africa](#).

²⁴ These jobs would be from the implementation of ambitious climate mitigation and adaptation interventions.

²⁵ GEAPP. (2022). [Global Energy Alliance for People and Planet \(GEAPP\) and Shortlist Introduce 'Women for Green Jobs' Initiative Across Six Countries in Africa](#).

²⁶ International Renewable Energy Agency. (n.d.). [Geopolitics of the Energy Transition: Critical Materials](#). IRENA.

²⁷ United Nations Economic Commission for Africa. (2023). [African leaders call for more investments in green energy and water infrastructure to accelerate sustainable development](#). UNECA.

²⁸ IEA. [Key findings – Africa Energy Outlook 2022](#).

²⁹ Stratton-Short, S and Morgan, T. (2023). [Invest in renewable energy in African cities](#). UNOPS.

³⁰ Guerrero Casas, M. (2018). [Cape Town, South Africa: Building a Network of Street Enthusiasts](#). Urbanet.

³¹ Global Centre for Climate Mobility. (2021). [Africa Climate Mobility Initiative](#).

³² Cash, K. (2022). [Everything you need to know about African EV manufacturing](#). Energy for Growth Hub.

³³ Mukeredzi, T. (2021). [Opportunities for Africa in the electric vehicle market](#). African Business.

³⁴ The 8 countries include: Kenya, Ghana, Ethiopia, Tanzania, Senegal, Sierra Leone, South Africa, and Nigeria.

³⁵ APRI. (2023). [Green technology and youth employment potential in Africa: a continental scoping report](#).

³⁶ These activities include 'automotive repair and maintenance', 'commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance', 'electronic and precision equipment repair and maintenance', 'maintenance and repair of motor vehicles', 'motorcycle maintenance and repair', 'personal and household goods repair and maintenance', 'retail trade, except of motor vehicles and motorcycles; repair of personal and household goods', 'sale, maintenance and repair of motor vehicles and motorcycles', 'sale, maintenance and repair of motorcycles and related parts and accessories', and 'wholesale and retail trade and repair of motor vehicles and motorcycles'.

³⁷ Collacott, L. (2023). [Making the most of materials: Africa's skills in repair and repurposing point the way for the Global North](#). Ellen MacArthur Foundation.

³⁸ Rowe, K and Stockley-Patel, S. (2023). [The Future of Work in the Informal Economy](#). BRINK.

³⁹ C40 Cities. (n.d.). [Good, Green Jobs](#).

⁴⁰ This category includes 'urban, sub-urban, passenger transport', 'inter-urban rail passenger transport', and 'other land passenger transport.'

⁴¹ These jobs are primarily hosted in Accra, Addis Ababa, Dar es Salaam, Freetown, and Nairobi.

⁴² SICCODE. [ISIC Code 4100 Construction Of Buildings](#).

⁴³ C40 Cities. (2023). [Green Jobs, Greener Cities: Prioritising people and pioneering job creation in Africa](#).

⁴⁴ International Labour Organization. (2023). [Just Transition Policy Brief](#). ILO.

⁴⁵ PRB. (2013). [Urban Agriculture Increases Food Security for Poor People in Africa](#). Population Reference Bureau.

⁴⁶ Wetaya, R. (2020). [Urban agriculture thriving in East Africa during COVID-19](#). Alliance for Science.

⁴⁷ Akiwumi, P. (2022). [Revitalizing African agriculture: Time for bold action](#). United Nations Conference on Trade and Development.

⁴⁸ Runde, D., Savoy, C., et. al. (2021). [Supporting Small and Medium Enterprises in Sub-Saharan Africa through Blended Finance](#). Centre for Strategic and International Studies.

⁴⁹ The cities highlighted here were selected because of their high engagement and leadership in green jobs work.

⁵⁰ This methodology considered waste collection, remediation, materials recovery, wastewater treatment and management as 100% green. In addition, within the waste treatment and disposal activities, the activities considered green are recycling, composting and anaerobic digestion. This is, for waste treatment and disposal, we estimated the activity that is not related to incineration or landfill, which are considered non-green. See [methodology](#) for full details.

^{51,53,54,55,56} This percentage is calculated over total employment.

⁵² Jobs refer to Full-Time Equivalent (FTE) for all cities and categories.

⁵⁷ This percentage is calculated over total employment in the sector.

⁵⁸ The scale of data available per city differs across countries and regions. In general, this analysis aimed to cover the metropolitan areas of cities, a common data scale to capture the economic hub that exists in and around the cities, but in some instances only city data is covered due to data availability.

About



C40 is a network of nearly 100 mayors of the world's leading cities, who are working to deliver the urgent action needed to address the climate crisis and create a future where everyone, everywhere can thrive. For more information, visit www.C40.org and <https://www.c40.org/campaigns/good-green-jobs/>



Circle Economy Foundation empowers industries, cities and nations with practical and scalable solutions to put the circular economy into action. Its vision is an economic system that ensures the planet and all people can thrive. To avoid climate breakdown, Circle Economy Foundation's goal is to double global circularity by 2032.

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